

NATIONAL HOUSING TRUST



MULTIFAMILY PARTNER

Implementation Model: Solar Financing Model

ORGANIZATION TYPE

Affordable housing

BARRIER

Financing solar energy in affordable multifamily housing

SOLUTION

The creation of a separate business entity, NHT Renewable, to own, operate, and manage solar installations

OUTCOME

NHT leveraged this approach to install 10 photovoltaic systems generating 300,000 kw/year, and 6 solar thermal systems generating 10,000 therms/year, across 5 properties in Washington, D.C.

Overview

High energy costs in multifamily housing make it difficult to sustain affordable rental housing for low-income families. Utility costs are the largest variable operating expense for affordable multifamily buildings. Reducing operating expenses in multifamily buildings helps maintain affordability, frees up capital that can be used to address maintenance repair needs and/or make other necessary improvements.

In order to combat the impact of volatile energy prices and harness more environmentally-friendly energy sources, NHT/Enterprise Preservation Corporation installed solar systems on its multifamily affordable housing properties and working with other multifamily housing owners to do the same. The initiative established to own and operate the systems is called NHT Renewable. The first major NHT Renewable project was completed in Fall 2014—the installation of 14 solar systems across 13 buildings in Washington, D.C.

The National Housing Trust/Enterprise Preservation Corporation is an affiliate of the National Housing Trust, a non-profit engaged in preserving affordable housing. The Trust approaches its work through public policy advocacy, real estate development, and lending. NHT/Enterprise purchases and renovates affordable rental properties at risk of losing their subsidy and keeping them affordable for the long term. The organization maintains a portfolio of almost 3,000 units of affordable housing, the

majority of which are the most marginalized residents in our communities. The properties are located primarily along the East Coast and Chicago.

NHT/Enterprise's Playbook



Policies

NHT/Enterprise follows these guidelines to implement its solar projects:

1. Before even considering solar, staff must ensure that property roofs can structurally support solar systems for a minimum of 10 years before replacement or major repair.
2. When considering solar, the first determination is whether it is more prudent to lease or own a solar system.
3. Managing the design, financing, and maintenance of solar projects requires dedicated staff.

As with any investment, there are risks to developing and owning solar systems. NHT/Enterprise weighs project benefits against the risks.

Process

NHT/Enterprise created a unique approach to developing solar to fit the needs of affordable multifamily housing owners. The approach, which they call NHT Renewable, entails developing multiple solar projects across a property owner's portfolio at one time, while at the same time maintaining ownership of the systems at the corporate-level. NHT/Enterprise advocates for housing owners with available capacity and desire to maintain ownership of the solar systems on the roofs of their properties and receive the benefits. The NHT Renewable approach offers several benefits, including:

- Installing solar systems across multiple properties at one time,
- Opportunity for non-profits to take advantage of the Federal Solar Investment Tax Credit
- Receive reduced pricing on system development due to economies of scale,
- Eliminate costly third-party intermediaries, and
- Earn appropriate economic rewards commensurate to the level of work and risk.

The initial NHT Renewable project combines a unique set of funding sources, including:

- Equity sourced from NHT/Enterprise Preservation Corporation and a John D. and Catherine T. MacArthur Foundation Award for Creative and Effective Institutions (MACEI)
- A loan from Enterprise Community Loan Fund, as part of Bank of America's Energy Efficiency Finance Program.
- A grant from the District of Columbia Sustainable Energy Utilities (DCSEU)
- A fixed rate agreement with the properties to maintain energy prices at current levels for 10 years, shielding the properties from the risk and volatility of the energy market.

As the system owner, NHT Renewable is responsible for their ongoing maintenance. NHT Renewable secured Operations and Maintenance Contract for all the systems, which consists of two inspections per year and ongoing warranty work. The thermal equipment is warranted for 10 years and the photovoltaic equipment is warranted for 20 years.

Both NHT/Enterprise and the properties benefit from the NHT Renewable approach. Nevertheless, it has its risks. Below are the challenges NHT/Enterprise faced in developing NHT Renewable:

1. Varying roof conditions and ages can make projects infeasible. Roofs must be reviewed for structural issues and leaks. Often, roofs need work to prepare for solar, which adds cost to projects and by assessing roof condition in advance, NHT can do this.
2. Up-front capital is needed to make projects work
3. If systems are poorly designed or installed, they can fall short of their projected output. NHT ensures solar is installed according to this guideline in order to optimize performance.
4. NHT/Enterprise takes on the responsibility of operating and maintaining solar systems.



Outreach

In order for the NHT/Enterprise properties to provide space on their roofs for the solar systems, outside counsel determined that approval is required from the property investors and lenders. As such, NHT/Enterprise reached out to over 20 investors and lenders for approval to put solar on the 5 properties included in their first project.



Tools and Resources

Through the development of the project, NHT/Enterprise created a suite of documents and templates to map out the relationships between the solar investors and the participating properties.

Below is an overview of templates and legal documents NHT/Enterprise has drafted to assure that both the properties and NHT/Enterprise were protected:

NHT Renewable Solar Templates

1. Partnership Agreements
2. Documentation checklists
3. Project development timeline
4. Energy Services Agreement
5. Lender and Investor Consents
6. Board Resolutions
7. Installation Agreement
8. Operating and Maintenance Agreement
9. Required utility company consents/agreements
10. Roofing report templates (Structural and leak protection)



Outcomes

Through the creation of NHT Renewable, the following outcomes have been achieved:

- NHT/Enterprise Properties Impacted: 5
- Solar Thermal Systems Installed: 6, generating 10,000 therms/year total
- Solar Photovoltaic Systems Installed: 10 generating 300,000 kw/year total

The project was installed in Q3 2014 for a total cost of \$1.25 million.

1. NHT Renewable provides significant benefit to NHT/Enterprise and its nonprofit partners. More specifically, installing solar energy Reduces carbon emissions and combat climate change
2. Meets NHT's Better Buildings Challenge Goals
3. Saves the properties money on energy
4. Fixes power costs for the properties
5. Requires no upfront costs for the properties
6. Provides new income streams for NHT/Enterprise, which will, in turn, be used to support the National Housing Trust's policy work.
7. Invests in the local economy and create green jobs



Measuring Success

The success of this work has been measured in several ways:

- Benefits are shared by all parties – property, managing partners, residents, and solar providers Construction came in just under budget
- Systems are producing the amount of energy they were designed to produce
- Greenhouse gas emissions are being reduced at amounts expected

NHT/Enterprise continues working through its existing portfolio to install solar where appropriate. In addition, the organization has started working with other developers who have reached out to them with interest in performing similar portfolio-level solar installation across their portfolios.
