RMI

ELECTRICITY AFFORDABILITY TOOLKIT

Green Muncipal Bonds

COST CONTROL | COST DISTRIBUTION

AT A GLANCE

TARGET COST DRIVERS

The policy can help to ease customer cost pressures created by these drivers

- **Load growth**
- **Misaligned utility incentives**

IMPACT TIME HORIZON *Page 2*

How long it typically takes before changes materialize in utility behavior or customer bills

Short-term (0–2 years)

POTENTIAL COST SAVINGS *Page 2*

The level of cost savings that can reasonably be expected to result from this policy

Variable

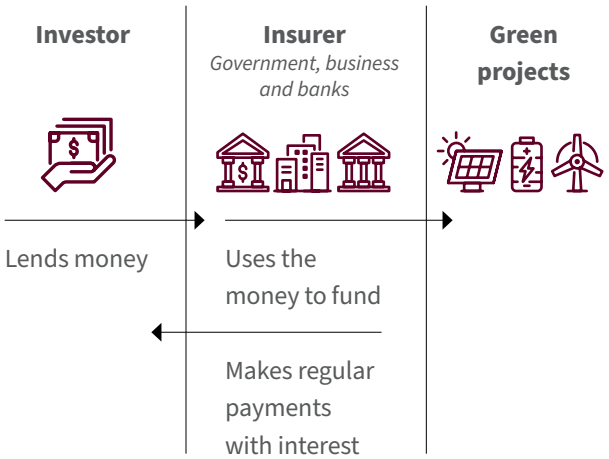
CONTEXT AND BACKGROUND

Green municipal bonds are a financing tool that can be used by states in two primary ways to improve electricity affordability.[1]

First, they can be used to provide low-cost financing for specific energy efficiency upgrades or renewable energy installations for residential and commercial customers. In this case, the government entity issuing the bonds leverages its high credit rating to offer low interest rate loans (often through an intermediary lending partner) to individual customers.

These customers can receive longer-term, lower interest rate loans than they could receive from a private lender while the government entity uses the loan payments to cover repayment to bondholders (plus operating costs). Because of this relationship, customers can benefit from lower financing costs for energy upgrades

How do green bonds work?



[1]We refer to green municipal bonds as "green bonds" in this toolkit. Green municipal bonds must meet certain criteria to be formally labeled as "green bonds" in the market to mitigate the risk of greenwashing, however, a state can issue municipal bonds to be used for a "green" purpose like clean energy or energy efficiency upgrades without receiving the "green" designation. Such bonds should not be marketed as "green bonds" to avoid greenwashing.

and lower electricity costs due to the upgrade itself.

Second, green bonds can be used to fund statewide energy efficiency, clean energy, customer assistance, and other programs currently funded by electricity ratepayers and subject to the utility's allowed return on equity. With this approach, the costs for operating these programs are shifted from the rate base to the tax base. All households benefit from financing costs that are lower than the allowed return on equity for most utilities, and funding these programs through taxes could be more progressive than through charges on electric bills.

Due to their adaptability as a low-cost financing mechanism, green bonds have already been issued by many states in a variety of different contexts. As of 2021, 39 states have issued at least one green bond series, but most issuances have gone towards non-energy-related projects like water and sewer upgrades or mass transit projects.

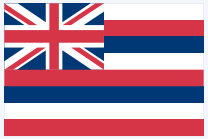
Legislatures can direct a state agency to issue one or more series of green bonds for a specific purpose, grant broader authority to a state agency to issue green bonds for various programs, or create a green bank that can act independently to issue green bonds and finance energy projects.

Ultimately, there is an opportunity to improve electricity affordability by using green bonds to fund valuable customer programs at the lowest cost possible and potentially fund programs using taxpayer dollars rather than ratepayer dollars. A variety of other financial tools, like securitization, bulk procurement, and reverse auctions may also be deployed to lower costs for customers. Green bonds are highlighted here for their targeted potential and history of use.

REAL-WORLD EXAMPLES

As of 2021, green municipal bonds have been used in 39 states.

Connecticut recently passed a bill (Senate Bill 4) that would allow the Office of Policy and Management to issue up to $300 million in GO bonds to pay for the state's hardship protection measures currently funded by charges on customer electric bills and the state's electric vehicle charging program.



Hawaii created the Hawaii Green Infrastructure Authority (HGIA) through legislation in 2013 (Senate Bill 1087) to provide low-interest rate loans for residents seeking to install rooftop solar. The HGIA issued $150 million in green revenue bonds to fund the loans, and the bonds are backed by loan repayments and a green infrastructure fee applied to all electric ratepayer bills.

Vermont's Municipal Bond Bank has issued $2.8 billion in GO green bonds since 1970 to fund its Pooled Loan Program, which provides low-cost financing for infrastructure projects in municipalities and school districts, like energy efficiency upgrades and facilities renovations. The program is not limited to energy-related infrastructure.

IMPACT TIME HORIZON

Short-term (0–2 years)

Green municipal bonds can be issued and start financing projects within 1–2 years.

POTENTIAL COST SAVINGS

Variable

While cost savings will vary from state to state, green municipal bonds can provide cost savings in two ways: lowering financing costs for energy upgrades and funding statewide programs currently paid for by ratepayers at a lower cost than the status quo. Savings are dependent on the type of green bond issued and the projects funded by green bond issuances.

FURTHER READING

- "Leveraging Bond Financing to Support Energy Efficiency and Renewable Energy Goals: A Resource Summary for State and Local Governments", DOE, 2020
- "Municipal Bonds and Green Bonds", EPA, n.d.
- "Reduce Risk, Increase Clean Energy: How States and Cities are Using Old Finance Tools to Scale Up a New Industry", Clean Energy and Bond Finance Initiative, 2013

LEGISLATIVE DESIGN AND IMPLEMENTATION CONSIDERATIONS

Legislation enabling the use of green municipal bonds to promote electricity affordability can include the following components:

Eligible criteria

Legislation can define the types of programs/projects that can be funded through green bond proceeds. Some uses include energy efficiency upgrades, renewable energy installations, or funding customer protection programs like arrearage forgiveness.

Bond and program design

Issuing general obligation (GO) bonds often requires voter approval because the bonds are backed by the state's authority to issue taxes and are repaid through tax revenues or other state funds.

Alternatively, states can issue revenue bonds, which are repaid through specific revenues like individual loan payments (if the bonds are used to finance customer loans) or energy savings performance contracts. The use of bond proceeds, a state's tax code, and a state's debt limit are key factors in determining which type of green bond to issue.

Establishment or empowerment of bonding authorities

Empowering an existing state-chartered bond authority or establishing a new clean energy finance authority or green bank are two methods to issue green bonds. If a state is using revenue bonds to support loans for residential and commercial energy upgrades, the issuing authority needs to manage other financial transactions, like making loans or providing credit enhancement for loans offered by other financial institutions.

Debt limits

Many states have debt limits that restrict the total amount of GO debt they can have, however, revenue bonds are typically excluded from these limits. Issuing new GO debt could impede a state's ability to fund other valuable projects and programs, so it is a key decision for policymakers.

Taxpayer implications (GO bonds)

Paying for programs through taxes can be more progressive than through charges on electric bills, however, states may have regressive tax systems. Evaluating the net financial impact on households of shifting these costs from the rate base to the tax base can help states determine if issuing GO bonds will lead to an affordability improvement or if issuing revenue bonds may be a better approach.

The table below provides examples of how authority and responsibility for green municipal bonds may be distributed across key entities.

VENUE	POTENTIAL ROLES
Legislature	• Authorize bond issuance • Define eligible projects / use of bond proceeds
Regulator	• Issue bonds and implement programs funded by proceeds (if authorized by legislatures) • Monitoring and evaluation of programs funded by municipal green bonds
Administration	• Propose municipal green bond issuance in state budget or state energy plans • Direct state agencies and/or regulators to implement and monitor programs funded by green bonds
RTO/ISO	• No direct role

CASE STUDY: NEW YORK

OVERVIEW

New York passed the Green Jobs Green New York Act in 2009 to provide residents with greater access to low-cost financing for energy efficiency upgrades and clean energy installations and more pathways to green job opportunities. Green Jobs Green New York (GJGNY) is administered by the New York State Energy Research and Development Authority (NYSERDA). The largest GJGNY program is the Residential Revolving Loan Fund where NYSERDA provides loans for one- to four-family residential energy improvements like energy efficiency upgrades and solar installations. The fund was initially capitalized with a portion of New York's Regional Greenhouse Gas Initiative (RGGI) proceeds and has since been replenished by ten issuances of green revenue bonds totaling over $280 million. To date, NYSERDA has issued over 43,000 residential loans amounting to $559 million for households to install energy efficiency upgrades, rooftop solar systems, heat pumps, and more.

THE DETAILS

Establishment or empowerment of bonding authorities

The GJGNY Act directed NYSERDA to create a revolving loan fund consisting of two accounts to finance the cost of approved energy efficiency services: a residential and multifamily account and a non-residential account.

Bond and program design

While the residential revolving loan fund was initially capitalized with RGGI funds, NYSERDA has since used its bonding authority granted in state statute to issue ten series of green revenue bonds to maintain the fund. However, NYSERDA often requires additional RGGI funds to pledge excess revenues to cover expected loan losses.

The GJGNY Act directed NYSERDA to establish an on-bill recovery mechanism for repayment of residential loans (in addition to a traditional loan repayment method) as well as develop other underwriting criteria to expand access to loans for households that may not qualify using traditional lending criteria.

Eligibility criteria

NYSERDA has developed several criteria for eligible projects and customers funded by the loans. Energy services eligible for loans must meet cost-effectiveness standards developed by NYSERDA, residential loans must be capped at $13,000 ($25,000 for loans where the project payback period is less than 15 years), and loan interest rates should be no higher than necessary to make providing the energy upgrade feasible (the average interest rate on residential loans is 3.82%).

KEY TAKEAWAYS

The GJGNY Act provided clear parameters to NYSERDA to develop a residential revolving loan fund, which NYSERDA has since funded through 10 series of green revenue bonds over 14 years and supplemental RGGI funding. Over this time period, NYSERDA has provided $559 million in low-cost loans to households to install energy upgrades and reduce electricity costs. NYSERDA's green revenue bonds do not need voter approval, do not burden taxpayers, and do not count against New York's debt limit.