MURIEL BOWSER
MAYOR

March 1, 2022

The Honorable Phil Mendelson
Chairman
Council of the District of Columbia
1350 Pennsylvania Avenue NW, Suite 504
Washington, DC 20004

Re: Fiscal Year 2020 Solar for All Annual Report

Dear Chairman Mendelson:

Pursuant to the Renewable Portfolio Standard Expansion Amendment Act of 2016, effective October 8, 2016, (D.C. Law 21-154; 63 DCR 10138) which established the District of Columbia's Solar for All Program (Solar for All), the Department of Energy and Environment (DOEE) is pleased to submit the enclosed Solar for All Annual Report for Fiscal Year (FY) 2020.

This report describes the progress that has been made in FY 2020 toward achieving the benchmarks established by DOEE's Solar for All Implementation Plan, provides the number and capacity of solar energy systems installed under Solar for All, and the number of District residents benefiting from those systems, and presents the expenditure of funds allocated to Solar for All.

Please feel free to contact Deputy Director Taresa Lawrence at (202) 671-3313 to discuss any questions you have regarding the FY 2020 Solar for All Annual Report.

Sincerely,

Muriel Bowser

Department of Energy and Environment

Renewable Portfolio Standard Expansion Amendment Act of 2016 & Solar for All Annual Report

October 1, 2019 - September 30, 2020

Table of Contents

The Honorable Phil Mendelson
Chairman
Council of the District of Columbia
1350 Pennsylvania Avenue NW, Suite 504
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RE: Solar For All Annual Report for Fiscal Year 2020

Dear Chairman Mendelson,

As we look back on 2020, we can be thankful that this trying year has seen the Solar for All program continue to make progress to serve District residents in need of energy assistance with the benefits of clean solar energy. I want to take this opportunity to highlight some of the progress we have made in expanding access to clean solar energy for low- and moderate-income District residents, which has been especially helpful in this time of turmoil and uncertainty for so many. The DC Department of Energy and Environment (DOEE) adjusted operations to continue signing up residents for Solar for All virtually, and worked with the Department of Employment Services (DOES) to provide solar installation training virtually through Solar Works DC. This flexibility allowed DOEE to meet its goals for solar installations and residents served. Additionally, DOEE's continued partnership with the DC Sustainable Energy Utility (DCSEU) continued to be productive, providing the installation of another 7.4 MW of solar for District residents through the Solar for All program.

In Fiscal Year 2020, the Solar for All program provided the benefits of solar energy to over 4,000 households and installed over 10 megawatts (MW) of solar capacity. That progress will continue in Fiscal Year 2021, as we are on track to install approximately 12 additional MW of solar capacity. This amount includes the 2.65 MW Oxon Run solar site, the largest community solar installation in the District, which was completed in December, 2020 on a brownfield site. In spring, 2021 plantings to provide habitat for pollinators will be completed on the Oxon Run site. Altogether, this additional 12 MW of solar capacity will provide roughly 3,400 households with credits on their electric bills. These credits total approximately $500 annually per eligible household.

To realize these accomplishments, DOEE has worked diligently to secure site access for solar projects, develop effective and efficient program processes, educate and conduct outreach with potential program customers and solar installers, and ensure residents successfully receive the benefits of solar energy. DOEE continues to ensure our efforts to address the District's contributions to climate change are equitable across all eight Wards, meeting Mayor Bowser's commitment to provide a fair shot for all District residents regardless of income to enjoy the benefits of solar. I am very proud of the work DOEE has accomplished through Solar for All, and as the program continues to grow, I look forward to serving more District residents with the benefits of clean solar energy and addressing residents' energy burdens.

Sincerely,

Tommy Wells
Director

INTRODUCTION

Pursuant to the Renewable Portfolio Standard Expansion Amendment Act of 2016, the Department of Energy and Environment (DOEE) submits this Solar for All Program Annual Report to the Council of the District of Columbia (Council) covering the period from October 1, 2019 through September 30, 2020.

This report describes the progress that has been made toward achieving the benchmarks established by DOEE's Solar for All Implementation Plan, provides the number and capacity of solar energy systems installed under the Solar for All program, provides the number of low- - and moderate-income households served by the Solar for All program, and presents how the funds allocated to the Solar for All program have been expended.

BACKGROUND

The Renewable Portfolio Standard Expansion Amendment Act of 2016 (the Act), effective October 8, 2016 (D.C. Law 21-154; 63 DCR 10138), established the District of Columbia's Solar for All program. Pursuant to the Act, Solar for All is funded by the Renewable Energy Development Fund (REDF) (D.C. Official Code § 34-1436). The REDF is a special purpose revenue fund authorized to be used for promoting solar energy projects in the District; it is funded through compliance fees paid by electricity suppliers as required by the District's Renewable Energy Portfolio (RPS) standard.

The District’s RPS also create a market for Solar Renewable Energy Credits (SRECs), as purchase of SRECs by electricity suppliers is the alternative to paying the compliance fee required by the RPS. SRECs are earned based on the amount of solar energy generated by a solar facility in the District, and they are regulated by the DC Public Service Commission (PSC).

Funding from the REDF pursuant to the Act is used to expand the District's solar capacity;

increase the amount of solar generated within the District; and provide the benefits of locally-generated solar energy to low- and moderate-income households, small businesses, nonprofits, and seniors. Solar for All's specific target is to provide the benefits of solar energy to 100,000 low- and moderate-income households (defined in the Act as households at or below 80% of Area Median Income) in an amount equivalent to reducing the average electric bill by 50% (based on the residential rate class average electricity bill for 2016) by December 31, 2032. Because there are not currently 100,000 low- and moderate-income households who pay their own electric bill, the Solar for All program has explored means of providing benefits to those households through mechanisms other than credits on an electric bill.

Pursuant to section 3(b) of the Act (D.C. Official Code § 8-1774.16(f)), DOEE is required to submit an annual report on the expenditure of the funds allocated to Solar for All, the progress made toward achieving the benchmarks established in DOEE's Solar for All Implementation Plan (D.C. Official Code § 8-1774.16 (e)(l)(C)), and the number of solar energy systems installed under this program in the previous fiscal year.

The Solar for All Implementation Plan established a phased approach for program implementation, with an initial phase from FY 2017- FY 2019. This initial implementation phase was focused on issuance of several Implementation and Expansion grants to experiment with different methods for deploying solar and providing program benefits to District residents. That phase is now complete and the current Phase from FY 2020 – FY 2022 focuses on implementing the lessons learned from that initial phase and improving the efficiency and effectiveness of program delivery by utilizing the tools and institutions established in the first phase of deployment.

SOLAR FOR ALL PROGRAM

SOLAR FOR ALL INNOVATION AND EXPANSION GRANT PROJECTS

The initial implementation phase of Solar for All focused on researching and developing solutions necessary to complete large-scale projects in subsequent implementation phases. This phase achieved these goals through Solar for All Innovation and Expansion Grants, and through strategic external and interagency partnerships.

DOEE awarded nine Innovation and Expansion Grants, with grantees chosen based on their ability to (1) meet the baseline eligibility criteria, (2) establish clear plans for addressing core barriers, and (3) demonstrate innovation in their grant applications. Grantees represent both nonprofit and for-profit entities, and the grantees are also engaging many District-based businesses as teaming partners. These grantees have all completed construction and interconnection of their projects as of December, 2020, and will now continue to maintain their projects, provide ongoing services to residents, and report annually on their performance to DOEE for the duration of their grant performance period, which is at least 15 years.

Some of the grantees are still working on finalizing delivery of the benefits of the solar systems they have installed and interconnected to residents. Each of the grantees has committed to providing DOEE with annual reports as well as meeting other grant conditions for the duration of the grant performance period. There are claw-back provisions if the grant conditions are not met at any time during the entire grant performance period. The following is a description of each of the projects that were funded by these grants.

- **Enterprise Community Development (formerly Community Preservation and Development Corporation** (CPDC)) installed 1 megawatt (MW) of solar systems on 12 affordable housing properties managed by CPDC located in Wards 5, 6, 7, and 8 of the District. These solar systems benefit approximately 2,200 housing units.[1] The benefits

[1] The benefits provided to the 2,200 housing units in CPDC properties are not equivalent to the statutory level of an

provide new resident services, new building improvements, and other shared amenities for residents. This project has been completed.

- **New Partners Community Solar Corp.** (NPCS) installed and interconnected 316 kilowatts (kW) of solar systems on commercial and multifamily rooftops, resulting in free, 25-year community solar subscriptions for at least 135 low- and moderate-income households. The project resulted in innovative uses of rooftop space on Class-A downtown office buildings, including wall-mounted panels, panels integrated with a green roof, and bi-facial panels that utilize sunlight from above and below. The project also included the District's first solar plus battery storage for resiliency in an affordable housing building. Another project innovation piloted by NPCS is the first solar plus battery storage installation to provide grid services; this installation is located on the roof and playground canopy of Ludlow-Taylor Elementary School in Ward 6. This project has been completed.
- **Open Market ESCO** installed and interconnected 562 kW of solar systems on Winn Companies' Atlantic Terrace property in Ward 8 in December, 2017. The energy produced benefits income-qualified households in the District through no-cost community solar subscriptions. The project has been fully subscribed with 151 households and District residents having received energy bill credits through the Solar for All program for almost a year. This project has been completed.
- **Solar United Neighbors of D.C.** (Community Power Network), implemented a single family co-op model project that began in 2017. In FY 2019, Solar United Neighbors signed contracts with 73 income-qualified homeowners. The first system was installed in early November, 2018 and the final solar installation was completed in September, 2019. The 73 homeowners have owned the solar systems from installation and should have their electricity bills reduced by half. This project has been completed.
- **Urban Energy Advisors** (Urban Ingenuity) constructed solar energy systems on affordable, multifamily buildings throughout the District. Urban Energy Advisors installed 779 kW, and intends to serve up to 246 income-eligible households at 17 sites

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average 50% reduction of each household’s electric bill. The total dollar amount of the benefits provided to the 2,200 housing units is equivalent to providing an average 50% reduction in the electric bill of approximately 309 households.

with credits on their electric bill for 100% of the power produced at the sites. All of the sites have been completed and the residents have been receiving benefits since January, 2019.

- **Groundswell's** Shared Power Project developed 326 kW of solar capacity across the District. The Shared Power Project will allocate 100% of the electricity generated to benefit at least 93 low- and moderate-income households with community solar subscriptions and resident services, at no cost, for a minimum of 20 years. Construction and interconnection have been completed on all four host sites. Groundswell is partnering with Elevate Energy to provide subscriber management and enrollment services for income-eligible households. Subscriber enrollment is underway for solar installations located at St. Luke's Baptist Church in Ward 4 and Dupont Park Seventh Day Adventist Church in Ward 7.
- **Neighborhood Solar Equity, LLC** installed 595 kW of solar energy on five buildings at George Washington University. All five of the building installations have achieved substantial completion and have been interconnected. Electricity generated by the solar installations is being provided to the university, while SREC revenue from the project will benefit approximately 100 low- and moderate-income households for 15 years. This project has been completed.
- **PEER's** project provides 529 kW of solar capacity for the benefit of approximately 100 households at no cost for 15 years. PEER completed installation and interconnection of the total solar capacity for all buildings on three project sites across the District. This project's benefits include new resident services, new energy efficiency building improvements, and other shared amenities for income-qualified residents.
- **Enflection, LLC** deployed rooftop solar systems, solar canopy systems, and ground mounted solar systems on underutilized or difficult-to-develop spaces at five affordable housing properties. The projects installed 773 kW of solar, including 25.8 kW of solar canopy systems and 511 kW of ground mount systems, to benefit approximately 300 low- and moderate-income District households for at least 15 years. The low- and moderate-income beneficiaries receive direct benefits, in the form of utility credits, or indirect benefits, such as reductions in homeowner's association (HOA) fees.

During the initial implementation phase of Solar for All (FY2017 - 2019), the Solar for All Innovation and Expansion grantees and partner organizations built relationships, identified barriers, and proposed solutions to meet project implementation goals. As challenges were identified, DOEE worked closely with grantees and stakeholders to develop solutions wherever possible. The lessons learned through the innovation and expansion phase are being documented and will be shared with stakeholders and the public through a lessons-learned document that will be posted on DOEE's website upon completion. The lessons learned will be applied as the Solar for All program serves a growing number of households in the future.

INTERAGENCY PARTNERSHIPS

SOLAR WORKS DC

DOEE and the Department of Employment Services (DOES) partnered to develop **Solar Works DC,** a program that provides solar installation for low- and moderate-income residents as well as job training for District residents. The program was launched in May 2017 and is administered by DOEE's grantee GRID Alternatives Mid-Atlantic (GRID), which recently received a new grant award to continue administering the program. The job training program operates 12-week cohorts in the fall and spring, which are open to District residents ages 18 and over. Participants in each cohort complete GRID's Installation Basics Training (IBT) program and earn industry-relevant skills certificates by demonstrating competency in solar installations. In addition, the participants attend customer outreach and construction workshops, receive CPR and OSHA 10 certifications, and take the North American Board of Certified Energy Practitioners (NABCEP) PV Associate Credential exam. During the summer, a six-week pro-rated program is offered for District residents ages 18-24 that are enrolled in the DOES Marion Barry Summer Youth Employment Program.

In the first three years of the program, Solar Works DC trained over 250 District residents through 10 cohorts, providing a total of 670 kWs of increased solar capacity that has eased energy burdens for 174 eligible low- and moderate-income households. Approximately one-third of the program’s trainees that successfully met all requirements and graduated are now in jobs in solar and related industries. GRID and its partners, including Titan Solar, New Columbia

Solar, AmeriCorp and others, are committed to recruiting and hiring trainees who have successfully completed the program. DOEE and DOES have begun planning the first Solar Works virtual job fair for spring 2021 and will invite current and former trainees. Unfortunately, in FY2020, live install activities were halted in the spring and summer sessions due to safety and health concerns from COVID-19, but resumed this past fall with the 11th program cohort starting in November. However, virtual training was provided for the spring and summer sessions. Solar Works DC was the only program offered through DOES' Infrastructure Academy to operate year-round in 2020. Case management and support services were even more critical this year since many trainees were managing very difficult personal challenges, ranging from domestic violence and housing issues to technology constraints and illness. The program purchased iPads for each trainee, and managed housing referrals and other services. These elements have now become a standard for the manner in which the program manages its wraparound services. Retention was higher than in previous years due to various barriers being removed as a result of the stay-at-home order (e.g. childcare, transportation, etc.).

The program is currently developing a comprehensive plan for strategic recruitment to target veterans, women, returning citizens, and science, technology, engineering, and mathematics (STEM)-focused high school students. Trainees will also build the program's first mock house this coming year, which will be used for training installations and other exercises. Weatherized equipment was donated by partners for the winter, including new technology, like social-distance wristbands, which alert trainees and staff if they are within a 6-ft range of each other.

DC Housing Authority (DCHA) - In FY 2020, as part of its work under a $5 million grant from the Solar for All program, DCHA completed solar installations at Parkway Overlook, Ft. Lincoln, Benning Terrace, Elvans Road, Hopkins Apartments, Potomac Gardens and LeDroit. The solar installations at Parkway Overlook and Benning Terrace are community renewable energy facilities (CREFs) that deliver benefits by enrolling community solar subscribers. Upon completion of final inspections, DCHA estimates the total capacity funded by the grant to be l.7MW, which will provide benefits to over 5,000 households in the properties served by these

new solar systems.[2] DCHA is now focusing on refining its plans for resident engagement and distribution of the benefits associated with the solar projects.

District of Columbia Public Library (DCPL) – DOEE partnered with DCPL for the procurement and installation of a 125 kW solar system, coupled with an energy storage system, at the newly constructed Southwest Public Library. In FY 2018, DOEE received and reviewed the design plan for the solar and battery storage installation to improve resiliency at the facility. DOEE provided technical assistance for the project, including discussions regarding the selection of critical loads to be backed up by the uninterruptible power system. The project completed construction in FY 2020 and a utility "Authorization to Operate" is expected in early 2021. Ultimately, the solar benefits from this system will be shared with around 30 low- and moderate-income residents of the surrounding community through the Solar for All program.

Department of General Services (DGS) – DGS awarded a contract to GRID Alternatives Mid-Atlantic to design, construct, and maintain a community solar facility at Oxon Run in Ward 8, which was funded by the REDF. Construction and system interconnection was completed in December, 2020. The project provides 2.65 MW of solar capacity, the largest single community solar installation in the District. The community solar facility will produce enough electricity to benefit approximately 780 low- and moderate-income households who live within 2 miles of the solar facility with credits on their electric bills for 100% of the energy produced by the system. Subscribers should start receiving those credits by June 2021 as there has been a delay in system operation due to the need to complete some remedial electric work at the site.

University of the District of Columbia (UDC) – DOEE is partnering with UDC to repair the

[2] The benefits provided to the 5,000 households living in the DCHA properties are not equivalent to the statutory level of an average 50% reduction of each household's electric bill. The total dollar amount of the benefits provided to the 5,000 households is equivalent to providing an average 50% reduction in the electric bill of approximately 300 households. Residents of these DCHA properties do not pay an electric bill (the buildings are master-metered). Instead residents will receive non-monetary benefits. DCHA is still finalizing its benefits deployment plan. The direct benefits to DCHA residents include the installation of new roofs and electrical system upgrades. In future years, after solar system revenues have accrued, benefits could include solar-funded scholarships, science, technology, engineering, and mathematics (STEM) programs, building improvements (solar funded common area, community gardens, etc.), security improvements, job training, and special community events and educational programs.

roof of a campus building in order to install solar systems. DOEE awarded a grant of $885,535 to UDC for roof repair to facilitate solar system installation on August 14, 2019. This project is a 24-month grant, with 2 phases: 1) the first 12 months for completion of the roof repair and 2) the second 12 months for the installation of the solar system. The roof repair is complete, and the solar system installation will be completed in FY 2021. The agencies continue to work together to complete this project to benefit income-eligible UDC students.

DC Sustainable Energy Utility (DCSEU) - DOEE has partnered with DCSEU to serve low- and moderate-income District residents through the Solar For All program by installing solar systems both at single family residences and at other sites that serve as community renewable energy facilities (CREFs) serving multiple residents. DCSEU completed 7.4MW of solar installations in FY 20, which is estimated to provide benefits to 2,119 low- and moderate-income households.

CHALLENGES AND SOLUTIONS

DOEE has identified the following four challenges related to the implementation of Solar for All. These challenges are:

1) Ensuring that the benefits of community solar are accurately and timely allocated to residents' accounts, administered by Pepco. In spring, 2020 Pepco launched a community solar portal to handle the process for allocating the energy from community solar systems to their subscribers through electric bill credits for all of the community solar projects within the Pepco territory. There were issues with how this new portal interacted with the existing Pepco billing system, and this caused a months-long delay in the community solar subscriber credits reaching residents' accounts. DOEE continues to work in partnership with Pepco to address this issue to ensure that all Solar for All subscribers receive their full allocation of benefits. Pepco has processed credits into Solar for All subscriber accounts to make up for the missed credits over the summer. It is important that this issue be addressed expeditiously as prolonged problems could damage the reputation of the Solar for All program and of the concept of community solar as a viable option for District residents to enjoy the benefits of clean solar energy.

Additionally, addressing this issue will benefit commercial community solar providers, which are experiencing similar issues and are an important source of the solar market, particularly for residents of apartment buildings.

2) The DC SREC market continues to be strong, supported by the expanded solar carve-out and lengthened SREC holding period enacted through the Clean Energy DC Omnibus Amendment Act of 2018 ("CEDC Act"). However, the impact of COVID-19 alters the dynamics of the SREC market in two ways. First, retail electricity consumption in the first ten months of calendar year 2020 ("CY2020") fell 4.7% relative to consumption for the same period in CY2019, which reduced the demand for SRECs in CY2020.[3] Second, a slowdown in solar installations due to the public health emergency resulted in less new solar capacity being installed than would have otherwise been expected. Despite the slowdown, the first three quarters of CY2020 yielded 31.45 MW of RPS-eligible solar installations compared to 13.43 MW of solar in CY2019—a year-over-year growth rate increase of 134%.[4] The net impact of lower electricity sales and significant growth in new solar installation means that the market for SRECs will likely continue in oversupply conditions through at least CY2022, after which the market will shift to a stable market with an on-going undersupply for the foreseeable future. Undersupply conditions will support strong and stable SREC prices that will provide a positive incentive to continued solar development well into the future. The current and future SREC market is expected to improve financing terms for Solar for All projects and reduce costs of the program.

3) Site access continues to present a challenge and has caused some delay in solar system installations. Securing access commitments from building owners is critical to meeting the goals of Solar for All and ensuring the benefits continue to accrue to low- and moderate-income households for the life of the solar system. Grantees were required to

[3] U.S. Energy Information Administration, Form 861M "Monthly Electric Power Industry Report". Accessed: https://www.eia.gov/electricity/data/eia861m/

[4] Information from the Public Service Commission of the District of Columbia. Available: https://dcpsc.org/Utility-Information/Electric/RPS.aspx

secure site access for at least a 15 year period. The issue of securing site access will be a focus of the lessons learned report that DOEE is working on to document the Innovation and Expansion Grant phase of Solar for All's implementation. The report will provide recommendations for DOEE to implement as part of near-term program implementation.

4) Customer acquisition has been an ongoing challenge, wherein DOEE and its grantees have grappled with attracting and maintaining a pipeline of eligible solar beneficiaries. To overcome this barrier, DOEE placed greater attention on educating District residents about Solar for All and seeking creative engagement opportunities in partnership with the income-eligible community and trusted organizations that serve them. The engagements explain how solar energy works, address general skepticisms of solar technology and related program offerings, and educate households on the benefits being made available by the deployment of solar and subscriptions for community solar. DOEE has also begun to establish partnerships with other District Government agencies to leverage their existing processes and systems to address administrative burdens and sign up customers more efficiently. One way to make it easier to for residents to sign up for Solar for All is to utilize existing administrative data that the District Government has to speed approval for benefits. DOEE is already utilizing data from District-administered programs such as the Low Income Home Energy Assistance Program (LIHEAP), Clean Rivers Impervious Area Charge (CRIAC), Supplemental Nutrition Assistance Program (SNAP), and Temporary Assistance for Needy Families (TANF) to allow beneficiaries of those programs to avoid the income verification process to qualify for Solar for All. DOEE is exploring whether the Office of Tax and Revenue could conduct income verification for both new and existing beneficiaries. Existing beneficiaries are required to recertify for Solar for All every three years. Using existing administrative data helps beneficiaries avoid having to provide documentation to DOEE that they have already provided in other interactions with the District Government, saving both DOEE and the resident time and costs. Additionally, allowing residents to recertify using data they have already provided should reduce the number of qualified subscribers who drop out of the program for failure to meet administrative requirements as opposed to actual changes in circumstance such as earning too much to continue to

qualify or moving out of the District.

Going forward, DOEE will continue to work with grantees and partners to identify innovative methods to provide benefits to low- and moderate-income households equivalent to a 50% reduction in electricity bills, particularly when directly applying benefits on energy bills is not practical or possible. DOEE is developing criteria to ensure these benefits are fully realized by low- and moderate-income households and are consistent with the goals of Solar for All.

SYSTEMS INSTALLED AND LOW- AND MODERATE-INCOME HOUSEHOLDS SERVED IN FY 2020

In FY 2020, the Solar for All program installed 11.01 MW of new solar capacity that can provide the benefits of solar energy to 3,103 low- and moderate-income District households. Thus far in FY 2021, the Solar for All program has completed an additional 6 MW of solar, benefitting approximately 1,683 District residents. By the end of FY 2021, DOEE expects the Solar for All program to produce an additional 10.5 MW of solar, serving roughly 3,000 low- and moderate-income households.

EXPENDITURE OF FUNDS

As detailed below, the REDF expenditures for FY 2020 totaled $27,728,450.28.

Category	**Expenditures**
Personnel Services	$2,116,123.13
Non-Personnel Services	$25,612,327.15
Total Expenditures	$27,728,450.28

Non-personnel services included completing the Solar for All Innovation and Expansion grants; continued partnerships to deploy solar with sister agencies through MOUs, such as with DCRA, DGS and DCPL; and implementing DCSEU's Solar for All Program through a contract modification. DOEE also awarded a grant to Groundswell to implement subscription management services, and continued the successful Solar Works DC Program in partnership with Grid Alternatives and DOES. DOEE also awarded a grant to Pendrawgn Productions to promote a documentary about the Solar for All program, which received a local Emmy

nomination and has helped DOEE to spread the word and explain Solar for All to residents interested in the program. DOEE has worked with Toucan Printing, a local District CBE, on mailers and other assorted communications materials to help recruit subscribers and market the Solar for All program. Projects that were not completed in FY2020 will continue in FY2021, and funds will be re-obligated in FY2021 to support the construction, installation, and final interconnection of these projects.