

# Clean Energy Bond Finance Model

## Morris Model

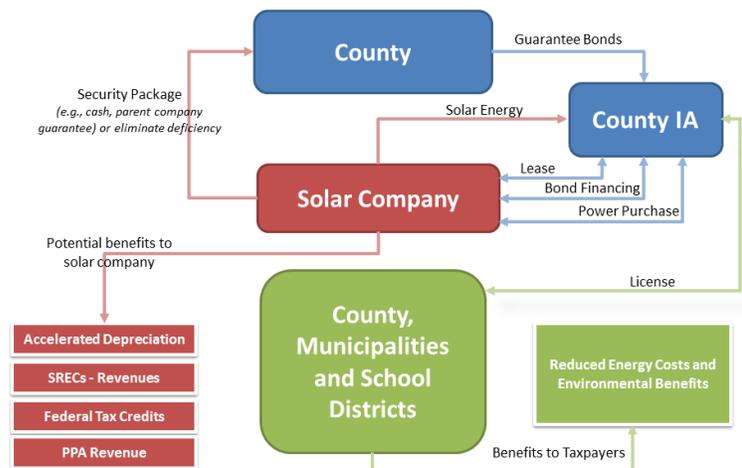
### Full Description

The Morris Model is an innovative financing structure implemented, and repeated, in Morris County, New Jersey. The model is an example of a public-private partnership (also known as PPP or P3) because the potential risks—and benefits—of public improvements are shared with private firms. In the case of the Morris Model, the purpose of the P3 is to realize public energy savings by installing solar panels on public buildings within a county.

The simple idea behind the Morris Model is achieved through a complex financing structure. The finance tools included in the project are bonds and tax credits, as well as state solar incentives, lease revenue, and a power purchase agreement. In order to properly leverage all of these tools, four entities—the county, a separate county authority, a solar developer, and the public facilities themselves—are all required to participate.

The complexity behind the model is important, because the structure enables the public buildings to achieve the lowest cost capital while also protecting the owning governments from needing to acquire the expertise to own and operate the solar installations themselves. The solar company instead owns and operates the panels, and is therefore responsible for necessary maintenance. In exchange for assuming this responsibility, the solar company receives payment from bond proceeds, as well as benefits through accelerated depreciation, the sale of New Jersey’s Solar Renewable Energy Certificates (SRECs), federal tax credits, and the revenue from a power purchase agreement (PPA). The government receives the benefit of reduced energy costs, as well as the environmental benefits of accessing clean energy.

Morris Model Financing Structure



From Inglesino, Pearlman, Wyciskala & Taylor, LLC

The bonds issued for the Morris Model are double-barreled, which means they rely on both project revenue, in this case generated from the PPA, and a public guaranty, which is a pledge from the county to pay bondholders if project revenues would become insufficient. The bonds are also issued for a pool of projects, rather than as an individual issue for each public building. This structure yields an affordable source of capital, because the guaranty decreases the interest rate and the pooling lowers the costs of issuance.

The Morris Model is promising for widespread public investment in clean energy generation. The major challenge to the expansion of the model nationwide is (a) the future reduction or loss of federal tax credits and depreciation allowances and (b) the availability of state solar subsidies like the strong SRECs offered in New Jersey. In place of these financing sources, additional tools may be necessary. Fortunately, promising replacements, such as New Markets and Historic Tax Credits and credit enhancement funds, do exist and may be viable within this structure.

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### Summary Description

The Morris Model is an innovative financing structure implemented, and repeated, in Morris County, New Jersey. Under the model, the Morris County Improvement Authority issues pooled bonds for renewable energy improvements made to multiple public facilities throughout the county. A private developer owns and operates solar panels that are installed on the public facilities, and the panels are then leased back to the public. The bonds are double-barreled bonds, backed by both project revenues and a county guarantee. Project revenues arise from a power purchase agreement (PPA). Additional financing for the project is added through federal tax incentives and New Jersey's Solar Renewable Energy Certificates (SRECs). Energy savings for the public through the Morris Model have been 35-60%.

### Model Profile

<b>Model Type:</b>	Project	<b>Energy Type:</b>	Renewables
<b>Bond Type:</b>	Taxable; Double-barreled revenue with public guarantee	<b>Applying Entity:</b>	Local (County Authority)

### Model Benefits

- **Cheaper energy** – 35-60% lower rates in projects, depending on incentives and agreements.
- **Installation, operation, and maintenance** – Solar developer responsible for installation, operation, and maintenance of solar panels throughout the life of the contract.
- **Small project access** – Pooling component removes cost barriers for smaller properties to take advantage of solar energy benefits.
- **Transfer risk from public** – Financial risk for the deals lies primarily on developer, and deal specifics are transparent through public bidding process.

### Model Shortcomings

- **Governmental guaranty** – Bonds are revenue bonds backed by a county guarantee (double-barreled).
- **Need to pool projects** – Multiple sites must be willing to participate in order to make issuance of a multi-million dollar bond feasible.
- **Nominal public financial benefit** – Majority of risk and responsibility lies on private developer, consequently so do rewards.
- **Reliant on SRECs** or other solar subsidies– Morris Model, as applied in NJ, has been heavily reliant on the state's particularly strong renewable energy credits as a source of financing; other states will need similar support or devise ways to reduce subsidies with sufficient developer returns.

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## Morris Model

### Model Applications

- **19 schools and public buildings in Morris County** – 14,000 solar panels installed at participating school and county government buildings.
- **William G. Mennen Sports Arena, NJ** – 1.57 megawatt solar project with panels installed on the roof of 3 ice rinks and over 500 parking spaces; produces 30% of facility's electricity.
- **Sussex County, NJ** – Solar panels installed on Sussex County Community College and other public school buildings; expected savings of \$1.3M over 15 years, at no cost to the public.

### Locations / Projects that Could Apply the Model

Current form of the Morris Model, which entails taxable revenue bonds backed by a county guarantee, can only be applied by public entities working with a private developer. However, a private borrower with either (a) a sufficiently high credit rating or (b) access to an affordable, high-rated credit enhancement ought to be able to achieve the same interest rate as the bonds used in NJ (at least until taxable interest rates rise significantly).

### Potential Modifications to the Model

- Substitute other tax credit program or source of equity for SRECs.
- Apply model to privately-owned facilities.
- Apply model using tax-exempt Private Activity Bonds, most likely Qualified Exempt Facility bonds.
- Devise models with lower rates of returns and lower solar subsidies.

### Items for Further Research / Development

- What could take the place of SRECs, such as other solar subsidies, or lower returns?
- Can the structure apply to privately-owned facilities?
- Can the model be used with revenue bonds only (no public guarantee)?
- Can the model be used with tax-exempt Private Activity Bonds?
- Could model be used for critical public facility power loads post-Sandy?

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### Additional Resources

Saving with Solar: Presentation by Stephen Pearlman

<http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=ndfs12-pearlman.html>

Tioga Energy Case Study: William G. Sports Arena

<http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=te-ppa-srec.html>

CNET News Article:

[http://news.cnet.com/8301-11128\\_3-20035870-54.html](http://news.cnet.com/8301-11128_3-20035870-54.html)

Morris County Improvement Authority Renewable Energy Program

<http://www.co.morris.nj.us/improvement/renewable.asp>

NREL: RE Financing Structures

[http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=iefc11\\_refinancingstructures.html](http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=iefc11_refinancingstructures.html)

NREL: Financing Solar PV Projects on Government Sites

[http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=NREL\\_solarPV\\_morris\\_12.html](http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=NREL_solarPV_morris_12.html)

Official Statements from EMMA:

<http://emma.msrb.org/ER534827-ER413396-ER815246.pdf>

<http://emma.msrb.org/ER540212-ER418053-ER819990.pdf>

<http://emma.msrb.org/EP395038-EP310858-EP706871.pdf>

<http://emma.msrb.org/ER540212-ER418053-ER819990.pdf>

### For More Information

**About Clean Energy + Bond Finance Initiative (CE+BFI):** CE+BFI, created by CEG and CDFA, is working with finance and energy professionals across the country to find ways to increase clean energy investment by an additional \$5 billion to \$20 billion in the next five years. For more information, visit: [www.cleanenergybondfinance.org](http://www.cleanenergybondfinance.org).

**About Clean Energy Group (CEG):** CEG is a leading national, non-profit advocacy organization working in the U.S. and internationally on innovative technology, finance, and policy programs in the areas of clean energy and climate change. For more information, see [www.cleanegroup.org](http://www.cleanegroup.org).

**About the Council of Development Finance Agencies (CDFA):** CDFA is a national association dedicated to the advancement of development finance concerns and interests. CDFA is comprised of the nation's leading and most knowledgeable members of the development finance community. For more information, visit [www.cdfa.net](http://www.cdfa.net).

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