

Disadvantaged Communities – Single-Family Solar Homes (DAC-SASH) Program

Semi-Annual Progress Report

Q3-Q4 2024



Contents

Disadvantaged Communities – Single-Family Solar Homes (DAC-SASH) Program.....	1
Semi-Annual Progress Report	1
Q3-Q4 2024	1
1. Program Overview	3
1.1 Program Summary.....	3
1.2 Program History	4
2. Q3-Q4 2024 Data Update.....	7
2.1 Summary	7
Applications.....	8
Interconnected Projects	10
Average System Costs	13
TPO Projects	14
Tribal Projects	15
2.2 Workforce Development & Job Training	17
2.3 Subcontractor Partnership Program	20
2.4 Utility Referrals	22
Energy Savings Assistance Program (ESAP) Enrollment	22
ESAP Leads.....	23
2.5 Complementary Programs.....	25
SGIP Integration	25
EV Charger and Clean Mobility Programs.....	27
SCE CRH Program	28
3. Program Budget & Financing.....	30
4. Barriers to Participation	32
4.1 Income Eligibility Limitations for Homeowners	32
4.2 Need for Gap Financing	32
4.3 Additional Structural Costs.....	33
4.4 Challenges with SGIP	33
5. Conclusion	35

1. Program Overview

1.1 Program Summary

The Disadvantaged Communities – Single-Family Solar Homes (DAC-SASH) program is overseen by the California Public Utilities Commission (CPUC) and provides incentives for solar photovoltaic (PV) systems to qualifying low-income homeowners living in disadvantaged communities¹ (DACs) or California Indian Country². GRID Alternatives (GRID), a non-profit solar contractor, is the statewide Program Administrator (PA) for the DAC-SASH program.

Through the DAC-SASH program, no-cost solar PV system installations are available to low-income families in California's DACs. Its primary goal is to provide opportunities for low-income homeowners within DACs to overcome barriers to accessing on-site, solar PV systems to decrease electricity usage and bills without increasing monthly household expenses. Low-income families face numerous barriers to accessing solar including financial, lack of marketing and outreach, educational and linguistic, distrust of outside entities and governments, and structural barriers like housing types and roof condition. GRID's experience has demonstrated that dedicated, carefully designed and executed low-income solar programs can overcome these barriers and provide access to the program and meaningful community co-benefits.

The program is funded primarily through greenhouse gas (GHG) allowance proceeds from California's Cap-and-Trade Program, with additional support from public purpose program funds if needed. The program offers a single incentive level of \$3/W CEC-AC, which covers a significant portion of the cost of solar PV system installations. GRID secures additional funding sources beyond the base incentive to cover financing gaps. To date, GRID has successfully closed the funding gap for approximately 90% of DAC-SASH projects through its Third-Party Ownership (TPO) model, as well as philanthropic contributions, local grants, and funding from programs like the Transformative Climate Communities (TCC) Program, which is a program in

¹ Disadvantaged communities for the DAC-SASH program are defined as census tracts scoring in the top 25% statewide on the CalEnviroScreen 4.0 map. Homeowners in one of 22 additional census tracts that are in the top five percent of pollution burden but that do not have an overall CalEnviroScreen score because of unreliable socioeconomic data are also eligible. See <https://oehha.ca.gov/calenviroscreen/maps-data>.

² CPUC D. 20-12-003 modified the program to allow qualifying homeowners living in California Indian Country as defined in 18 United States Code Section 1151, with the exception of privately held in-holdings, which are defined as non-Indian owned fee land located within the exterior boundaries of California Indian Country; in the event of multiple owners, such land shall be considered Indian owned if at least one owner is a tribe or tribal member, regardless of the use of the land.

California that funds development and infrastructure projects to support major environmental, health, and economic benefits in DACs.

DAC-SASH is part of a broader policy framework aimed at supporting renewable energy adoption in DACs. It complements other CPUC programs like the Disadvantaged Communities Green Tariff (DAC-GT) which provides access to solar PV energy for low-income customers unable to install rooftop systems.

In addition to the above-mentioned location requirements, homeowners must be billing customers of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), or San Diego Gas & Electric Company (SDG&E) (collectively, the California investor-owned utilities or IOUs). Details for the DAC-SASH program's income qualifications³, other eligibility criteria, and application processes can be found in the [DAC-SASH Program Handbook](#).

D.18-06-027 and GRID's DAC-SASH Administration Contract with SCE outline reporting requirements for this Semi-Annual Progress Report, which will be published by January 30 and July 30 of each program year and detail the progress of the prior two quarters.

1.2 Program History

DAC-SASH was established as part of California's broader initiative to increase access to renewable energy in disadvantaged communities (DACs). The program was developed in compliance with Assembly Bill (AB) 327 (Perea, 2013, ch. 611), which directed the CPUC to create a successor to the existing Net Energy Metering (NEM) tariffs as well as specific alternatives designed for growth among residential customers in DACs. As part of this directive, the CPUC issued Decision (D.) 18-06-027⁴ in June 2018, introducing two programs aimed at promoting renewable energy adoption among residential customers in DACs:

1. **DAC-SASH Program** – Provides upfront financial incentives for installing solar PV energy systems on the homes of low-income, single-family homeowners in DACs.
2. **DAC-GT Program** – Allows income-qualified residential customers in DACs to receive a 20% discount on their electricity bills by participating in utility-scale clean energy programs.

³ California Public Utilities Commission. (n.d.). CARE and FERA program. <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/care-fera-program>

⁴ D. 18-06-027: Alternate decision adopting alternatives to promote solar PV distributed generation in disadvantaged communities. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M216/K789/216789285.PDF>

The DAC-SASH program was modeled after the earlier Single-Family Affordable Solar Homes (SASH) program, which successfully provided solar PV incentives for low-income homeowners. The CPUC determined that the DAC-SASH program would be managed by a single statewide PA through a competitive bidding process.⁵ On January 4, 2019, GRID was selected as the statewide PA for DAC-SASH, overseeing all aspects of program implementation.

To ensure ongoing program effectiveness, DAC-SASH has been subject to regulatory updates through Advice Letters (ALs), resulting in various program refinements:

- AL 13-E⁶ (2019) – Established DAC-SASH Handbook v1 and outlined initial program implementation.
- AL 14-E (2019) – Addressed third-party ownership (TPO) contract term lengths, though no handbook changes were made.
- AL 15-E (2020) – Introduced temporary modifications due to the COVID-19 pandemic, leading to the release of DAC-SASH Handbook v2.
- AL 16-E (2021) – Expanded consumer protection measures, workforce development initiatives, the Subcontractor Partnership Program (SPP), and eligibility for tribal communities (Indian Country), culminating in DAC-SASH Handbook v3.
- AL 17-E (2022) – Allowed DAC-SASH solar PV system to be sized up to 150% of historic usage with no extra documentation required and allowed virtual or “desktop review” DAC-SASH compliance inspections, resulting in DAC-SASH Handbook v4.
- AL 18-E (pending disposition as of year-end 2024) - Seeks to update the current system size limit of 5 kilowatts (kW) AC and replace it with the standard size limits for applicable utility interconnection rules.

The DAC-SASH program continues to support advances in environmental justice by directly addressing barriers – such as lack of access and capital – that prevent low-income homeowners in DACs from benefiting from solar PV energy. This allows communities that are disproportionately affected by environmental pollutants to have access to solar PV energy, reducing energy costs and carbon footprint. This aligns with the CPUC’s Environmental and Social Justice (ESJ) Action Plan⁷, which calls for increased investment in clean

⁵ D. 18-06-027, p. 33.

⁶ Resulted in Resolution E-5020 Approving GRID Alternatives Advice Letter 13-E/E-A, Proposed Disadvantaged Communities – Single-family Solar Homes (DAC-SASH) Program Handbook and Program Implementation Plan, pursuant to Decision 18-06-027.

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M313/K697/313697139.PDF>

⁷ Environmental & Social Justice Action Plan Version 2.0. <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/environmental-and-social-justice.pdf>

energy resources to benefit ESJ communities, and by ensuring inclusive participation of California's clean energy transition, as outlined in D. 20-07-008⁸ and D. 20-12-003⁹. Additionally, by incorporating workforce development into implementation, DAC-SASH promotes long-term economic empowerment and energy equity in historically marginalized neighborhoods, as described in D. 18-06-027¹⁰.

⁸ D. 20-07-008: Implementing automatic enrollment of disadvantaged communities green tariff. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M344/K058/344058812.PDF>

⁹ D. 20-12-003: Modifying DAC-SASH eligibility and enhancing outreach. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M354/K045/354045228.PDF>

¹⁰ D. 18-06-027: Alternate decision adopting alternatives to promote solar distributed generation in disadvantaged communities. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M216/K789/216789285.PDF>

2. Q3-Q4 2024 Data Update

2.1 Summary

Solar PV adoption in underserved communities continued to grow throughout 2024 under the DAC-SASH program, shaped by both notable achievements and implementation challenges. Over the year, 1,241 applications were submitted, with 1,230 approvals, marking the highest annual application volume in the program's history.

While 2024 saw record application and interconnection numbers, the latter half of the year was marked by delays and administrative challenges that slowed the progress of projects. The pairing of solar PV systems with battery storage introduced additional complexities, particularly with Self-Generation Incentive Program (SGIP) approvals and equipment procurement, leading to lower interconnection numbers in Q3 and Q4. Moreover, financial barriers (such as clients' inability to afford necessary roof repairs) further limited project completion rates. Despite these setbacks, GRID remains committed to assisting clients and improving processes to mitigate these issues.

Table 1 summarizes the status of DAC-SASH applications from the beginning of the program through Q4 2024 based on the application approval date. Applications are categorized into three steps:

- Step 1: Applications Under Review
- Step 2: Confirmed Applications/Reservations
- Step 3: Completed/Installed

Table 1. Status of DAC-SASH applications through Q4 2024 based on the application approved date

Application Status	Number of Applications				Total Capacity (kW, CEC-AC)	Total Incentives (\$ millions)
	PG&E	SCE	SDG&E	Totals		
STEP 1: Applications Under Review*	151	160	11	322**	1288**	\$3.86
STEP 2: Confirmed Applications/Reservations	144	102	7	253	1,078.2	\$3.23
STEP 3: Completed/Installed	1,758	1147	100	3005	11,951.0	\$35.85
Total (all applications and installs)	2053	1409	118	3580	14,317.1	\$42.95
* Step 1 system sizing (kW) and incentives (\$) are estimates based on an average system size of <u>4.0 kW</u> CEC-AC and incentive level of \$3.00/W CEC-AC. System designs are not completed until the Applicant is confirmed to meet all other program requirements.						

At the end of 2024, 322 applications were under review, with an estimated 1,288 kW (1.3 MW) CEC-AC of solar PV capacity and \$3.86 million in incentives. Since these capacity and incentive figures are based on estimates, they may change as applications progress. The majority (80-90%) of projects in this stage are expected to move on to Step 2. There were also 253 reservations, totaling 1,078.2 kW (1.1 MW) CEC-AC and \$3.23 million in incentives. Once approved, these projects move to Step 3, where installations are completed. Finally, by the end of 2024 there were 3,005 projects completed, accounting for 11,951 kW (12 MW) CEC-AC of installed solar PV capacity and \$35.85 million in incentives. Overall, combining all three steps, the program has processed or is processing 3,580 applications, with a total installed and estimated solar PV capacity of 14,317.1 kW (14.3 MW) CEC-AC and \$42.95 million in incentives.

Applications

In 2024, GRID saw a record-breaking number of application submissions and approvals. In the first half of the year GRID processed 268 submitted applications in Q1 and 341 in Q2, alongside 278 and 328 approvals, respectively. There was a peak in processed submissions and approvals during Q3, with 441 applications submitted and 445 approved, making it the strongest quarter of the year.

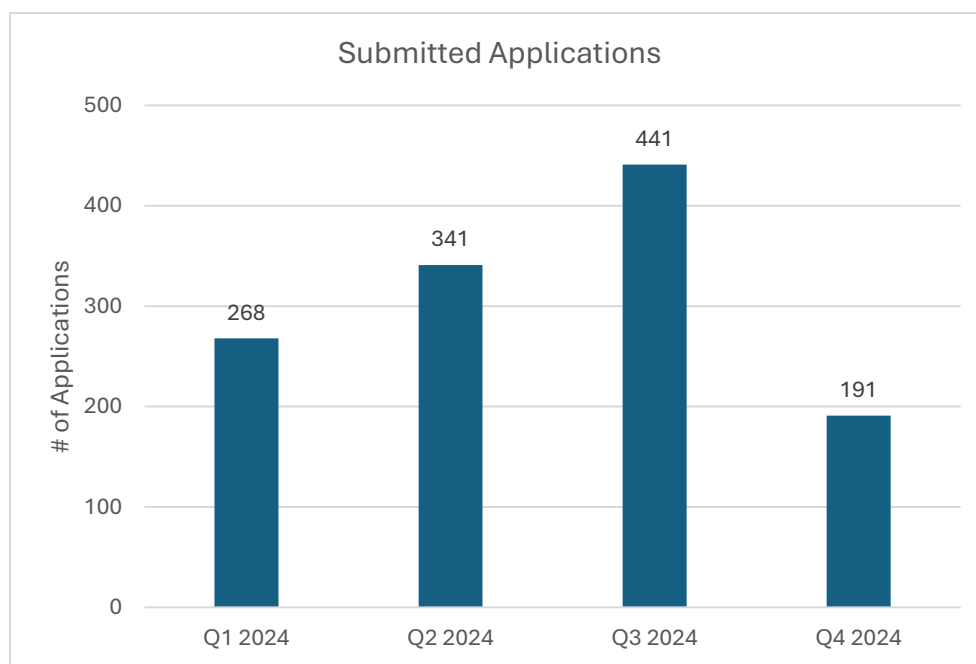


Chart 1. Submitted applications by quarter in 2024.

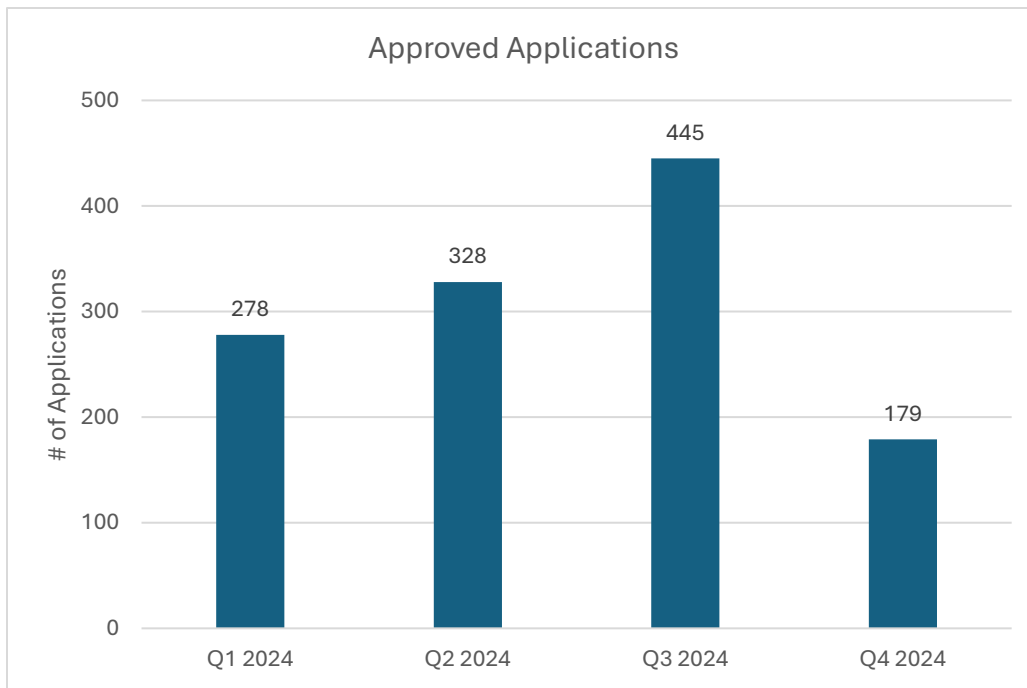


Chart 2. Approved applications by quarter in 2024.

However, in Q4, the number of applications dropped dramatically to 191 submitted and 179 approved, reflecting the challenges that GRID and clients faced. Confusion surrounding SGIP rules and program requirements, combined with delays in releasing SGIP Residential Solar and Storage Equity (RSSE) funding, created significant barriers for applicants. Furthermore, industry-wide procurement delays for battery storage equipment further complicated project timelines, leading to incomplete system installations and slowed progress. The additional administrative burden required to correct documents, re-sign contracts, and resolve SGIP-related issues also meant that GRID staff had less time for direct outreach and client engagement. Additionally, many clients required costly roof repairs or other necessary upgrades before installation, but financial limitations prevented them from moving forward.

Comparing 2024 to previous years, the number of applications indicates a continued upward trajectory in solar PV adoption despite the recent slowdown. The 1,241 applications submitted in 2024 surpassed all previous years, including 1,184 in 2023 and 994 in 2022. Similarly, the 1,230 applications approved in 2024 exceeded surpassed all previous years, including 1,132 approvals in 2023 and 1,034 in 2022.

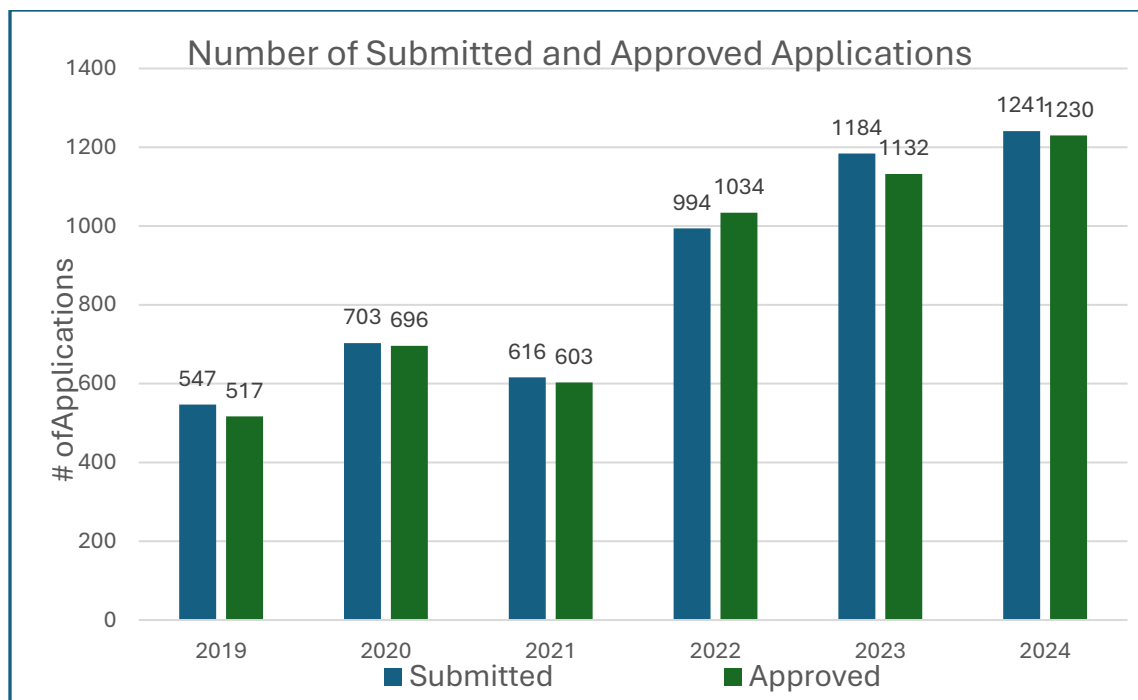


Chart 3. Submitted and approved applications by year.

Interconnected Projects

In 2024, there was a gradual decline in interconnected projects throughout the year, mirroring the challenges observed in the application process. In Q1, 243 projects with over 1MW were interconnected with an expected annual energy output of 1,615 MWh. By Q2, the numbers decreased, with 179 projects interconnected, totaling around 0.8 MW CEC-AC with an expected output of 1,054 MWh. The decline continued into Q3, where 156 projects were interconnected with around 0.7 MW capacity and an expected output of 1,054 MWh. The most significant drop occurred in Q4, with only 98 projects interconnected, producing 0.4 MW CEC-AC and an expected output of 646.2 MWh.

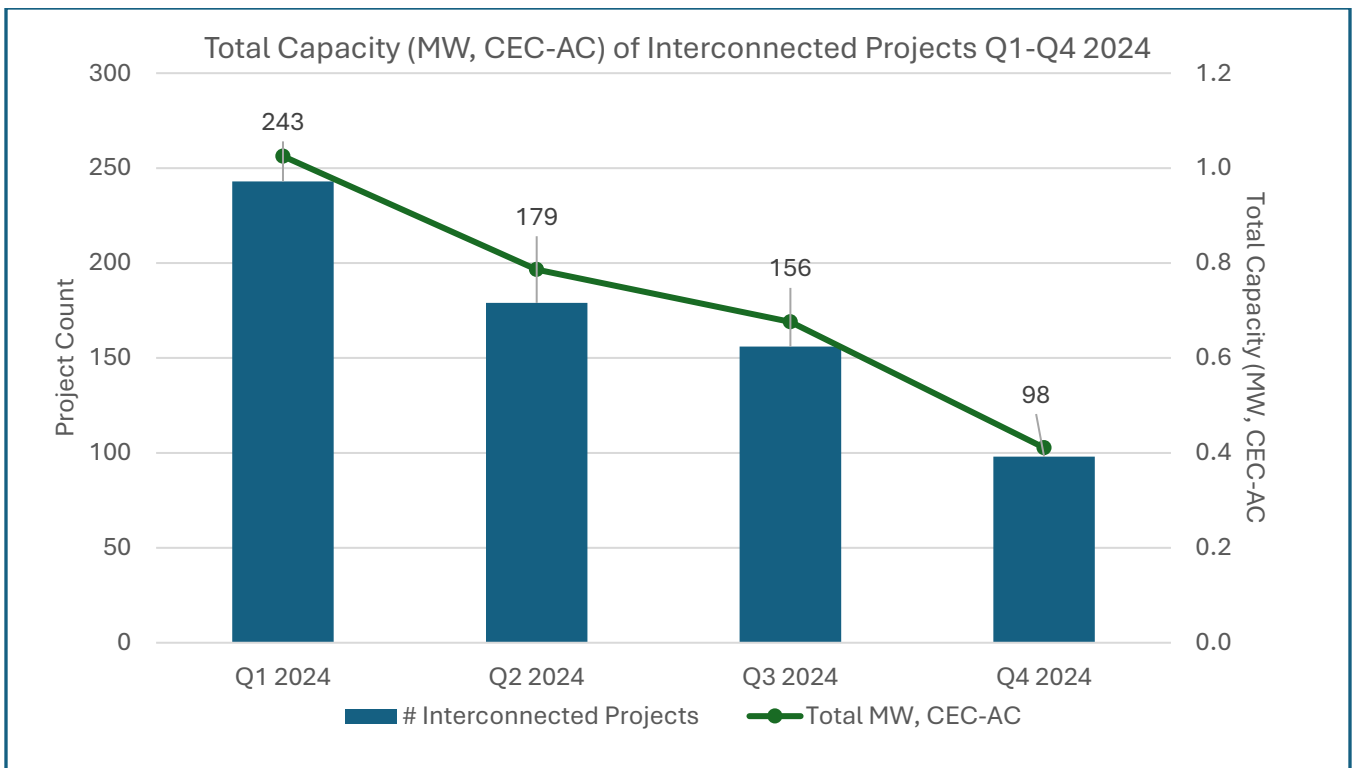


Chart 4. Total Capacity (MW, CEC-AC) and number of interconnected projects by quarter in 2024

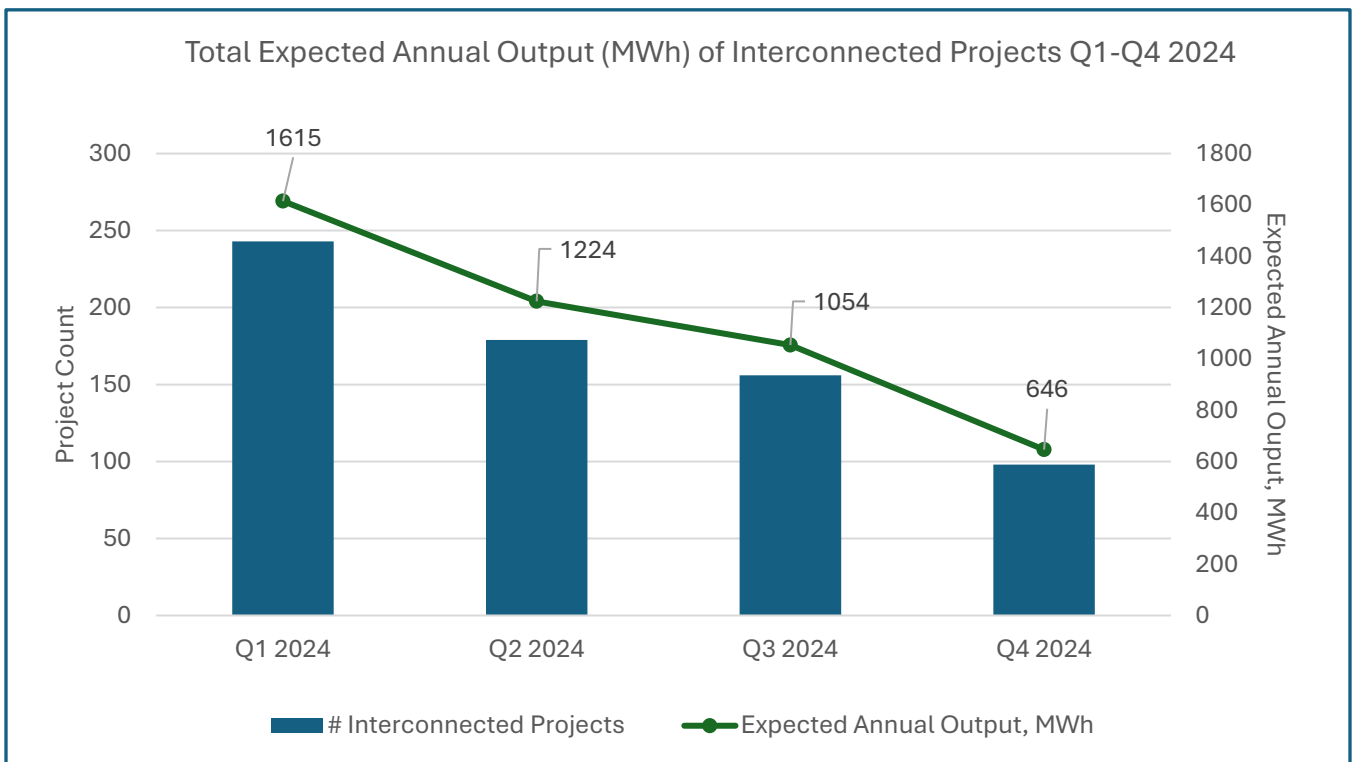


Chart 5. Total expected annual output (MWh) of interconnected projects by quarter in 2024

These declining figures align with the procurement challenges and administrative delays that GRID and its clients experienced in Q3 and Q4. Many clients faced delays in the interconnection of their battery-paired solar PV systems due to issues in acquiring necessary equipment. Additionally, prolonged approval processes under SGIP contributed to significant delays, preventing projects from reaching completion. These barriers resulted in a lower number of interconnected projects by year-end compared to earlier quarters.

Despite these setbacks, GRID continued to successfully complete projects in 2024. The total number of interconnected projects in 2024 was 676, only slightly lower than the 729 interconnected projects in 2023. However, the total capacity interconnected in 2024 was 2.9 MW CEC-AC, reflecting a decrease from the 3 MW CEC-AC interconnected in 2023. Similarly, expected annual energy output in 2024 was 4,539 MWh, slightly below the 4,717 MWh recorded in 2023. These figures suggest that while interconnection numbers remained relatively high, the slowdown in the latter half of 2024 had a notable impact.

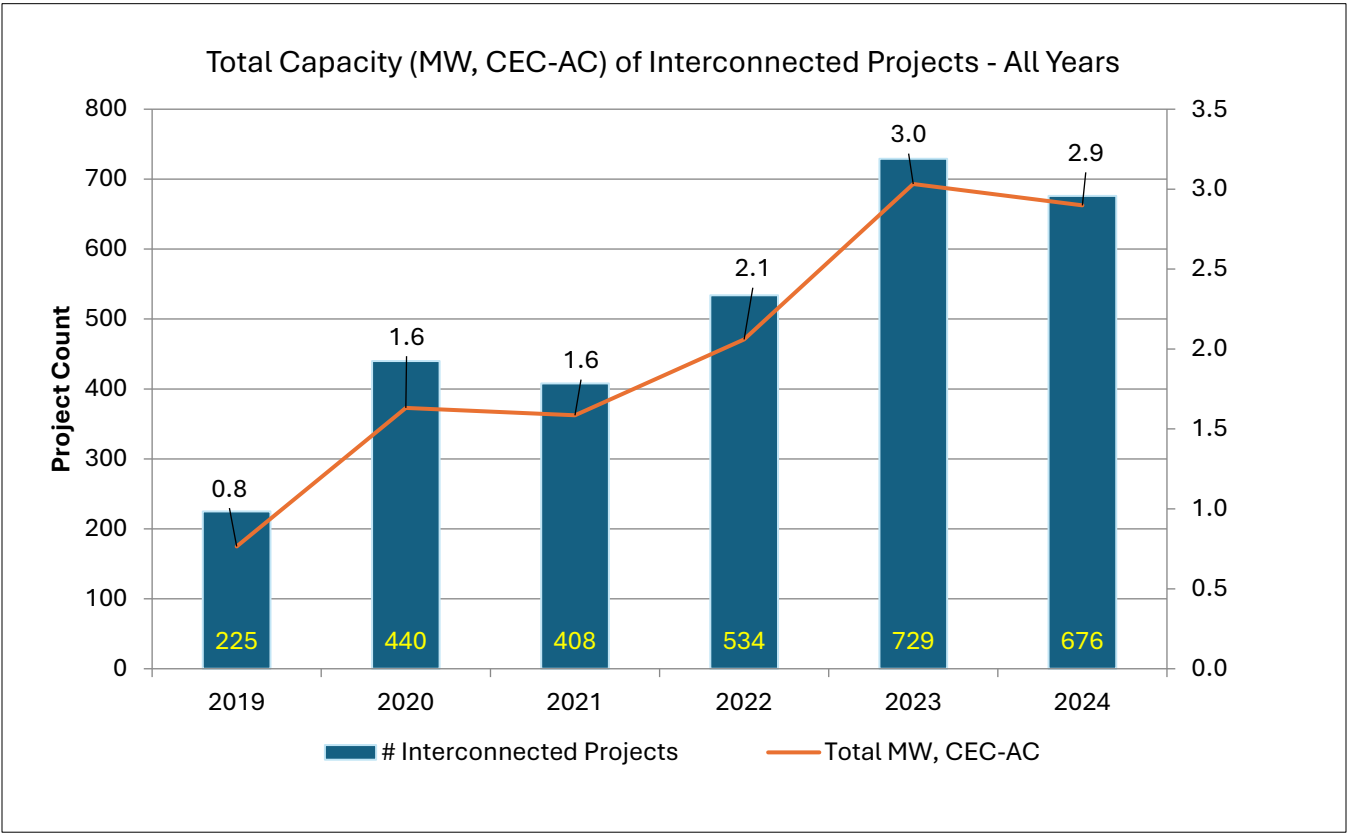


Chart 6. Total Capacity (MW, CEC-AC) of interconnected projects by year of all-time

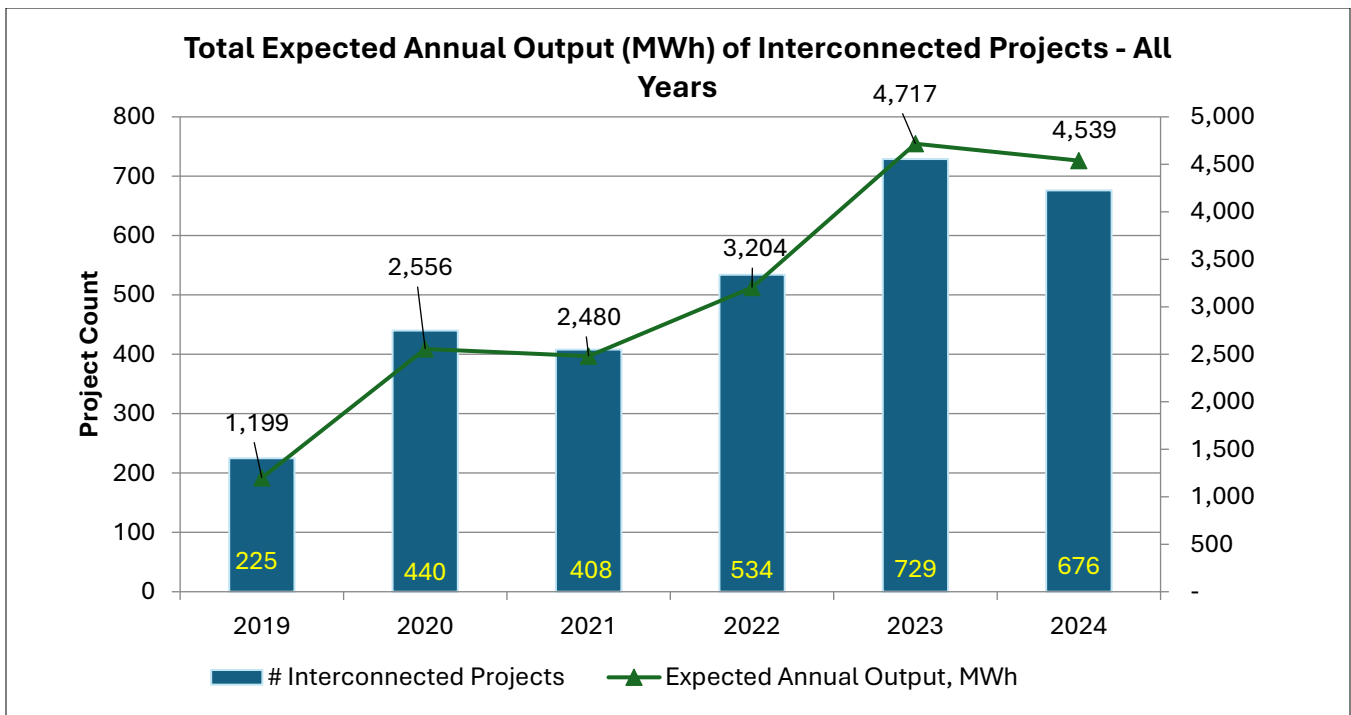


Chart 7. Expected annual output (MWh) of all interconnected projects

Average System Costs

The cost per watt (\$/W CEC-AC) surged in 2024, reaching \$5.85, the highest recorded in recent years. This increase reversed the downward trend seen in previous years (see Table 2 below), likely due to rising material costs, supply chain disruptions, and labor constraints.

Prior to 2024, larger installations (4.5-5 kW CEC-AC) offered the lowest cost per watt at \$4.86. However, the average system size in 2024 was approximately 4.29 kW, below the optimal size range as it relates to cost per watt.

Table 2. Average system cost (\$/W) based on the total number of projects by year

Year Interconnected	Number of Projects	Average Cost per Watt (\$/W, CEC-AC)
2019	225	\$5.22
2020	440	\$5.44
2021	409	\$5.15
2022	534	\$5.36
2023	729	\$5.49
2024	676	\$5.85

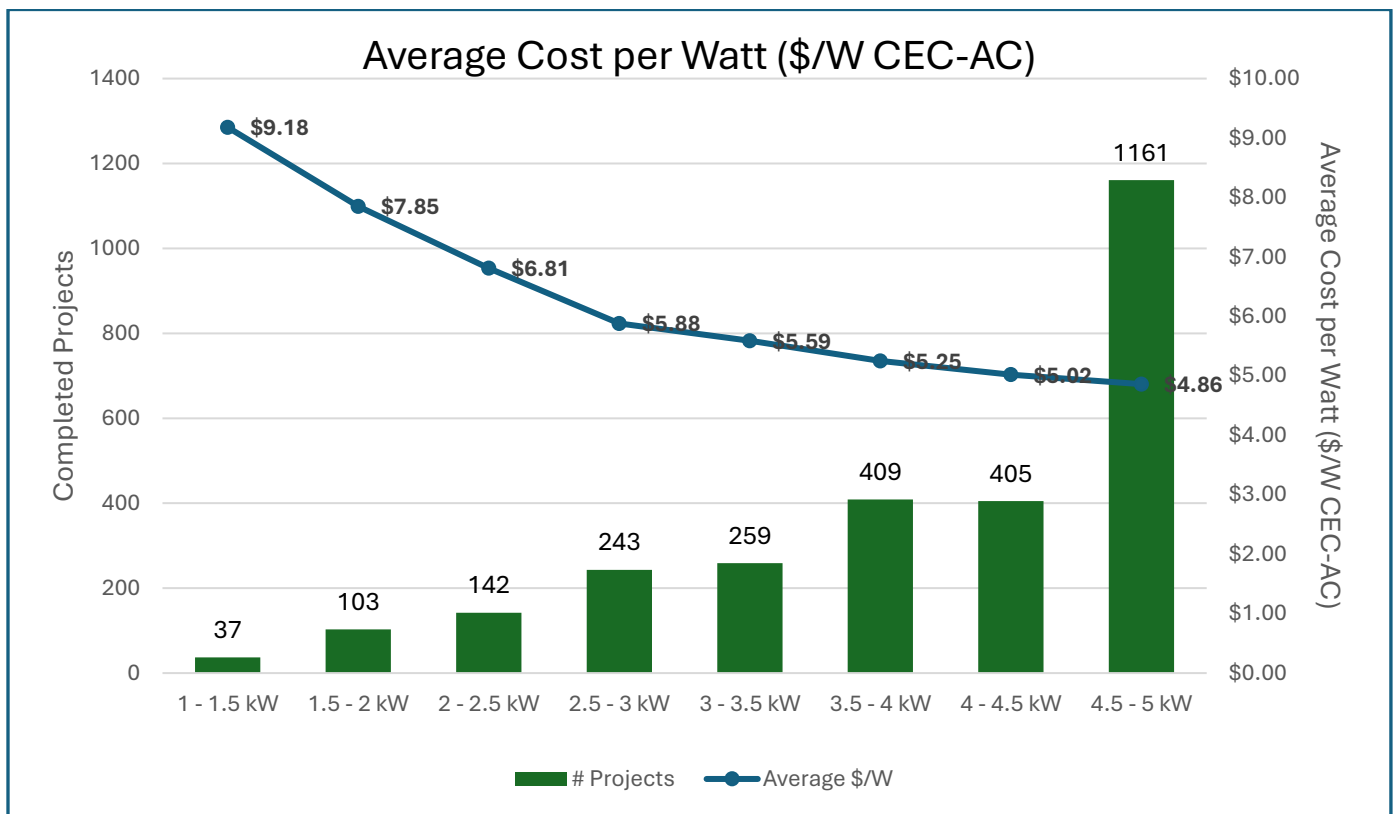


Chart 8. Average cost per watt (\$/W CEC-AC) based on system size

TPO Projects

In 2024, 90.8% of projects were third-party owned (TPO), accounting for 92.9% of total installed capacity. GRID's TPO model prioritizes consumer protection and client benefits, leveraging the federal Investment Tax Credit (ITC) to help finance DAC-SASH projects. This model also provides additional advantages to families, such as a performance guarantee, system monitoring, and warranty coverage for the 20-25 year TPO contract term.

With Resolution E-5020¹¹ (September 2019), the Commission approved GRID's TPO model, Sunrun has been GRID's primary TPO partner since 2017. As shown in Chart 9, nearly 90% of DAC-SASH projects and over 90% of the capacity interconnected to date are third-party owned¹².

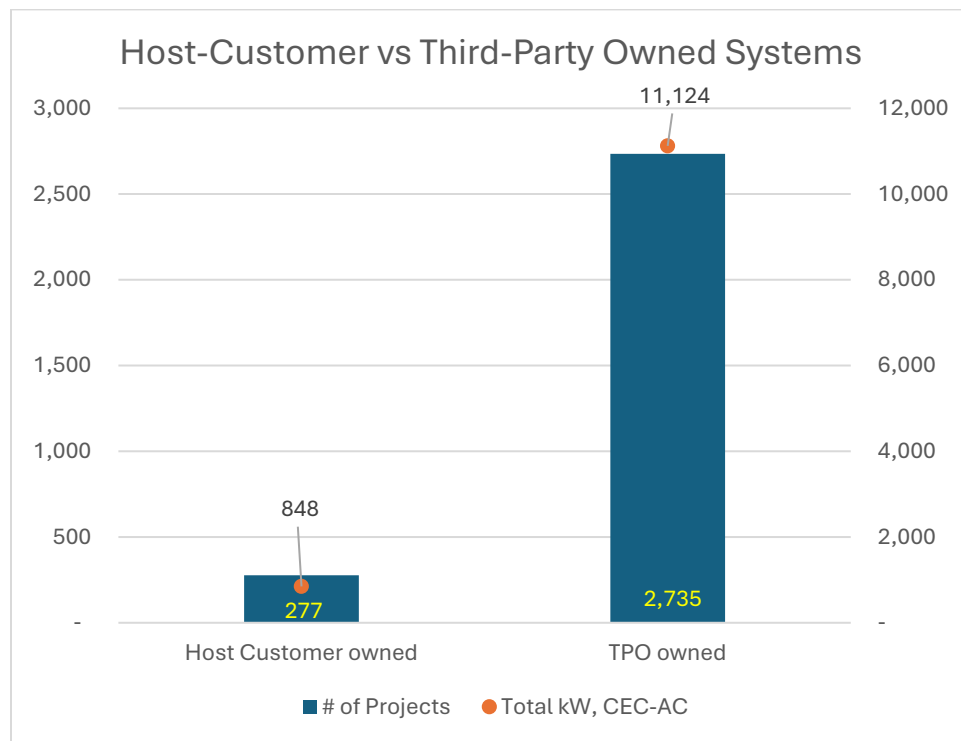


Chart 9. Number of DAC-SASH projects that are host-customer owned or TPO owned (all-time)

Tribal Projects

Table 3. Number of tribal solar PV installations by year.

Install Year	Number of Installations	Total Capacity (kW, CEC-AC)
2019	1	3.8
2020	18	64.1
2021	25	98.4
2022	63	243.8
2023	36	152.2
2024	41	177.9

¹¹ Resolution E-5020: Approving GRID Alternatives Advice Letter 13-E/E-A, Proposed Disadvantaged Communities – Single-family Solar Homes (DAC-SASH) Program Handbook and Program Implementation Plan, pursuant to Decision 18-06-027. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M313/K697/313697139.PDF>

¹² GRID projects that cannot leverage the TPO model are due to small system size, deed or land ownership documentation that does not meet TPO provider requirements (such as projects on tribal lands), and/or a partner/city/client that is unable or unwilling to approve a TPO ownership structure.

Following the approval of AL 16-E in 2021, which expanded DAC-SASH eligibility for tribal communities (California Indian Country), GRID staff significantly increased outreach and implementation efforts within tribal communities. Between 2021 and 2024, GRID installed DAC-SASH tribal solar PV systems that totaled over 672.6 kW across 165 projects

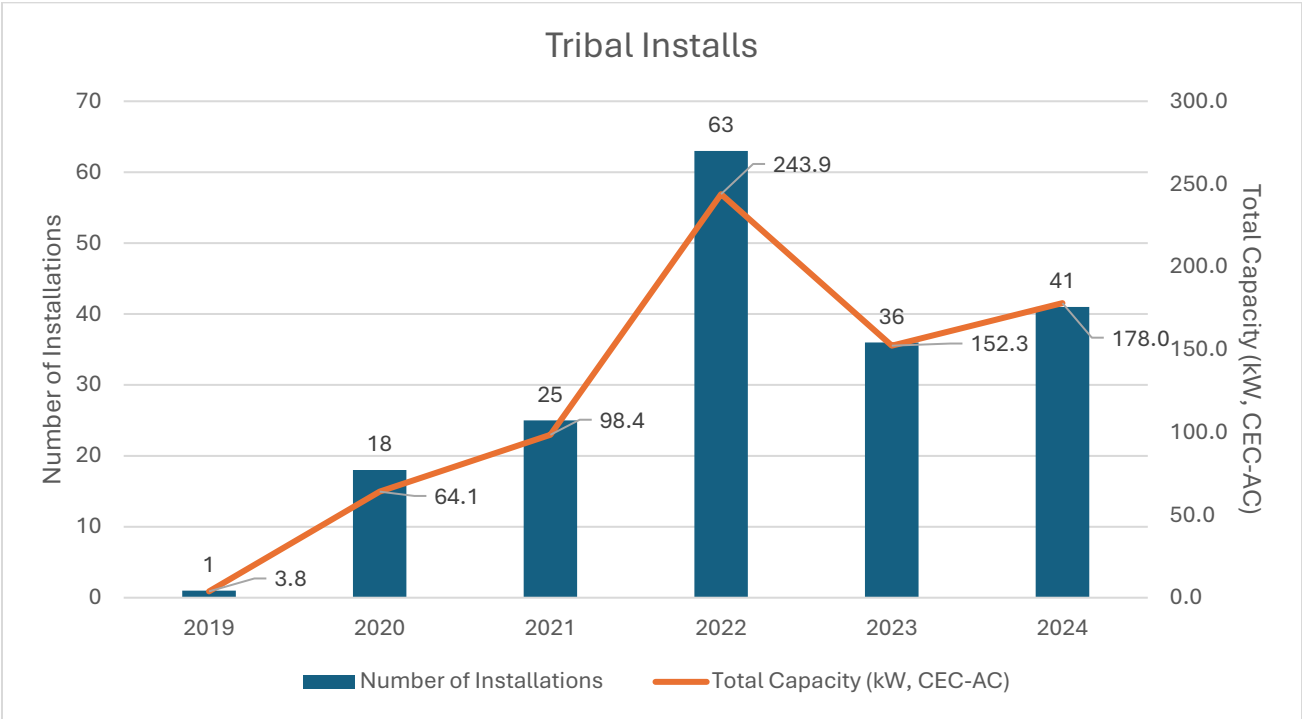


Chart 10. Number of tribal installs by year, includes the sum of total capacity (kW, CEC-AC) for that year.

Looking more closely at 2024, GRID installed 41 DAC-SASH tribal installations totaling nearly 178 kW, accounting for the second-highest annual capacity in the program’s history for tribal communities. The increased number of tribal solar PV installations is in large part due to intentional, community-driven efforts by GRID regional staff. Specialized outreach has been instrumental in reaching tribal households, with targeted strategies designed to reflect the unique cultural, geographic, and administrative contexts of California Indian Country. This outreach is reinforced by continuous relationship-building with tribal governments, agencies, and community leaders—an approach rooted in trust, collaboration, and long-term engagement on tribal lands.

Additionally, GRID has expanded its service offerings to include complementary programs that go beyond solar PV installations. These include pairing solar PV with battery storage, electrification upgrades, and

other energy resilience services, ensuring that tribal clients have access to the various services offered to their communities. Together, these strategies have made DAC-SASH more accessible, relevant, and impactful for tribal communities, contributing to sustained growth in participation.



Figure 1. DAC-SASH funded solar PV array installed on a home in tribal land

2.2 Workforce Development & Job Training

DAC-SASH integrates job training opportunities into every project, creating pathways for individuals from all backgrounds to access well-paying jobs in California's solar industry, and ensuring lasting community impact.

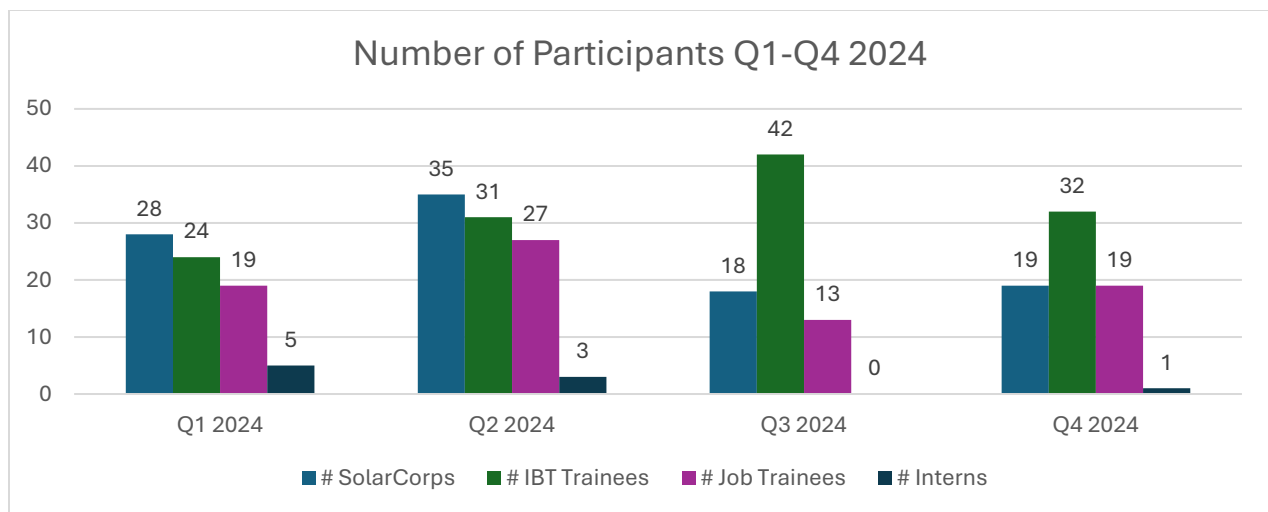


Chart 11. Number of various workforce development or job training participants by quarter for 2024

Twenty percent of all in-house (installed by GRID staff, not subcontracted) solar PV installations¹³ include a job trainee. A job trainee is an individual that is being trained on installation basics. Job trainees may include community volunteers seeking experience, corporate volunteers participating in team-building events, or attendees of community-based events hosted by GRID. A job trainee can also be an individual hired by a subcontractor to participate on any solar PV installations that are funded by DAC-SASH.

Participation by job trainees declined in Q3 and Q4 of 2024 compared to the first half of the year. This drop is largely due to fewer events and corporate-sponsored installation days, which is typical during the colder and rainier months when fewer regional events are scheduled.

In parallel, GRID operates the Installation Basics Training¹⁴ (IBT) program into 34 job training programs across California. IBT participants gain hands-on installation experience under the supervision of senior installation staff and receive instruction in 11 industry-relevant skills. While the IBT program is not directly funded by DAC-SASH, it significantly supports the program's workforce development goals. IBT participants also benefit from job referrals, professional networking, and eligibility for the NABCEP certification—the solar industry's leading credential.

In Q3 and Q4 of 2024, there was a higher number of IBT trainees participating in DAC-SASH funded PV solar installations compared to the previous two quarters. An increase in participation was expected to happen

¹³ A number of installations are subcontracted to GRID-approved contractors (See section Subcontractor Partnership Program below for more information). 100% of subcontracted projects include a job trainee.

¹⁴ IBT is a competency-based certificate program that develops the skills needed for entry-level solar PV installation jobs and related construction pathways. IBT focuses on skills-based assessments, providing trainees with valuable hands-on training and access to potential employment opportunities.

in the later quarters of the year as many IBT programs throughout the regional offices began in the fall, resulting in an increased availability of IBT trainees to participate in installations.

SolarCorps (also known as SolarCorps fellows) and intern participation lowered in Q3 and Q4 2024 when compared to the earlier quarters of the year. A SolarCorps Fellow is a participant in GRID's 11-month paid apprenticeship program, which offers hands-on training, career development, and nonprofit experience with a focus on clean energy access in under-resourced communities. Interns serve shorter terms but gain comparable experience. Participation from both groups declined in Q3 and Q4 2024, which is expected due to the SolarCorps program's September–August cycle and the variable availability of intern positions across regional offices.

While fellows and interns may not always participate in physical installations, they play a critical role in supporting project delivery through administrative and logistical work. Their contributions expand the scope of workforce development by exposing participants to different aspects of DAC-SASH implementation—from project management to community outreach—broadening the range of skills and experience gained through GRID.



Figure 2. Volunteers installing PV at a DAC-SASH funded installation (October 2024)

2.3 Subcontractor Partnership Program

GRID's Subcontractor Partnership Program (SPP) is a proven model for engaging local installers as subcontractors while also providing paid work opportunities for job trainees. Through SPP, GRID partners with vetted contractors to install PV systems, allowing regional offices to strategically outsource portions of the installation process to stay on track with install goals. In many cases, only the installation portion is subcontracted, while GRID staff continue to manage system design and other project aspects. This approach not only helps maintain installation timelines and meet projections but also increases overall efficiency by enabling GRID to leverage internal design capacity while staying on top of install schedules through trusted contractor partnerships.

In Q3-Q4 2024, installation activity being done through the SPP declined compared to earlier in the year, with project volume and total installed capacity lower than Q1-Q2 2024. Across both quarters, SPP projects installed 307.7 kW CEC-AC across 70 projects, showing a slowdown from the higher activity levels in Q1-Q2. Additionally, the average system cost increased to \$27,003.54, continuing the upward trend in cost per AC watt, which reached \$6.19 in 2024, up from \$5.57 in 2023.

In contrast, Q1-Q2 2024 saw higher project volume, with larger total capacity deployed and lower cost per CEC-AC watt. The early months of the year maintained stronger momentum, possibly due to increased subcontractor availability and greater demand before the seasonal slowdown in later quarters. However, despite the drop in Q3-Q4, SPP remained a crucial mechanism for expanding GRID's solar installation capacity, particularly in regions like the Inland Empire, Greater Los Angeles, and Central Valley.

Table 4. Summary of completed SPP projects by year (all-time¹⁵).

Year Installed	Sum of Total Capacity (kw, CEC-AC)	Average System Size (kW, CEC-AC)	Average Cost per Watt (\$/W, CEC-AC)	Average System Cost (\$)	Number of Installations
2020	24.8	3.5	\$3.61	\$12,482.04	7
2021	62.2	3.5	\$3.77	\$12,949.24	18
2022	292.2	4.1	\$4.84	\$19,623.60	72
2023	423.2	4.4	\$5.57	\$23,754.19	97
2024	307.7	4.4	\$6.19	\$27,003.54	70
All-time Data	1110.1	4.0	\$4.80	\$19,162.52	264

¹⁵ There were zero subcontracted projects completed in 2019.

Compared to 2023, 2024 saw a decrease in overall installed capacity and project volume. In 2023, 423.2 kW CEC-AC was installed across 97 projects, whereas in 2024, the number dropped to 307.7 kW CEC-AC across 70 projects (see Table 4). The average system cost continued to rise, reflecting increasing labor, materials, and subcontractor expenses, as well as a decrease in average system size, which contributed to a higher cost per watt

There are logistical and quality challenges associated with managing subcontractors, but mission-aligned partnerships add significant capacity and efficiency, particularly during the busy summer season when GRID's construction staff are often spread thin. While subcontractors handle design and installation, GRID's outreach teams in the Inland Empire, Los Angeles, and North Valley manage all client-facing interactions, ensuring quality service and community engagement.

To uphold installation quality, most SPP projects undergo third-party independent Quality Assurance (QA) inspections. In 2024, GRID worked with third-party inspectors to conduct remote inspections, reducing on-site inspections to save time and program costs. Additionally, each subcontractor is required to hire at least one paid job trainee per DAC-SASH project, reinforcing GRID's workforce development commitments.



Figure 3. PV array installed by a subcontractor (August 2024)

2.4 Utility Referrals

Energy Savings Assistance Program (ESAP) Enrollment

ESAP is designed to provide no-cost weatherization services to eligible low-income households, helping them reduce utility costs through energy-efficient upgrades such as attic insulation, efficient refrigerators, furnaces, weather stripping, and more. However, in Q3-Q4 2024, there were significant challenges in successfully enrolling DAC-SASH clients in the ESAP program, resulting in zero enrollments during this period.

Table 5. Summary of referrals provided to IOUs in 2024.

Utility	Q1-Q2 2024 Referred	Q1-Q2 2024 Enrolled	Q1-Q2 2024 Enrolled %	Q3-Q4 2024 Referred	Q3-Q4 2024 Enrolled	Q3-Q4 2024 Enrolled %
PG&E	288	0	0	327	0	0
SCE	196	0	0	366	0	0
SDG&E	5	0	0	25	0	0
Total	489	0	0	718	0	0

While 718 clients were referred to ESAP across PG&E, SCE, and SDG&E in Q3-Q4 2024, none were successfully enrolled. Referrals are sent to each IOU on a monthly basis. PG&E, which received 327 referred clients, faced difficulties in contacting them, as leads were deemed non-viable after three unsuccessful attempts. Even when clients responded, delays were reported in subcontractors following through with the energy upgrades. SCE received 366 referred clients, but the reasons for non-enrollment remain unclear. SCE noted that the ESAP processing team was engaged in an internal data cleanup, which may have contributed to the lack of progress. SDG&E received only 25 referred clients, and did not provide any specific reasons for the lack of enrollments.

Table 6. Summary of referrals provided to IOUs from 2019-2024.

Utility	Total Referred	Total Enrolled	Total Enrolled %
PG&E	2329	574	20%
SCE	1879	310	14%
SDG&E	153	11	7%
Total	4361	895	17%

Looking at the total enrollment figures, historically, 17% of referred clients have successfully participated in ESAP, with PG&E at 20%, SCE at 14%, and SDG&E at 7%. However, the complete lack of enrollments in the latest reporting period signals a critical issue in program execution. To ensure that low-income households receive the intended benefits of ESAP, improvements are necessary in outreach, client engagement, and processing efficiency across all utilities.

ESAP Leads

In accordance with Decision 20-12-003¹⁶, IOUs are required to share DAC-SASH eligible customer profiles or leads with GRID Alternatives annually, starting in February 2021. However, there has been a significant decline in the number of ESAP leads shared over the past four years. Additionally, past datasets often contained incomplete contact information and duplicate leads, limiting their usefulness for outreach. Finally, the absence of a standardized data format across IOUs has made it challenging for GRID to process and integrate the information into internal tracking systems efficiently.

PG&E indicated that their ESA team designates a lead as “cold” after three unsuccessful outreach attempts, after which no further follow-up is conducted. This policy affected the majority of GRID-referred leads. In response, GRID suggested that PG&E notify GRID when clients are unresponsive so GRID can follow up directly with the customer to confirm the legitimacy of the ESA program and explain that they qualify automatically through DAC-SASH participation.

SCE reported that staff turnover on its ESA team during the Q3-Q4 2024 reporting period may have contributed to referral issues. During this period, it was also discovered that the ESA team had been relying on outdated internal guidance regarding how to process referrals from GRID. The issue has since been identified, and SCE is in the process of updating its procedures.

GRID is still awaiting confirmation from SDG&E regarding how many DAC-SASH clients referred in 2024 were successfully enrolled in ESA. GRID plans to work with SDG&E to refine the referral and follow-up process to ensure timely outreach and enrollment for all qualifying clients.

GRID is committed to strengthening coordination, improving data integrity, and enhancing ESA enrollment outcomes for DAC-SASH participants. To address these ongoing issues, GRID will conduct a comprehensive review of the past four years of lead data with each IOU to confirm that all leads were received and accurately processed. This effort aims to ensure data completeness and consistency before the next dataset

¹⁶ <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M354/K045/354045228.PDF>

is expected in Q2 2025. California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance (FERA) Program Enrollment

After a project is completed and interconnected, GRID submits a monthly list of completed projects to each IOU, indicating whether the client is already enrolled in the CARE or FERA program. If they are not enrolled, GRID identifies them as CARE-eligible or FERA-eligible based on income verification through DAC-SASH participation. This process ensures that eligible clients do not have to go through a separate enrollment process, as the IOUs automatically enroll them in the appropriate discount program.

The CARE program provides low-income customers with a 30-35% discount on their electric bill and a 20% discount on their natural gas bill. For families whose household income slightly exceeds CARE income limits, the FERA program offers an 18% discount on electricity bills.

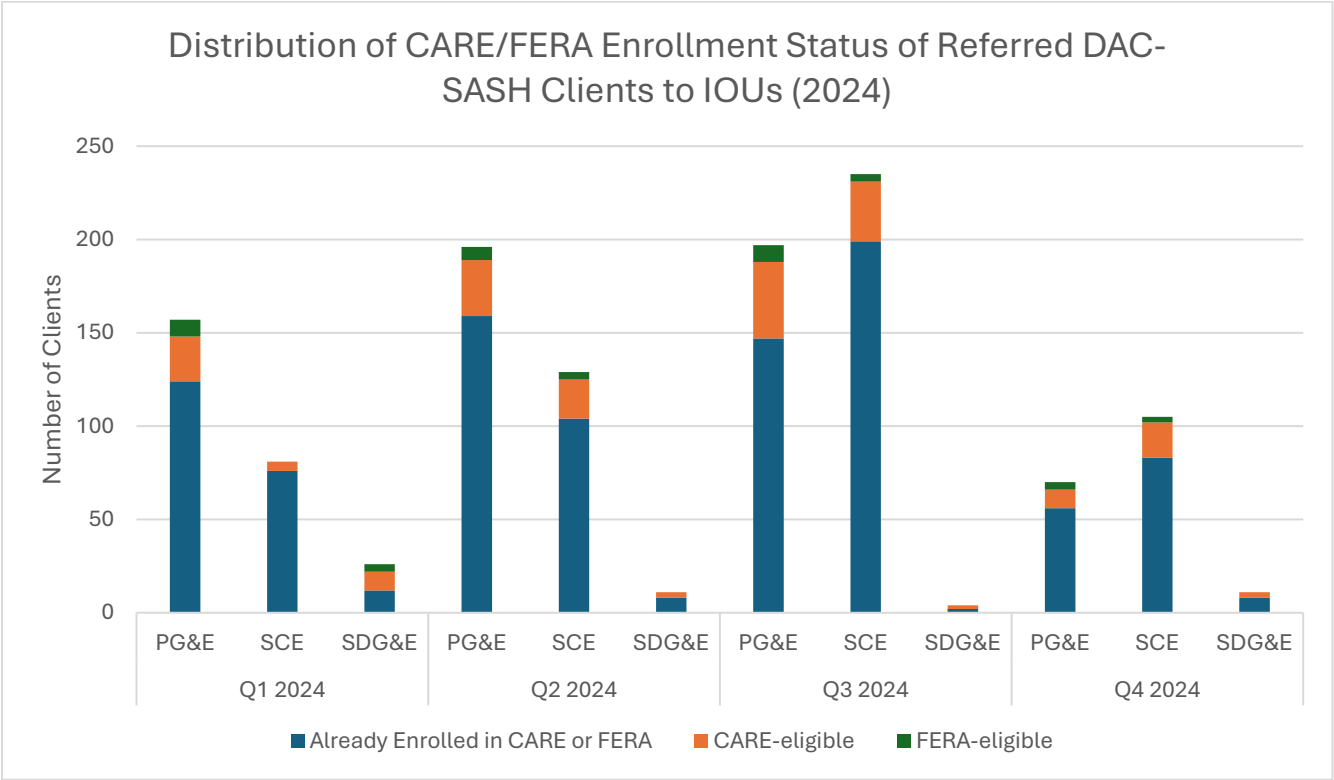


Chart 12. Distribution of CARE/FERA enrollment status of clients with completed DAC-SASH projects (2024)

In Q3 and Q4 of 2024, PG&E received a total of 267 client referrals, 203 of whom were already enrolled in CARE or FERA, meaning 24% still needed to be enrolled. SCE received 15 referrals, with 18% not yet enrolled, and SDG&E received 246 referrals, with 38% not enrolled. Across all three IOUs, a total of 127 eligible clients were newly identified for enrollment during this period.

Compared to data from 2019–2023, when rates of clients not yet enrolled averages around 7% for PG&E, 13% for SCE, and 10% for SDG&E, Q3 and Q4 of 2024 reflects an increase in clients not yet receiving CARE or FERA discounts.

2.5 Complementary Programs

GRID seeks to integrate the DAC-SASH program into the full landscape of CA programs that can benefit disadvantaged communities. These include, but are not limited to, energy efficiency programs, electric bill payment assistance programs, electric vehicle (EV) and electric vehicle supply equipment (EVSE) programs, the SCE Charge Ready Home (CRH) program, and SGIP. In concert, these programs expand access to clean energy, improve solar readiness, enhance energy resilience, and support the transition to electric transportation.

SGIP Integration

SGIP supports battery storage adoption, particularly benefiting disadvantaged communities. In 2019, Decision 19-09-027 expanded SGIP eligibility to DAC-SASH participants under the Equity and Equity Resiliency budget, aiming to enhance access to solar and battery storage solutions. In 2024, GRID intensified outreach efforts to target eligible applicants, particularly in Q1 and Q2, with a focus on the SGIP Equity budget, which provides battery system incentives at \$0.85/Wh. GRID was able to move forward with several projects by reserving funding for them through the SGIP Equity budget.

In March 2024, a new SGIP funding category, the Residential Solar and Storage Equity (RSSE) budget, was announced to be released, offering a higher incentive of \$1.10/Wh for battery storage. In response, GRID shifted its approach to pairing DAC-SASH projects with RSSE funds, allowing participants to receive no-cost PV + battery storage system installations. However, there have been numerous delays in the release of RSSE funds. These delays have disrupted project timelines and led to unmet expectations among participants. In addition, SGIP requires participation in a Demand Response (DR) program. While DR programs are available to clients on bundled utility service, many DAC-SASH clients are served by Community Choice Aggregators that do not offer SGIP-approved DR options as of the Q3-Q4 2024 reporting period. As a result, these clients are often ineligible for storage incentives unless they switch to bundled service, creating uncertainty for both clients and GRID.

Additionally, applicants faced logistical and financial challenges, such as costly roof repairs or other necessary upgrades that prevented installations from proceeding. The increased administrative burden of

correcting documents, re-signing contracts, and navigating SGIP-related delays further strained GRID's capacity for direct outreach and project implementation.

SGIP Battery Pairing and Installations in 2024

While there were record-breaking DAC-SASH applications and approvals in 2024, the number of projects paired with SGIP batteries faced significant delays in installations. GRID successfully approved 345 SGIP-paired applications in Q2, 565 in Q3, and 304 in Q4, but actual installations lagged due to the challenges mentioned above.

- Q2 2024: 345 SGIP-paired applications approved, 0 installed
- Q3 2024: 565 SGIP-paired applications approved, 79 installed
- Q4 2024: 304 SGIP-paired applications approved, 50 installed

In addition to new solar PV and battery installations, GRID also facilitated battery storage add-ons for households with existing PV systems. These installations increased in Q2 and Q3, reflecting GRID's focus on maximizing SGIP participation despite program challenges.

- Q2 2024: 5 installations
- Q3 2024: 9 installations
- Q4 2024: 7 installations

Interconnection Delays and Project Barriers

The number of interconnected projects gradually declined throughout the year, reflecting the challenges observed in the application process and SGIP delays. Many clients faced delays in the interconnection of battery-paired PV systems due to longer approval processes under SGIP and equipment supply chain disruptions. These factors slowed project completion rates, resulting in fewer interconnected projects than initially anticipated.

Conclusion

While GRID successfully generated strong interest and approvals for SGIP battery storage incentives, the delays in funding, procurement issues, and complex program requirements significantly slowed installations. By the end of 2024, 129 battery storage-paired solar PV projects were installed, but this number remains well below the approved applications, underscoring the challenges in integrating SGIP incentives. Moving forward, GRID continues to streamline processes and navigate program complexities to

accelerate project completion rates, ensuring that more DAC-SASH participants can benefit from no-cost solar PV + battery storage solutions.



Figure 4. GRID staff inspecting a battery they just installed (November 2024)

EV Charger and Clean Mobility Programs

GRID administers several low-income EV programs for the California Air Resources Board (CARB), an Air Quality Management District, and the Empower EV Program for PG&E. These initiatives support DAC-SASH participants in accessing clean mobility solutions by providing EV incentives and home chargers alongside solar PV installations.

GRID has seen growing interest in clean mobility solutions, with 36 participants receiving a car charger through GRID's programs over the last several years.

Meanwhile, there was a decline in EV + PV combo projects, with only 2 installations in Q3 and 2 in Q4, compared to 6 in Q1 and 4 in Q2.

- EV charger installations in 2024 totaled 5, similar to 6 in 2023, but significantly lower than 11 in 2021.
- EV + PV combo projects declined to 14 in 2024, compared to 18 in 2023 and 12 in 2022.

- Clients who successfully participated in one of GRID's EV programs and received a Charge Card¹⁷ and Portable EV Charger¹⁸ dropped to zero in 2024, following 1 participant in Q1 2023 and several in previous years.



Figure 6. Clean mobility general flyer (English)



Figure 5. Solar + EV Benefits flyer (Spanish)

SCE CRH Program

The CRH program, administered by SCE, provides crucial solar PV-readiness and EVSE support to qualifying households. The program began accepting applications in March 2024. As part of GRID's broader effort to integrate complementary programs, CRH presents an opportunity to address a major barrier to solar PV adoption: the need for Main Service Panel (MSP) upgrades.

Many low-income households require MSP upgrades to support solar PV, a common challenge that has prevented DAC-SASH projects from moving forward in the past due to lack of funds available to cover the upgrade work. CRH helps cover the MSP upgrade cost, ensuring more qualified homes are able to accommodate solar PV. Additionally, to qualify for CRH funding participants must install a level 2 EV Charger as part of the MSP upgrade project. This requirement ensures that households receiving CRH funding are also

¹⁷ EVGO Charge Card: GRID Alternatives provides a \$1,000 prepaid charge credit, valid for use at public EVGO charging stations.

¹⁸ A lower-speed portable charger that can be used on-the-go with an EV.

equipped for future EV adoption, supporting GRID's broader transportation electrification goals. GRID will continue working with CRH to maximize benefits for DAC-SASH participants and support holistic solar PV + EV adoption.

Since the program launched, GRID's utilization of the CRH program in SCE territory has been closely integrated with DAC-SASH. In Q3 2024, GRID submitted 30 CRH application, 29 of which were for DAC-SASH projects. In Q4 2024, GRID submitted 17 CRH applications, all of which were for DAC-SASH projects. This reflects a strong alignment between the two programs, with DAC-SASH households making up the vast majority of CRH participation to date.

3. Program Budget & Financing

The Commission authorized \$10M per year to be collected for DAC-SASH, beginning on January 1, 2019, and continuing through December 31, 2030. The Decision describes that the state's IOUs will first collect DAC-SASH program funding through available GHG allowance revenues. In the event that there are insufficient funds available from those revenues, the DAC-SASH program will be funded through customer rates via public purpose funds.¹⁹ The \$120M program is funded by PG&E, SCE, and SDG&E according to the percentage allocations listed in Table 4.

Table 7. Budget allocations by utility service territory.

	PG&E	SCE	SDG&E	Total
Budget %	43.7%	46.0%	10.3%	100%
Budget through 2024 (\$ in millions)	\$26.22	\$27.60	\$6.18	\$60.00
Remaining Program Budget 2024-2030 (\$ in millions)	\$26.22	\$27.60	\$6.18	\$60.00
Total Program Budget (\$ in millions)	\$52.44	\$55.20	\$12.36	\$120.00

Table 8. Budget allocation by program function.

	Budget %	Budget through 2024 (\$ in millions)	Expensed Q1-Q4 2024	Expensed prior to 2024	Remaining in 2024 Program Budget
Incentives	85%	\$51,000,000	\$8,731,752	\$26,890,176	\$15,378,072
Administration	10%	\$6,000,000	\$1,000,000	\$5,000,000	(\$0)
Marketing and Outreach	4%	\$2,400,000	\$400,000	\$2,000,000	\$0
Evaluation	1%	\$600,000	Budget resides w/ CPUC	Budget resides w/ CPUC	Budget resides w/ CPUC
Total Program Budget	100%	\$60,000,000.00	\$10,131,752	\$33,890,176.00	\$15,378,072

Table 9. Incentive budget by utility service territory.

	PG&E	SCE	SDG&E	Total
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¹⁹ D. 18-06-027, p. 31.

Budget %	43.7%	46.0%	10.3%	100%
Budget through 2024 (\$ in millions)	\$22,287,000.00	\$23,460,000.00	\$5,253,000.00	\$51,000,000.00
Expensed through Q4 2024 (\$ in millions)	\$20,688,897.00	\$13,862,802.00	\$1,070,229.00	\$35,621,928.00
Remaining Incentives (\$ in millions)	\$1,598,103.00	\$9,597,198.00	\$4,182,771.00	\$15,378,072.00

4. Barriers to Participation

Clients living in low-income households face multiple barriers to accessing solar PV energy, both independently and through statewide and local solar PV programs. These challenges include financial, structural, and outreach-related obstacles. GRID's approach, which is both community-centric and customer-centric, effectively addresses many of these barriers using proven strategies for engaging low-income households. For example, GRID helps families overcome financial barriers by covering the cost of solar PV systems. However, there are limitations, such as financial constraints related to inverter replacements after ten years for non-TPO projects. Additionally, eligibility requirements present challenges to participation in the DAC-SASH program.

4.1 Income Eligibility Limitations for Homeowners

The DAC-SASH program requires participating households to meet the statewide low-income definition based on the CARE/FERA eligibility criteria. However, a single income threshold across the state limits participation in regions with a higher cost of living, such as San Diego. For example, nearly 50% of SDG&E households that qualified for the SASH program²⁰—which uses Area Median Income (AMI) to account for regional cost-of-living differences—would not meet the income requirements for DAC-SASH. Similar trends are observed in the Bay Area and Los Angeles, where many households are disqualified under the CARE/FERA benchmark.

Furthermore, most affordable housing organizations operate within the 80% AMI income threshold. As a result, many new construction homeowners—who must incorporate solar PV systems under state mandates and often have new roofs suitable for long-term solar PV deployment—do not qualify for the program.

4.2 Need for Gap Financing

Gap financing refers to the difference between total project costs and the DAC-SASH incentive on a per-watt basis. While GRID leverages the DAC-SASH TPO model to cover financing gaps for most projects, 10% to 15% of DAC-SASH projects do not qualify for this model. Additionally, some projects incur higher costs due to factors such as electrical service upgrades or the installation of small or ground-mounted systems.

²⁰ SASH uses 80% or less of AMI to meet the low-income threshold, which is set in PU Code 2852(a)(1) and detailed in Chapter 2 (commencing with Section 50050) of Part 1 of Division 31 of the Health and Safety Code.

Securing additional gap financing is essential, as low-income participants are not expected to contribute financially. GRID supplements funding through local grants, foundation support, in-kind donations, and philanthropic contributions. However, these resources are insufficient to meet demand. As a result, long waiting lists exist for homeowners requiring new roofs or other essential upgrades before participating in the program.

4.3 Additional Structural Costs

Many homes eligible for DAC-SASH are older and require significant structural improvements, including roof repairs, property rehabilitation, or updates to outdated electrical systems beyond a standard main service panel upgrade. While GRID has established regional partnerships to provide roof repair and replacement assistance—such as agreements with the cities of San Francisco and Richmond and a philanthropic fund supporting veteran homeowners in Los Angeles—these resources are geographically limited and cannot meet the overwhelming demand.

Homeowners requiring these structural upgrades face substantial barriers to DAC-SASH participation, as existing funding sources are insufficient to cover all necessary improvements.

4.4 Challenges with SGIP

While SGIP presents an opportunity for clients to receive additional benefits, navigating the program has posed significant challenges for both clients and GRID staff. Several factors have contributed to difficulties in guiding clients through the SGIP process:

- **Complex and Evolving Program Rules** – SGIP’s eligibility criteria and program requirements have been unclear and subject to frequent changes. These ongoing modifications, combined with delays in finalizing the new program handbook, have created confusion for both clients and GRID staff.
- **Delays in Funding Release** – The slow release of SGIP RSSE funds has further complicated program implementation, impacting the timing and feasibility of project installations.
- **Administrative Burden** – Due to program ambiguities and rule changes, applications and contracts often require multiple revisions and additional signatures, creating frustration among clients.

These challenges have led to a decline in client trust, with some participants opting out of the program entirely. While GRID staff have made extensive efforts to mitigate dissatisfaction and communicate that SGIP is not administered by GRID, the complications surrounding the program have nonetheless affected

GRID's reputation. The long-standing trust that GRID staff have built over the years has been strained by program inconsistencies, underscoring the need for greater clarity and stability in SGIP's implementation.

5. Conclusion

The DAC-SASH program demonstrated significant progress in Q3-Q4 2024, with record-high application submissions and approvals, underscoring the increasing demand for accessible solar PV energy in disadvantaged communities. While program engagement remained strong in the first half of the year, GRID staff encountered notable obstacles in the latter half, including a decline in interconnected projects, administrative hurdles with SGIP, and financial constraints affecting project completion rates. These challenges highlight the complexities of scaling solar PV adoption while ensuring accessibility for low-income homeowners.

A comparison between Q1-Q2 2024 and Q3-Q4 2024 reveals a stark contrast in application trends. While Q3 marked the peak of the year with 441 applications submitted and 445 approved, Q4 saw a sharp decline, with only 191 submissions and 179 approvals. Similarly, interconnected project numbers dropped significantly from 243 in Q1 to 98 in Q4. While GRID typically sees lower production in the latter half of the year due to seasonal weather changes (more rain, less daylight), this decline can also be attributed to equipment procurement delays, confusion surrounding SGIP rules, and financial barriers such as roof repair costs that prevented some homeowners from moving forward. These setbacks emphasize the need for continued program improvements to streamline interconnection processes, reduce administrative burdens, and enhance financial support for necessary structural upgrades.

Despite these mid-year challenges, overall program performance remains strong compared to previous years. With 1,230 approved applications and 3,005 completed installations, DAC-SASH continues to expand its impact, bringing nearly 12 MW of solar PV energy capacity to disadvantaged communities. Workforce development efforts also showed growth, with increased participation from IBT trainees, though participation of job trainees, Solarcorps, and interns decreased. Additionally, the increasing adoption of battery storage solutions, particularly through pairing solar PV systems with battery storage, signals a positive shift toward integrating solar PV with resilience-focused battery storage technologies.

While obstacles remain, DAC-SASH's 2024 accomplishments demonstrate its ongoing role as a vital initiative in advancing energy equity, reducing energy burdens, and promoting environmental justice for low-income households across California.