PV Valuation: How Solar PV Adds Value to your Assets

February 1, 2022
11:00 am – 12:00 pm EDT
Hannah Debelius
U.S Department of Energy
Rooftop solar is increasingly deployed as a renewable energy strategy, and practitioners in the field are just learning how it may positively affect asset value.

Discover solutions from building owners and managers on how they made the business case for PV and found increased asset value during appraisal or at the time of sale.

Published Case Studies

- The Tower Companies' Commercial Office Solar PV
- Link Logistics Industrial Solar PV
- WashREIT Multifamily Solar PV

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Today’s Presenters

Brenna Walraven  
Corporate Sustainability Strategies

Sam Stockdale  
Link Logistics

Katie Rothenberg  
The Tower Companies
Brenna Walraven
President and CEO
Corporate Sustainability Strategies
Better Buildings Webinar

Photovoltaic (PV) Valuation: How Solar PV Adds Value to your Assets

Brenna Walraven
President, Corporate Sustainability Strategies, Inc.
February 1, 2022
Real Estate Investment Life Cycle – All Property Types

- The Value Chain
- Where is Value Added?

New developments and acquisitions
Design and construction
Leasing and stabilization
Management and operations
Dispositions
Value Add Concepts

1) Lease of roof
2) Renewable Energy *at or below* tariff
3) Community Solar

Net Operating Income (NOI)

\[ \text{NOI} = \text{all revenue from the property} - \text{all reasonably necessary operating expenses} \]

Asset Value

\[ \text{Asset Value} = \text{present worth of future benefits arising from the ownership of the property or sometimes the sales price} \]
Why do Investors Increasingly Care about ESG?

How a focus on ESG, Resiliency & Solar can Impact Value

Accretive Value Drivers

- Increased Occupancy
- Increased Tenant/Resident Retention
- Shorter Lease-up and Down Time
- Lower Operating Expenses
- More Desirable Spaces (light, air)
- Potential for Rent Premiums
- Higher NOI’s
- Value Creation

Defensive Value Protectors

Decreased...

- Regulatory Compliance Risk
- Functional Obsolescence Risk
- Climate Risk: Flood/Wind/Fire/Drought
- Insurance Premium Risk
- Carbon + Resource Expense Risk
- Reputational Risk
- Resilience Risk: Recovery/Business Interruption Losses
- Down Cycle Valuation Risk
# Climate Risk & Role for Solar

<table>
<thead>
<tr>
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</thead>
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<td>• Reduced occupier demand for properties</td>
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**Transition Risks**

- Climate change vulnerability
- Regulatory and policy changes
- Technology and innovation advancements
- Financial market instability
- Consumer behavior shifts
- Geopolitical and societal factors
## Climate Risk & Role for Solar

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PG&E plans power outages starting Wednesday; they could affect Palo Alto too

Quarter-million people across dozens of Bay Area cities at risk of losing electricity; agencies urge people to plan ahead

The highlighted communities in this map provided by PG&E face power shutoffs as part of the utility company’s efforts to ensure its electrical equipment doesn’t spark a wildfire. Image courtesy PG&E.
Rooftop Community Solar Case Studies

- Long Term Roof Lease (20-25 years)
- No Capital Outlay
- Scalable
- Deliver Utility Bill Savings to Local Businesses and Low- and Moderate-Income Households
- Solar Rent Capped at Same Rate as Building
Business Case for Solar

- Core function of real estate owners & operators is to add value
  - Leasing “found space”
  - Roof(s), parking lots, excess land

- Ways to “add value” while also “reducing risk”

- Investing in key infrastructure
  - Can reduce reliance on grid energy – reducing risk
  - Can be an energy price hedge making property operating costs lower, less volatile, more competitive
  - Can improve image and market perception
  - Can improve resiliency and reliability
Katie Rothenberg
Vice President of Sustainability
The Tower Companies
How Solar PV Adds Value to our Portfolio

Katie Rothenberg
Vice President, Sustainability
The Tower Companies
Company Overview

Family Owned, Privately Held
Locally Focused
Develop/Own/Manage
6MSF Office/Residential/Retail

“We envision a world where buildings inspire and enrich the lives of their occupants...and help sustain the environment.”
Green Building Leadership

Lead by Example
• Develop and manage high performance buildings
• Be a voice on environmental stewardship & health
• Share sustainable & innovative practices
Our Solar Program
By the Numbers

<table>
<thead>
<tr>
<th>Property</th>
<th>Install Date</th>
<th>Size (kW)</th>
<th># Panels</th>
<th>Space Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1909 K St</td>
<td>2014</td>
<td>35</td>
<td>130</td>
<td>Office</td>
</tr>
<tr>
<td>The Pearl</td>
<td>2017</td>
<td>3.4</td>
<td>12</td>
<td>Residential</td>
</tr>
<tr>
<td>Blair House</td>
<td>2019</td>
<td>122</td>
<td>269</td>
<td>Residential</td>
</tr>
<tr>
<td>Blair Office</td>
<td>2020</td>
<td>17.3</td>
<td>54</td>
<td>Office</td>
</tr>
<tr>
<td>Tower I</td>
<td>2021</td>
<td>572</td>
<td>1,318</td>
<td>Office</td>
</tr>
<tr>
<td>Blair East</td>
<td>Q2 2022</td>
<td>153</td>
<td>477</td>
<td>Residential</td>
</tr>
<tr>
<td>Blair Plaza</td>
<td>Q2 2022</td>
<td>122</td>
<td>380</td>
<td>Residential</td>
</tr>
<tr>
<td>Washington Square</td>
<td>Q1 2022</td>
<td>522.34</td>
<td>1,274</td>
<td>Office</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.55 MW</td>
<td>3,914</td>
<td></td>
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Ownership Model

• Detailed analysis with preliminary design
  • Tax, accounting, legal, engineering, leasing, property mgmt
  • Lease structure & electricity costs

• Direct purchase advantageous

• Short and long term incentives
  • Federal Investment Tax Credit
  • Accelerated depreciation
  • Maryland Energy Administration (MEA) rebate
  • Solar Renewable Energy Credit (SREC) sales

• Net Metering
Value-Add to the Building

• Annual electricity savings ↑ NOI
• Lower $/sf operating costs
  • Good for attracting tenants
  • Office lease structure
• Residential savings direct to owner
• Translate your savings into a story
Resident Value Alignment
Sam Stockdale
Vice President, Head of Environment and Sustainability
Link Logistics
PV Valuation: How Solar PV Adds Value to Your Assets
Fast Facts

- In 2021...
- 147 buildings added to development pipeline
- 92mm square feet of space leased
- 1,300 new customers moved in
- Hired 350 colleagues
- Provided 8mm meals
OUR COMMITMENTS

300 MW By 2025

Solar Program Opportunity
- Preferred transaction method: roof operating lease
  - In lieu of offtake (PPA) or equity investment
  - Requires 15-20 year roof lease
  - No capital required & reduced accounting complexity
  - Maximize project capacity
- Priority Markets: CA, IL, MD, NJ, NY, & PA
  - Driven by available utility ‘community solar’ program incentives
  - Based on Roof Replacement Capital Plan
  - Regulated by local municipalities and awarded via auction or bid process
- Partner with Experienced Rooftop Solar Developers
  - Onyx, SRE, & Altus
- Execution Risks – Installation Contingent Upon Award
  - Program Capacity Limitations and Application Strength
  - Changes to Federal and State Incentive Programs

Primary Markets (2020-2023)
- CA
- NJ
- NY
- MD
- PA
- IL
- VA

Secondary Markets (2022-2025)
- NC
- OR
- CO
- WA
- SC
- MA
- CT
- MN

State | Eligible Solar Properties | Total Capacity (MW) | MW Awarded (MW) | MW In Progress (LOI, Lease, App Phase)
--- | --- | --- | --- | ---
Total | 255 | 271 | 15.8 | 255.2
CA | 31 | 17.7 | 4.8 | 17.7
NJ | 91 | 68.4 | - | 68.4
NY | 11 | 7.0 | - | 7.0
MD | 30 | 26.7 | 11 | 15.7
PA | 21 | 43.9 | - | 43.9
IL | 65 | 97.7 | - | 97.7
VA | 5 | 9.8 | - | 9.8 (Future Prospect)
Probability Assessment of Market-Specific Factors

Execution Progress
- 15.8MW of solar installation in MD and CA (LADWP) scheduled to be completed by 2022 with rent commencement in 2021
- Average project execution span of 10 to 15 months depending on state
- Awaiting program announcements for IL and PA
- Few projects require tenant approval

Revenue Targets
- $15mm target by 2025
- Uncertainty over the revenue in 2022 to 2024 simulated based on the probabilities of project selection by state
- Highest variance in revenue expected in 2023 & 2024

Assumptions
- Minimum and maximum probabilities of Selection of Solar Projects by State
  - Maryland - Minimum: 90% & Maximum: 95%
  - New Jersey - Minimum: 50% & Maximum: 75%
  - Illinois - Minimum: 50% & Maximum: 75%
  - New York : Minimum: 90% & Maximum: 95%
  - Pennsylvania - Minimum: 50% & Maximum: 75%
  - California - Minimum: 50% & Maximum: 75%
- Assumed delay of 1 or 2.5 program years when a project is not selected in 2022 or 2023
- Projected timelines based on current in-progress projects
Q & A

Submit Questions
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2021-2022 Better Buildings WEBINAR SERIES

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MAY 17-19 2022

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- Speaker-chosen content
- Accessible now
Additional Questions?

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Opportunity

The United States and the world face a profound climate crisis.

Many organizations have set goals – what we need now is **action and pathways**.

DOE is challenging organizations to set ambitious, portfolio-wide, and near-term operational carbon emissions reduction goals and to demonstrate how leaders are measurably taking steps to address climate change.

The Better Climate Challenge builds on over a decade of experience working with leaders at an organizational level.

The government platform that provides transparency, accountability, technical assistance and collaboration to identify decarbonization pathways and provide recognition for leadership across the US economy.
Challenge to organizations across US economy

Portfolio-wide reduction in GHG emissions of at least 50% in 10 years

- Reduction includes Scope 1 & 2 emissions
- No offsets
- Baseline up to 5-years back from join date
- Encouraged to establish an absolute target, but intensity-based targets will be accepted
- Pursue an energy efficiency target that will contribute towards the 50% emissions reduction. This target is intended to encourage prioritizing energy efficiency when pursuing a decarbonization plan.
Core program components – transparency, accountability, and technical assistance

Transparency & Accountability
- Annual energy and emissions data reporting for 10-year commitment
- Breakdown of emissions reductions by energy efficiency, renewable energy, and renewable energy certificates

Technical Assistance
- Data driven solutions to address barriers and overcome hurdles, that can be deployed at scale to the market
- Identify technology gaps that can inform R&D
- Across EE, VTO, RE

Collaborating to Demonstrate Pathways
- Partners commit to work with DOE and showcase their barriers and solutions
- Regularly connect with DOE to provide updates and discuss progress
- Actively participate in a working group with peers and technical experts to discuss barriers, exchange best practices, and identify solutions
Better Climate Challenge – 44 partners to date
Next Steps and How and When Can My Organization Join?

Next steps:

Soft launch/announcement by DOE Secretary at COP26

Formal launch slated for early 2022.

Partners highlighted/convening at Better Buildings Summit, May 17-19, Washington DC

How to Join:

Current Better Buildings and Better Plants partners can email their program contact(s) or maria.vargas@ee.doe.gov.

More information:

betterbuildingssolutioncenter.energy.gov/better-climate-challenge