This proposal is the work of an independent advisory committee to GSA, and as such, may or may not be consistent with current GSA or other Federal Policy. Mention of any product, service or program herein does not constitute endorsement.

GSA Green Building Advisory Committee
Advice Letter on Renewable Energy Outleasing

July 10, 2020

Kevin Kampschroer
Chief Sustainability Officer and Federal Director,
Office of Federal High-Performance Buildings
U.S. General Services Administration (GSA)

RE: Recommendations for the Adoption of Renewable Energy Outleasing for Federal Buildings

Dear Mr. Kampschroer:

This letter summarizes recommendations of the Green Building Advisory Committee (the Committee), based on the work of its Renewable Energy Outleasing (REO) Task Group. This Task Group was formed based on approval of the following motion of the Committee after its meeting on September 12, 2019:

- The Committee recommends a task group to explore third-party, onsite, renewable power generation, with a focus on solar power and perhaps energy storage, on federal building roofs, parking lots, garages and other parcels which are conducive to such uses. In this P3 model (public-private partnership), the federal government would contribute an underutilized asset, to create emissions-free electricity, potentially enhancing resiliency as well as rental revenues, without taking on the associated capital costs.

Background:

Private and public building sector organizations across the country – including the largest transit agency in the United States, The NY Metropolitan Transportation Authority (MTA) – are demonstrating the value of outleasing their underutilized assets for renewable energy development. Outleasing is the approach used for owned space that is vacant and not needed for current or projected agency purposes, e.g., for non-office spaces like rooftops and parking lots.

GSA currently uses outleasing for such purposes as renting roof space for antenna placement by private telecommunications companies, and the Agency has expressed an interest in outleasing such spaces for renewable energy development. A particularly attractive option is to apply Section 111 of the National Historic Preservation Act to outlease rooftop space on GSA's historic buildings for photovoltaics (PVs). Under this

authority, the proceeds are deposited in the historic property outlease budget activity account in the Federal Buildings Fund, and may be used by GSA to defray the costs of administration, repair and related operating expenses incurred for the outleased property or any other GSA-controlled property listed in the National Register of Historic Places.

Renewable energy outleasing is an increasingly valuable opportunity, as the cost to install PV has dropped by more than 70% over the last decade. While generating new revenue for the government, renewable energy outleasing empowers the private sector to invest in clean energy and advances public-private partnerships, thereby stimulating economic development. It is thus a win-win-win situation for the federal government, the private sector, and the environment.

The vast building portfolio of the federal government includes many suitable roofs, parking lots, and other assets on which solar panels could be placed to generate power, and thereby generate revenue. The Task Group's research has found that such renewable energy leasing is currently rare across the federal government, other than a few examples at agencies with similar enhanced-use leasing authority. Several agencies with these authorities, including DOD, NASA and USPS, have demonstrated the value of the renewables outleasing concept at federal facilities, as shown in the case studies section of the attached report.

More commonly, federal agencies finance renewable installations through a power-purchase agreement – where the capital cost is amortized over the lifetime of installation through a competed cost of power, usually lower than what the utility charges – or through direct appropriations to procure them. In other cases, renewables are procured as an energy conservation measure of energy savings performance contracts (ESPCs) or utility energy service contracts (UESCs).

The Advisory Committee, therefore, is proposing that GSA and other federal agencies with sufficient authorities establish renewable energy outleasing as a promising alternative to advance renewable energy development across the federal portfolio. Requests for information (RFIs) and/or other market research can be used to gather information such as which areas of the country would be most financially attractive for REO and which specific sites would be of most interest. Other criteria to screen for appropriate sites for REO are discussed in the attached report.

Key Policy Recommendations:

- The Committee recommends that GSA work with DOE and its other federal partners to launch a program to evaluate, support, facilitate and implement the use of renewable energy outleasing, including:

    - Conduct a comprehensive review of federal agency outleasing authorities to identify where this approach is feasible.

    - Conduct a comprehensive review of the GSA's owned portfolio to determine which assets are conducive to solar outleasing based on the criteria identified in this letter.

    - Research the costs, benefits and logistics of integrating federal renewable outleases into GSA's outleasing program, learning from the experience of state and local governments, as appropriate.

    - Develop resources to support renewable energy outleasing at GSA, including standardized processes and documentation for identifying underutilized assets and soliciting competitive proposals for renewable outleasing.

    - Test the renewable energy outleasing concept with a pilot project for an asset that is conducive to solar outleasing.

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Green Building Advisory Committee
Renewable Energy Outleasing Task Group (TG)

Policy Recommendations for Federal Adoption of Renewable Energy Outleasing

Contents

Part I: Mission and Objectives

Renewable Energy Outleasing (REO) Task Group Mission Statement

To explore third-party, onsite, renewable power generation on federal building rooftops, parking lots, parking garages, and other parcels through an outleasing mechanism, with a focus on solar power and energy storage. In this P3 model (public-private partnership), the federal government would contribute an underutilized asset to create emissions-free electricity, potentially enhancing resiliency as well as lease revenues, without taking on the associated capital costs.

REO Task Group Objectives

- Research opportunities and challenges:
    - Summarize the business models available to federal agencies to facilitate on-site renewables generation
    - Define the REO business model
    - Research existing federal authorities and policies to determine the extent to which they permit outleasing for renewable energy systems
    - Develop a catalog of federal policies, authorities, and regulations regarding energy generation on federal government buildings.
    - Develop project criteria for REO based on the various factors (e.g. regulatory markets, cost of electricity, renewable energy certificate (REC) prices, etc.)
    - Develop case-study examples of other outleasing projects on federal properties, preferably energy-related
- Develop recommendations:
    - Draft Advice Letter with recommendations on REO for federal buildings
    - Identify potential use case opportunities at GSA and other agencies with adequate authorities

Part II: Findings

The REO TG's core findings center on: (1) the emerging renewables outleasing model; (2) current renewables development approaches most commonly used by federal agencies; (3) the benefits and challenges of REO as an alternative to develop renewable energy at federal facilities.

The Renewables Outleasing Model

On Earth Day, April 22nd, 2019, the New York Metropolitan Transportation Authority (MTA) launched a program to generate clean, emission-free, solar electricity as well as garner a previously untapped source of revenue: the leasing of roofs and suburban parking lots to private parties interested in generating solar power. The initial solar pilot projects validated the outleasing model by generating very solid market response, in the form of rent proposals for previously underutilized spaces. Other state and local government agencies, as well as private companies, are also proceeding with initiatives that employ underutilized assets for solar power generation.

The steady fall in capital costs of solar panel and non-roof penetrating installation technologies, combined with generous incentives for the generation of renewable energy in New York State, has made it increasingly common for industrial and warehouse buildings in the New York metropolitan region to place PV panels on their rooftops. This practice has also spread to buildings in public-sector portfolios, including universities and municipal buildings.

Nationwide, 29 states plus Washington, D.C. have renewable portfolio standards (RPSs) (see map below), while according to the Sierra Club, 160 cities, over 10 counties and 8 states have 100% renewable energy goals. Yet in urban environments especially, space to locate renewable energy installations is scarce: one survey of San Diego, CA found 75% of potential sites for PV to be in parking lots. Altogether, this translates into a growing trend to turn underutilized assets into clean energy generation sites.

As a private sector example, the largest warehouse company in the world, Prologis, uses a solar outleasing model, which the company has used to install over 200 megawatts of PV on its warehouse and distribution buildings in nine different countries. (See article here.) An institutional case study is that of Florida A&M University, which signed a 25-year agreement with Duke Energy Florida to place up to 74.9 MW of renewable power on 600-800 acres of its property. (Article here.)

Among the advantages of rooftop PV, the panels are unobtrusive, generally don't require any special structural accommodation, and require minimal maintenance. Once installed, they can generate renewable electric power for +/- 25 years, offsetting any capital and maintenance cost they incur many times over – thereby generating a surplus for the installer and rent for the landlord. When combined with battery energy storage (where feasible, e.g., where adequate, weight-bearing space is available),

releasing power into the grid at the most opportune time, the surplus can increase significantly based on daily or monthly peak power pricing.

Renewable energy outleasing is an increasingly attractive option as the cost to install PV has dropped by more than 70% over the last decade. While generating new revenue for the government, REO empowers the private sector to make investments in clean energy, and advances public private partnerships, thereby stimulating economic development. It is thus a win-win-win situation for the federal government, the private sector, and the environment.

Current Federal Renewables Development Approaches

Currently, federal agencies use several methods to finance the development of renewable energy at a federal site, as detailed in the DOE Federal Energy Management Program (FEMP) Federal Renewable Energy Resource Guide. The following table summarizes key upsides and downsides of each approach:

Federal Renewable Financing Options

Approaches	Upsides	Downsides
Outleasing	• Revenue source • No/low upfront costs • 3rd party operations & maintenance (O&M)/liability • Market-driven	• Doesn't increase federal renewable energy (RE) use (unless replacement RECs are purchased)
Power Purchase Agreement (PPA)	• No/low upfront costs • 3rd party O&M/liability • Long term source of RE	• Risk of locking in higher rates
Energy Savings Performance Contract (ESPC)	• Coordinated with energy efficiency (EE) strategy • No/low upfront costs • Guaranteed savings • 3rd party O&M/liability • Long term source of RE	• Financing and other expenses associated with the project • Government must take title to the asset
Utility Energy Service Contract (UESC)	• Coordinated with EE strategy • Performance assurance or guaranteed savings • No/low upfront costs • Access to utility programs • 3rd party O&M/liability • Long term source of RE	• For financed UESCs, financing and other costs associated with the project • Government must take title to the asset
Direct Appropriations	• Full control & access to RE • Long term source of RE	• Requires appropriations • Needs long-term O&M • Full liability

A power purchase agreement (PPA) is the most common option involving private ownership. Under a PPA, a private developer purchases, owns, operates and maintains a solar project at a federal site with the agency purchasing the electricity. The developer also provides equipment repair and replacement. Developers can make the PPA price more competitive as they can capture available tax incentives and sell the solar renewable energy credits (SRECs) if deemed beneficial.

The contract term is a challenge for civilian agencies as they have statutorily limited options (DOD, by contrast, has a 30-year authority, per 10 USC 2922a). While GSA has a 10-year purchasing authority (through 40 USC 501, FAR Part 41), other agencies can use this authority only if they obtain a delegation from GSA. Ten years is typically insufficient for PPAs; 20 years is usually required for the developer to recoup its costs and get a reasonable return on investment.

To address the contract term challenge, an agency could use an Energy Savings Performance Contract (ESPC) Energy Sales Agreement (ESA), which is a PPA-type arrangement that uses long-term ESPC authority. More information regarding ESPC ESAs is available from the DOE Federal Energy Management Program (FEMP). The Western Area Power Administration (WAPA) can sign long-term PPAs on behalf of federal agencies in its service territory (see here and here).

Onsite solar power generation can also be implemented at federal sites using appropriations or either an ESPC or UESC with government ownership of the asset upon project completion. Under an ESPC or UESC, solar would typically be bundled with other energy conservation measures as part of a comprehensive project.

Benefits and Challenges of REO at Federal Properties

- **Benefits of REO:**
  - Lease proceeds: turn an unproductive asset into a source of revenue
  - In-kind consideration, where allowed by statute
  - Increased real property utilization
  - Contingency power use
  - O&M and downtime risk borne by private party
  - Roof surface protection
  - Reduction of indoor cooling loads
  - Support for local economic development, clean energy and resiliency goals

- **Challenges to Federal REO:**
  - Little or no incentives for agencies without authority to retain lease proceeds or accept services in-kind
  - Current outleasing authorities that do not prioritize renewable energy over other uses
  - Lack of incentives in federal sustainability goals for renewables development beyond current agency needs and federal generation goals,

as they currently focus on federal use of renewable power rather than third-party use
- Consideration of site location/grid accessibility if power is to be used
- Federal "Reduce the Footprint" policy prioritizing unneeded property disposal. (Only a challenge where there is any dispute over whether an underutilized asset should be disposed of rather than outleased.)

Federal Statutory Authorities for Outleasing

Agency	Statutory source	Summary of Authorities
GSA	54 USC § 306121, 306122 (Natl. Historic Preservation Act)	Broad authority to outlease unused portions of historic properties; allows proceeds to be retained for two years, after which unobligated proceeds are returned to Treasury; use limited to historic properties; proceeds can only be used on property generating the outlease revenue or other properties listed in the National Register of Historic Places.
	Pub. L. 108-447	Broad real estate conveyance authority in which funds are retained in Federal Building Fund and subject to Congressional appropriations
	40 USC § 581(h) (Public Buildings Coop. Use Act)	Allows outlease of pedestrian level and rooftop spaces for commercial, cultural, educational, or recreational activity; funds are retained in Federal Building Fund and subject to Congressional appropriations
	40 USC § 543	Authorizes disposal of surplus property, including by lease
DOD	10 USC § 2667	Can lease non-excess property, with right to revoke, up to 5 years or longer if for national defense or the public interest; competition required unless sole source justified; in-kind consideration accepted; funds go to special account available for repair, alteration, maintenance, construction, etc.
	10 USC § 2668	Easements: authority to grant right-of-way access to military lands to promote public interest; can provide a streamlined outgrant for utilities to construct utility assets
State	22 USC § 300	Broad leasing authority; in kind consideration allowed; proceeds may be used for construction or acquisition
USDA/ Forest Service	16 USC § 580d, note	Authority to lease at fair market value; can accept in-kind consideration; local government has right of first refusal
USPS	39 USC § 401	Broad leasing authority
NASA	42 USC § 2459j	Allows leasing at fair market value; in-kind consideration allowed; can retain and use proceeds in a capital asset fund for facility-related capital expenses
	51 USC § 20145	Allows in-kind payment for renewable energy leases only
DOE	42 USC § 7256(c)	Leasing at facilities to be closed or reconfigured and not presently needed by DOE, as appropriate for national security or public interest purposes
	42 U.S.C. 2201(g)	Leasing authority for property that has been previously been used for Atomic Energy Act purposes, or will be used for future Atomic Energy Act purposes
VA	38 USC § 8162	(Formerly broad enhanced-use leasing authority now limited to homeless veteran housing)

Part III: Recommendations

This section covers: (1) broad policy recommendations, and (2) several implementation strategies that the government should explore, including pilot projects, to test and implement this policy direction.

Policy Recommendations for Adopting Renewable Energy Outleasing

- The Committee recommends that GSA work with DOE and its other federal partners to launch a program to evaluate, support, facilitate and implement the use of renewable energy outleasing, including to:
    - Conduct a comprehensive review of federal agency outleasing authorities to identify where this approach is feasible.
    - Conduct a comprehensive review of the GSA's owned portfolio to determine which assets are conducive to solar outleasing based on the criteria identified in this letter.
    - Research the costs, benefits and logistics of integrating federal renewable outleases into GSA's outleasing program, learning from the experience of state and local governments, as appropriate.
    - Develop resources to support renewable energy outleasing, including standardized processes and documentation for identifying underutilized assets and soliciting competitive proposals for renewable outleasing.
    - Test the renewable energy outleasing concept with a pilot project for an asset or assets conducive to solar outleasing.

Identifying Appropriate GSA Sites for Pilot Projects

GSA has previously contracted the National Renewable Energy Laboratory (NREL) to conduct a study of the behind-the-meter renewable energy potential at 144 GSA sites using the ReOpt analysis tool. (More information about ReOpt is available online at https://reopt.nrel.gov/.) This study did not consider outleasing opportunities, and excluded many GSA buildings. Considering that historic buildings provide the benefit of GSA being able to retain the revenue from outleasing them, per Section 111 of the National Historic Preservation Act, a new analysis of GSA's 762 historic buildings would provide greater insights as to where an REO strategy could be most effectively applied.

The following criteria provide additional factors to identify the best buildings to test such a strategy. Releasing an RFI would invite the market to provide further information on market interests and capabilities to work with the federal government on an REO approach.

Screening Criteria for Renewable Energy Outleasing Projects

- Agency has a long-term authority (EUL or other) that can be used.
- Site can receive payment or in-kind consideration.
- Energy off-taker available
    - Feed-in tariffs (see map below)
    - Interested utility or competitive electricity supplier
    - Liquid wholesale market with high electricity rates
    - Community shared renewables/distributed generation programs (see map below)
- Utility has issued a solar RFP that is seeking customer locations for a solar project
- Valuable solar renewable energy credits (SRECs) and/or other incentives
- Available land or roof
    - Roofs have adequate area in good condition, with sufficient remaining life
    - No roof warranty concerns
- Project champion
- Legal, contracting and management support
- Advantageous electric rates
- State and local renewable energy goals and regulations, including Renewable Portfolio Standards (RPSs) (see map below)

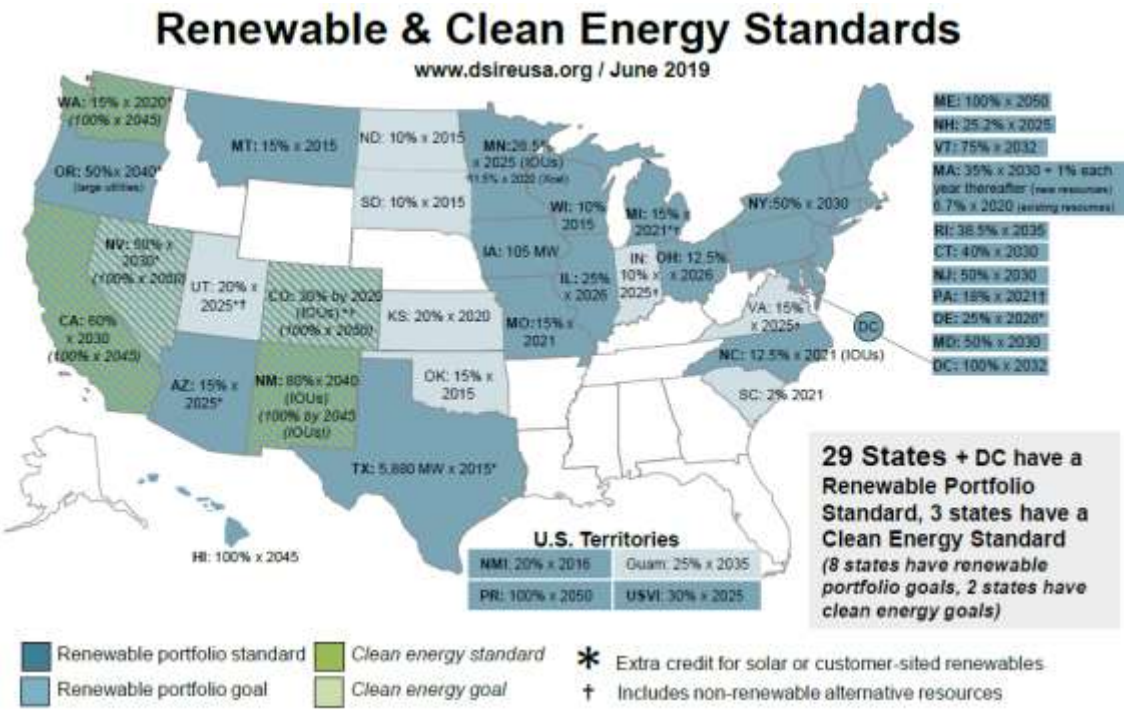
(Note: while it is helpful to apply criteria such as these to identify best candidate buildings for renewable energy outleasing, releasing RFIs and RFPs can spur market actors to identify opportunities that may not otherwise be apparent to the government.)

States with Feed-In Tariffs

(Source: Database of State Incentives for Renewables (DSIRE); note that DSIRE also includes maps showing state net metering and other renewables policies)

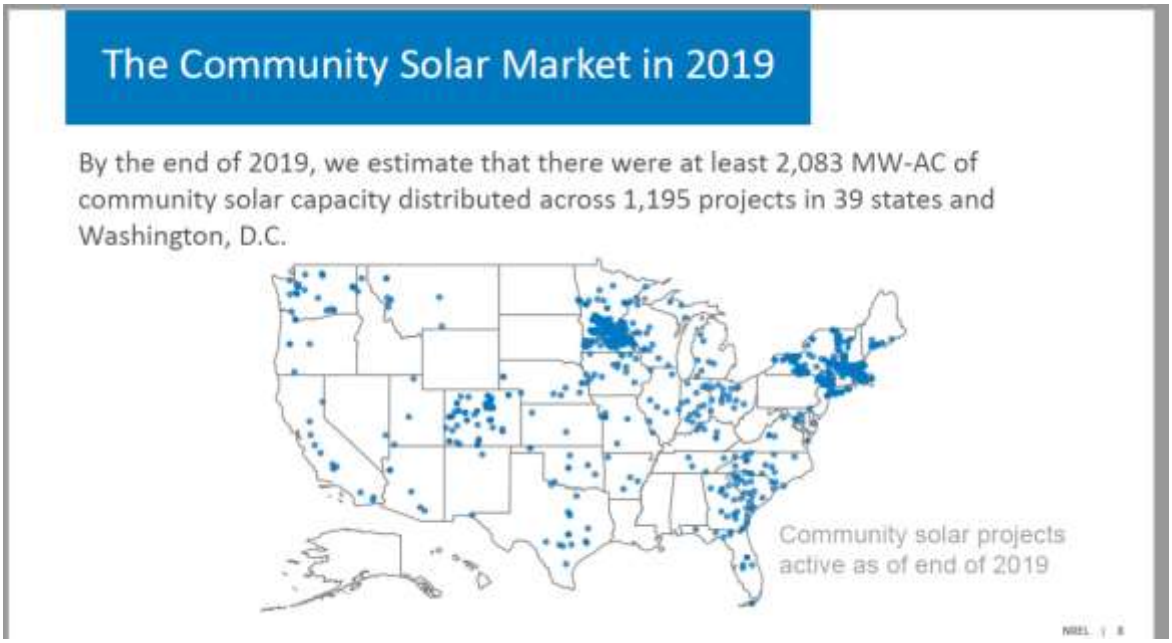
States with Renewable Portfolio Standards

(Source: DSIRE)



Map of Community Solar Programs

(Source: National Renewable Energy Laboratory (NREL))



Part IV: Case Studies

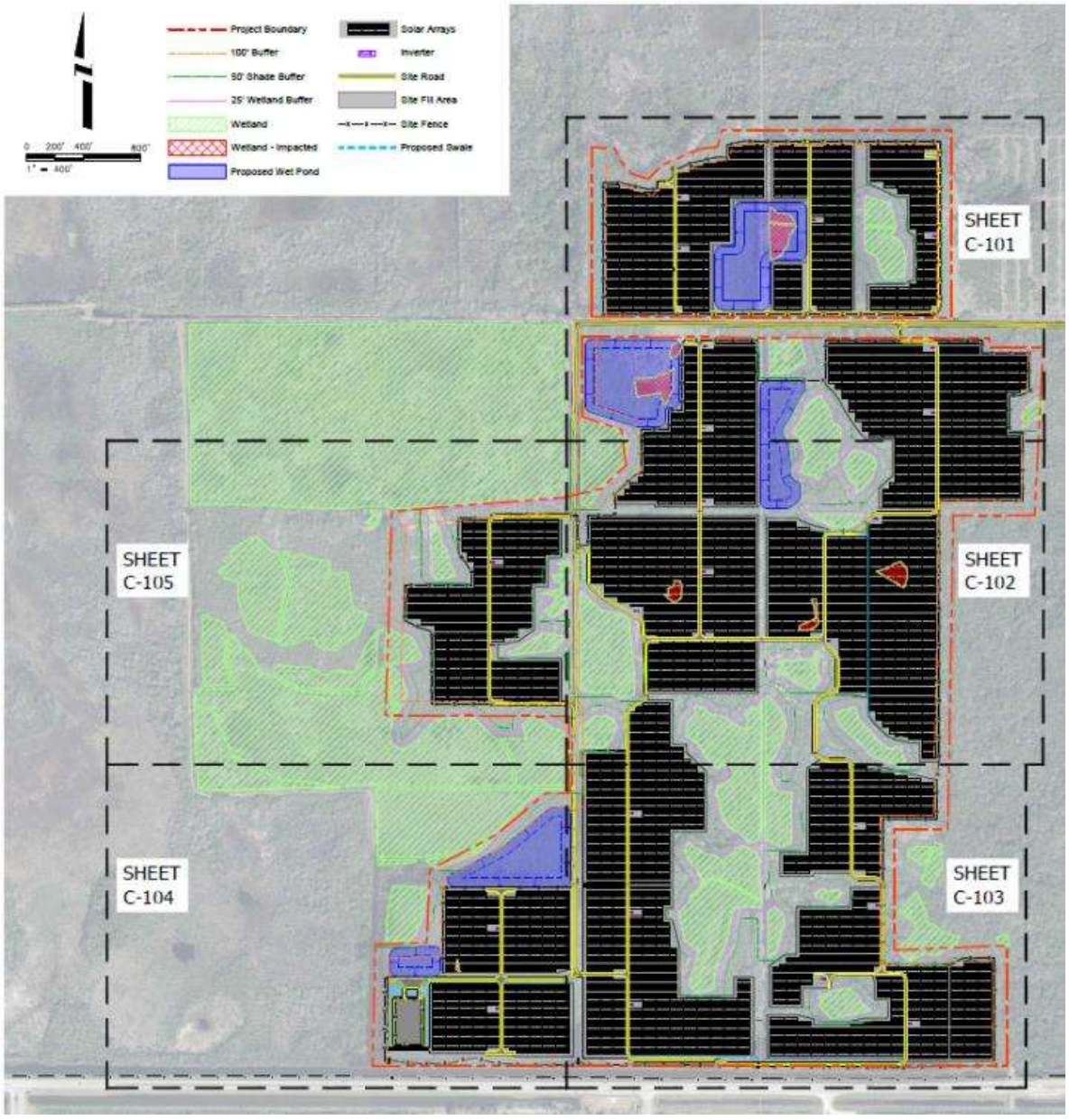
NASA Kennedy Space Center: Space Coast Next Generation Solar Energy Center

NASA Kennedy Space Center (KSC) hosts a Florida Power & Light (FPL) 10 MW PV system, the Space Coast Next Generation Solar Energy Center, using an Enhanced Use Lease (EUL) agreement. When NASA entered into this agreement, NASA had pilot EUL authority codified in 42 USC 2459j. NASA received a 990 KW DC PV system on NASA's side of the utility service meter as in-kind consideration based on the appraised value of the land leased to FPL for the 10 MW PV system. The 990 KW system is NASA-owned and FPL-maintained. The project began with a Memorandum of Understanding (MOU) between NASA KSC and FPL that was signed in December 2007. The MOU identified potential opportunities, defined the NASA/FPL partnership, and assured management support. The EUL agreement was signed in June 2008 and both PV systems were operating by the first quarter of 2010.

10 MW Space Coast Next Generation Solar Energy Center (above) and 990 KW In-Kind System (below) at NASA KSC

NASA Kennedy Space Center: Discovery Solar Energy Center

KSC is hosting an additional FPL 74.5 MW PV system, the Discovery Solar Energy Center, using a new EUL agreement executed under NASA's current EUL authority codified in 51 USC 20145. The total lease is for 32 years, with an option to extend the lease by up to 10 years. FPL pays lease payments to KSC based on the appraised value of the approximately 491 acres of land leased to FPL for the 74.5 MW PV system. NASA and FPL signed the agreement in December 2018, and NASA provided approval for construction in late March 2020. FPL began clearing land early April 2020, and estimated project completion is late December 2020.



74.5 MW Discovery Solar Energy Center: Preliminary Design Drawing

USPS Los Angeles Processing & Distribution Center

In 2017, the U.S. Postal Service (USPS) installed an 11-MW AC system, consisting of nearly 35,000 solar panels, at the Los Angeles, California, Processing and Distribution Center. The panels avoid an estimated 18.8 million pounds of carbon dioxide emissions annually — the equivalent of 2,000 cars — and generate energy equal to providing power to 2,420 typical American homes annually.

This project was completed through the Los Angeles Department of Water and Power (LADWP) Feed-in-Tariff (FiT) program. Through this program, the solar system owner/operator sells the power generated by the system to LADWP through a predetermined pricing structure and the owner/operator, in turn, provides lease payments to USPS. As part of the contract, 1 MW of the system was installed as a Net Energy Metering (NEM) system from which USPS utilizes the energy generated. This project provides significant revenue through lease payments as well as significant energy savings from the 1 MW NEM system.

NASA Michoud Assembly Facility

Currently, a 20 MW hosted solar PV array is being installed at the Michoud Assembly Facility (MAF) in New Orleans, Louisiana by Entergy New Orleans, LLC. (Entergy) using NASA's EUL authority codified in 51 USC 20145. Once the project is completed, NASA will receive full fair market value cash consideration for the leased premises with the option to convert to in-kind consideration in the future. A Notice of Availability seeking partnerships for non-excess underutilized real property at MAF was posted in June 2016. A 29-year full-term lease was executed with Terra-Gen, a California developer, in November 2017. Subsequently Terra-Gen then assigned the lease rights to Entergy consistent with the terms set forth in the agreement in July 2018. Entergy exercised the right to build its array on approximately 100 acres to achieve its 20 MW goal as approved by the New Orleans City Council. Construction began in February 2020 and was approximately 60% complete as of mid-May 2020.

GSA Antenna Outleasing

Outleasing rooftop space on a federally owned building is not a new concept to GSA. The Presidential Memorandum, "Facilitating Access to Federal Property for the Siting of Mobile Services," signed in August 1995, directed that federal properties be made available for use by private telecommunication companies. The passage of the Telecommunications Act of 1996 (47 U.S.C. § 332) further underscored the federal government's role in facilitating the broader deployment of telecommunications across the country. GSA has successfully partnered with telecommunication companies by outleasing rooftop space and land-based antenna sites to support 88 antenna installations nationwide. These installations significantly boost the nationwide telecommunication network while also generating considerable revenue streams for the GSA by using previously underutilized rooftop space. GSA-outleased antenna inventory produces revenues close to $6 million annually, thus accounting for more than 26% of GSA's total outleasing revenue.