Case Study: WashREIT's Multifamily Solar PV

BETTER BUILDINGS ALLIANCE

Overview

WashREIT owns and operates real estate assets in the Washington, D.C. region and southeastern U.S., with a portfolio of 24 properties, including nearly 7,300 multifamily apartment units and approximately 300,000 square feet of commercial space. The organization set 2025 sustainability targets of 20% reduction in energy use and greenhouse gas emissions and 60% waste diversion.

As of 2021, WashREIT has 565 KW of on-site solar projects in their pipeline, 15% of which is installed and operating, with the remainder anticipated in mid-2022. These additional renewable energy projects are designed to lower operating expenses while contributing to WashREIT's 20% carbon emissions reduction target. Two Washington, D.C. multifamily properties, The Kenmore and 3801 Connecticut Avenue, are among those with solar projects currently operating.

PROJECT HIGHLIGHTS

- **Properties:** The Kenmore and 3801 Connecticut Avenue, Washington, D.C.
- **Goal:** Achieve strong financial returns through solar renewable energy credit (SREC) revenue and avoided utility costs.
- **Barrier:** Lack of internal expertise/familiarity.
- **Solution:** Working with a trusted consultant to educate and navigate the options.
- **Outcome:** Two successful projects currently operating, and a proven method to scale across the portfolio.
- **Financing:** WashREIT will own the system and monetize SRECs; projecting a ~5-year payback.

Process

- **Conducted a preliminary solar feasibility analysis across the portfolio:** The feasibility study analyzed which sites could or could not host a rooftop installation based on which sites would provide the most attractive returns based on expected project expense, revenue projections, and site constraints.
    - **Barrier:** Site constraints included having to mount the array on 5-foot posts to avoid disruptions to mechanical equipment on the roof. Local codes required the array to follow a 1:1 setback, meaning the distance from the roof edge to the array (horizontally) had to be equal to the distance from the roof to the highest point of the array (vertically). Initially the setback shrunk the size of the array; however, the raised design allowed the panels to be installed over small roof equipment, negating the loss of workable space from the setback.
- **Worked with a consultant to run a competitive RFP:** The consultant issued the RFP to their network of engineering/procurement/construction (EPC) providers, consolidated the responses, and presented the results for WashREIT's evaluation.
- **Evaluated options for system ownership structure:** Using the results of the RFP, WashREIT weighed the benefits of different system ownership arrangements. This included reviewing their priorities for the project and analyzing the impacts with stakeholders in departments including finance, accounting, legal, investments, asset management, and property management.

- **Conditional award to the selected solar developer:** The developer was selected to begin more detailed system design including layout and equipment specifications and to finalize the scope of work.
- **Received executive approval for capital commitment and executed EPC contract:** The final design was confirmed, the contract structure satisfied all stakeholders, and the project's financial metrics for both expense and returns were on track.
- **Project design and construction:** Completed structural and electrical reviews, had drawings approved by Department of Consumer and Regulatory Affairs (DCRA), got interconnection approval from Pepco (the local utility), received permits, and began work on construction.

Keys to Success

- Assessing Risks

As this is a new type of project for WashREIT with unfamiliar risks, finding a trusted consultant to help educate the team and provide guidance was critical. The solar projects present two new risks:

1. ***What impact does the installation have on the property itself?***
    a. As the first solar installation of its kind at a WashREIT property, they had to consider structural loads on the roof, roof penetrations and existing roof warranty, O&M for the installation itself, and impacts on other O&M activity at the building.
2. ***What risks are posed by future SREC market volatility, projections for future solar supply and demand, and future regulatory changes?***
    a. The project's financial return rests on the SREC revenue generated and the electricity utility expenses avoided.

- Stakeholders
    - Asset Management for project feasibility and investment return considerations.
    - Finance and Accounting for project ownership decisions and revenue treatment considerations.
    - Investments for future property disposition considerations.
    - Executive team for capital expense approval.
    - Third-party Property Management for site-specific operational impacts.

Financing

WashREIT will own the system with plans to monetize the SRECS, being mindful to evaluate options to appropriately balance risk and return. The team projects an estimated 5-year payback.

Next Steps

With the proven success of these two properties, WashREIT is considering options for its next batch of projects.

This case study is part of a series from Better Buildings focused on PV Valuation.
Published January 2022 | DOE/EE-2558