ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG) PROGRAM

Key Activities Summary

Blueprint 3A: Solar + Storage – Power Purchase Agreements and Direct Ownership

This Key Activities Summary provides a concise overview of the **Solar + Storage – Power Purchase Agreements and Direct Ownership**. DOE plans to provide technical assistance support to all entities who select this Blueprint, which may include one-on-one attention from DOE or national lab experts, webinars, and peer learning opportunities.

blueprints
Energy Efficiency & Conservation Block Grant Program

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What

A **power purchase agreement** is a frequently-used type of contract that allows a customer – such as a local, state, or tribal government – to access solar electricity without paying the upfront costs of installing the solar project. A third-party contractor will install, finance, own, operate, and maintain the system while the customer often provides the rooftop, parking lot, or land parcel for the solar photovoltaic (PV) array and agrees to pay for electricity produced by the system each month. Like PPAs, solar leases offer a similar arrangement, but have fixed monthly payments instead of the monthly PPA payments that vary as the solar electricity output changes. PPAs aim to offer a price per kWh that is lower than the market rate generation cost, though multiple variables factor into the actual price.

Solar PPAs are also viable when the solar project is not located on a government property, but the government receives the delivered electricity output. These so-called "Off-site" PPAs are popular with large energy users with insufficient space to host large solar arrays[1]. A PPA is typically 15 to 30 years long. Pairing battery storage with a solar system can be a viable option and provides backup power during grid outages and may improve system economics, though note that having a PPA does not change the responsibilities of your local utility to provide reliable electric delivery. Through PPAs, the government also frequently receives the renewable energy certificates (RECs) and other environmental attributes from the solar production. Whether the government receives the RECs is determined by each individual contract. For more information, see EPA's **Credible Claims** and **SPPAs, Renewable Energy Certificates, and Green Power Partnership Eligibility**.

Providing emergency electricity services made possible through solar and storage - also referred to as resilience hubs - supports communities and individuals most vulnerable to grid outages, e.g., seniors and people who use **electricity-dependent medical devices**. Moreover, siting solar and storage in key locations on the **grid can make certain grid upgrades unnecessary**, potentially saving ratepayers money. Finally, RFPs for solar installations can include preferences for local and women- and minority-owned small businesses.

[1]Source:
City Renewables

Why

PPAs are an easy way for governments to "go solar" without needing to use their own upfront capital funds and without the responsibility of managing solar project construction, ownership, and operation. PPAs can be cash flow positive from day one (**Better Buildings Finance Navigator: Power Purchase Agreement**). PPAs may also help ensure that the customer (e.g., the government entity) only pays for power produced; if there is no solar power produced on a given day, then the agency would not incur any costs for that day.

In comparison, self-ownership of solar (or solar + battery storage) projects is an option if the government has funding available for project completion (including access to financing). The main benefits of self-ownership are increased control over decisions on the design, construction, and operation of the project; avoidance of having third party-owned solar arrays on government property; and potentially higher lifetime cost savings.

Whether the government chooses a PPA or to own the solar project itself, the federal renewable electricity incentives in the Inflation Reduction Act (IRA) can still be applied to the project. Prior to passage of the IRA in 2022, the solar project needed to be owned by a tax-paying entity to be eligible for the solar investment tax credit, but the IRA includes a "direct pay" provision that allows state, local, and tribal governments and other organizations that do not pay federal taxes to receive equivalent credits.

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Key Activities

These selected Key Activities are suggestions of important steps a government could take to begin or make progress on their solar and storage PPA or self-ownership journey. EECBG Program awardees that utilize a blueprint will receive expedited application review from DOE. Applicants must execute at least one of the key activities listed under each selected blueprint but should avoid going beyond the recommended activities. Going beyond these key activities may trigger additional reviews of your EECBG Program project to ensure you're meeting National Environmental Policy Act (NEPA), historic preservation, and/or other federal regulations. While each step is important, they should be seen as a guide. Awardees should determine their own priority activities based on their local context.

1. **Site Assessment**
2. **Project Savings Assessment**
3. **Procurement & Legal Support**
4. **Installation of Solar Panels and Battery Storage**

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Site Assessment

Establish a list of potential sites (building roofs, parking lots, underused land parcels) that are unshaded and could be committed to a solar project for 15 to 30 years and estimate the square footage available for solar. Determine which sites might safely host a battery system and have a need for power resilience to serve in-building functions or the community during grid outages. Determine whether a given site is technically-suitable for solar, how much solar capacity it can host in relation to the power consumption of the host or adjacent government facilities, and if there are unique constraints (e.g., from utility interconnection) to putting solar on it. Re-purposing formerly contaminated sites like municipal landfills or brownfields with solar is common and can revitalize overlooked neighborhoods.

» Cost estimate: $2,000-$5,000/site (These costs could be covered by the project developer, depending on the RFP).

Key Resource

For more information on landfill and brownfield solar, see EPA's **RE-Powering America's Land Initiative**.

Project Savings Assessment

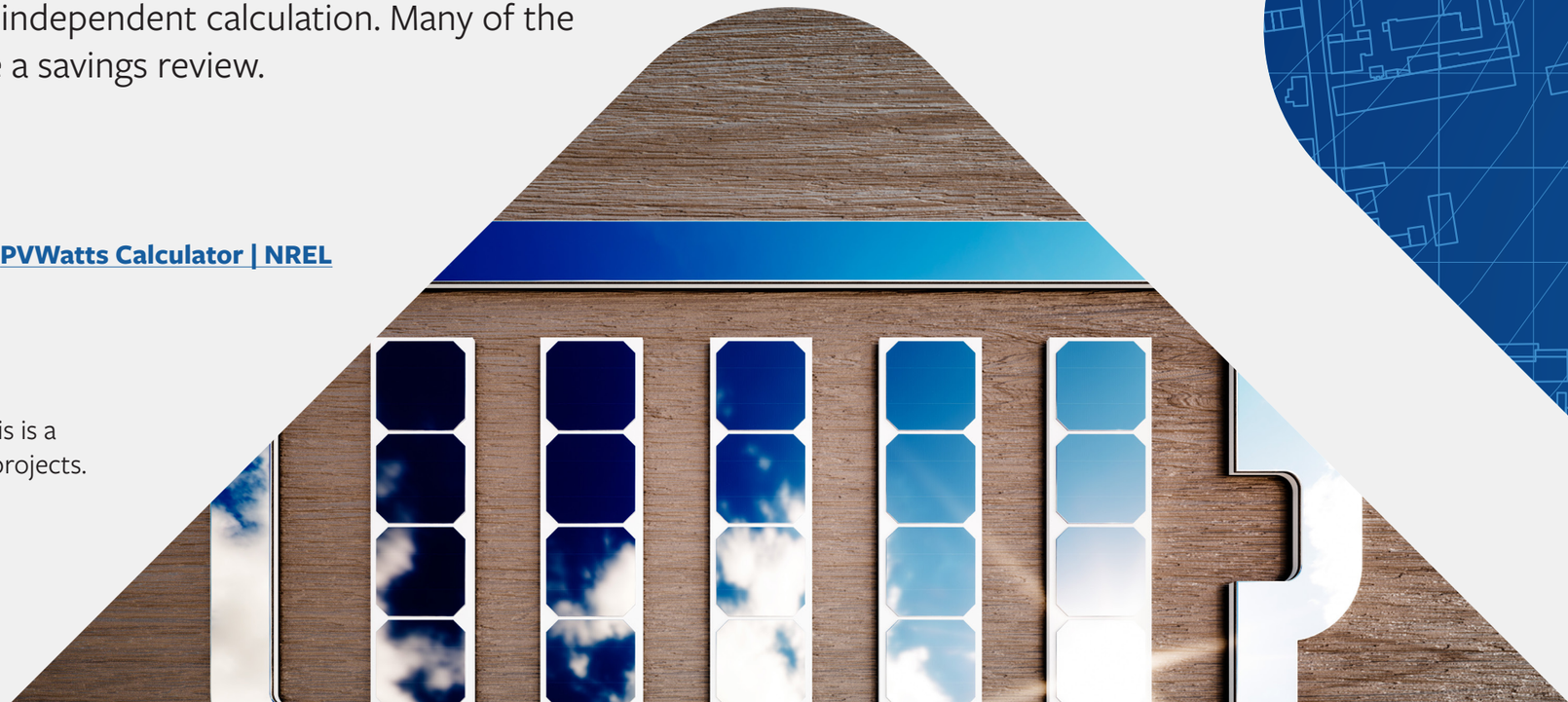
Over their lifetime, solar projects can often save money compared to conventional utility power. The presence and extent of savings depend on project size and installation costs, incentives, basic system design, sunlight resources, and assumptions on conventional power prices. The tools below incorporate those factors to help a government estimate savings. Project developers often provide their own savings estimates, but it is best practice to perform an independent calculation. Many of the firms that provide site assessments can include a savings review.

Key Resource

Calculate savings potential from solar on a specific address here: **PVWatts Calculator | NREL**

Key Resource

REopt Energy Integration & Optimization Home | NREL: This is a techno-economic decision support platform for solar + storage projects.



Procurement & Legal Support

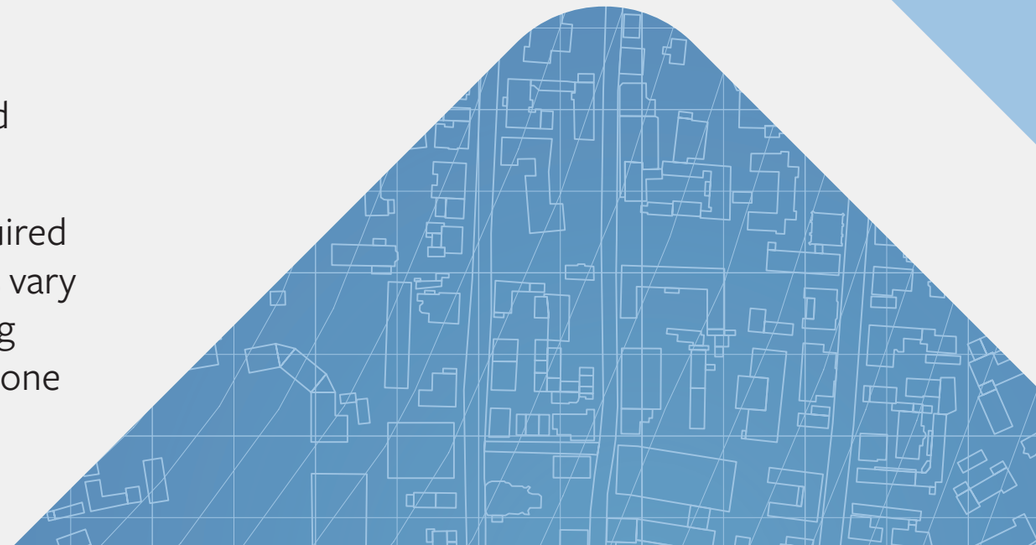
Choose the site(s) for development and the desired contract structure (PPA, lease, or self-ownership). Best practice, and often a government legal requirement, is to use a Request for Proposals (RFP) for any solar or solar + battery storage contract. Example solar RFP templates are included in the Additional Resources section of the blueprint.

Regardless of the project type pursued, specialized legal assistance is important to protect government property, mitigate property and financial risks from the project, and help assure that the environmental, economic, and resilience objectives will be met. The government can run the RFP process entirely itself to avoid external costs or engage an outside organization to assist with bid evaluations or end-to-end procurement management and advice.

» Cost estimate: $25,000-$100,000 (These costs are meant to cover the time required from internal government staff as well as external legal and technical experts. Costs vary with the number of sites involved and transaction complexity; transactions including battery storage typically warrant more procurement and legal support than standalone solar transactions.)

Key Resource

Community Solar projects may receive free technical assistance through the **National Community Solar Partnership Technical Assistance Program**.



NOTE: Further restrictions are listed on page 39 of the E**nergy Efficiency and Conservation Block Grant (EECBG) Program Formula Grant Application Instructions** and in the National Environmental Policy Act (NEPA) and Historical Preservation Considerations section of this Blueprint's webpage.

Installation of Solar Panels and Battery Storage

Limited to solar arrays less than or equal to 60 kW DC and/or 1,000 kWh of battery storage – Grantees may spend their EECBG Program funds on the pre-construction work related to solar (or solar + battery storage) projects. If activities are limited to stakeholder engagement, site assessment and selection, and/or procurement of a developer, legal or technical support, grantees can expect an expedited review. Grantees may seek to spend EECBG Program funds on the construction of the solar arrays themselves or in combination with battery storage systems, but should consider the following:

» **Ground- or parking canopy-mounted projects:** To receive an expedited review of your EEBCG Program grant from DOE, EECBG Program funds cannot be spent on construction or anything that disturbs the ground, with an exception made for ground-mounted or parking canopy-mounted solar projects up to 60kW. Using EECBG Program funds to support construction of larger solar projects (over 60kW) is permitted, however, grantees should expect a longer review and additional forms to complete.

» **Rooftop projects:** Solar can be placed on rooftops, and EECBG Program funds can be used for the construction of such projects so long as they comply with the state's historic preservation programmatic agreement (often abbreviated to "PA") and fall within the limitations described in the NEPA Statements of Work.[2]

[2]Source: Available in the "Key Documents" section of the **EECBG Application Hub**