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Alternate Financing for Deep Building Retrofits: A Primer

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This document is a first draft and we value your feedback to improve future versions. Please e-mail drai@hci3.ca with comments.

Introduction

To finance deep building retrofits, building owners commonly use internal resources, such as facilities renewal budgets, external debt through commercial loans, and grants, if available. In addition to these strategies, building owners can use other alternative mechanisms to leverage internal and external resources for building retrofits. This primer aims to provide a brief overview of these mechanisms along with resources that provide more in depth information.

Alternative Financing Strategies

Alternative mechanisms for financing building retrofits include:

- **Energy performance contracting (EPC):** An energy service company (ESCO) designs, builds, and can secure financing to improve energy management in a building or buildings. A performance guarantee is provided, and utility savings are often used to pay back the cost of the project.
- **Energy purchase agreements:**
 - **Energy-as-a-Service (EaaS):** EaaS can often be a subscription-based monthly service fee for devices and equipment or management of energy. The owner does not pay for the product but may pay subscription fees.
 - **Energy Purchase Agreements** (or power purchase agreements (PPAs)) are contractual agreements between electricity or heat generators and buyers. They are commonly used in the renewable energy industry for the owner's purchase of solar and wind electricity.
- **Green bonds:** Green bonds are debt issued by public and private organizations to finance climate and environmental projects.
- **Green leasing:** Green leasing is a lease or rental agreement that outlines how tenants and landlords share in the energy savings benefits of a deep building retrofit.
- **Green revolving funds (GRF):** GRFs are internal funding mechanisms to help finance sustainability and energy projects. GRFs may be seeded with an initial contribution. Project savings are then used to pay back the fund. A variation of a GRF is an uncapped funding mechanism where project savings are used to pay down projects and the capital is not limited to a GRF fund amount.
- **Internal carbon fees:** Monetary value is placed on an organization's greenhouse gas emissions. This value can be invested in climate projects and programs.
- **On-bill financing:** On-bill financing are provided by companies to their customers as an easy way for customers to access upgrades like heat pumps, electric thermal storage units, and solar panels, to be paid on their utility bill.

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- **On-bill financing (OBF)** is where the utility is the lender. Ratepayer funds are the most common funding source.
 - **On-bill recovery (OBR)** is where the capital provider is a third party (lender or government), and the utility operates as a repayment conduit. A utility may opt to use its own funds to offer administrative support or credit enhancements.
 - **Tariff On-bill (TOB)** is where building retrofits are not considered a loan, unlike OBR and OBF programs. Instead, they are structured as a cost recovery charge tied to the utility meter where upgrades are made and the charge on the bill is treated as equal to other utility charges.
 - **Property Assessed Clean Energy (PACE):** PACE programs exist for the commercial sector, in addition to the residential sector. A municipality adds an assessment or charge to a commercial property owner's property tax bill (or another local improvement charge) for a period (e.g., 10 years) to pay back an energy efficiency loan to the property owner. Funding can come from the municipality or other funding sources. Enabling legislation is required.
 - **Credit Enhancements** can help reduce a financial institution's perceived risk. Organizations use credit enhancements to motivate and/or negotiate with third-party financial institutions for more favourable loan products. This could include broadening consumer access to financing (e.g., lending to borrowers that they may not have otherwise considered, relaxing underwriting criteria), extending loan terms, lowering interest rates and/or offering repayment flexibility. Loan loss reserves (LLRs) are a common types of credit enhancement. Under an LLR, public funds are set aside (or reserved) as loans are issued (e.g., typically 5% of the total loan portfolio) to cover the financial partner's losses (or a portion of those losses), should they occur. Credit enhancements could also include interest rate buy downs and mortgage loan insurance (e.g., MLI Select)

Resources

The following resources are from public and private organizations. Please email us if you have a good resource that you think should be highlighted. Resources are listed in alphabetical order by the author, date (when available), and title, which is hyperlinked. A short description provided by the author is also included. Resources were selected for their focus on alternative funding and financing strategies for deep building retrofits.

- City of Toronto (2025). [Green Debenture \(Bond\) Program](#). The City's Green Debenture Program leverages the City's low cost of borrowing to finance capital projects that contribute to environmental sustainability.
- Energy and Mines Ministers' Conference (2016). [Financing Energy Efficiency Retrofits in the Built Environment](#). This study examined different innovative financing mechanisms used to promote energy efficiency upgrades in the housing and building sectors with a focus on various initiatives in Canada, the United States and the United Kingdom. Best practices were identified for models that align savings with the cost of loan repayments through repayment on utility bills or property tax bills, as well as traditional credit sources from financial institutions, other suppliers and governments and their agents.

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- Green Finance Institute (2025). [Local Climate Bonds](#). Local climate bonds (LCBs), also known as community municipal investments (CMIs), are an innovative green finance mechanism that enable local authorities to raise citizen and institutional borrowing to fund environmental and social impact projects.
 - Green Lease Leaders (2025). [Reference Guides for Tenants and Landlords](#). The landlord and tenant reference guides offer recommendations for building owners looking to implement green leasing practices across their portfolios.
 - KPMG (2023). [How to Get Internal Carbon Pricing Right](#). This paper outlines how internal carbon pricing works and how to go about adopting it.
 - Institute for Market Transformation. [Energy Savings Agreements](#). An energy service agreement is a pay-for-performance, off-balance sheet financing solution that allows customers to implement energy efficiency projects with zero upfront capital expenditure.
 - Leventis et al. (2016). [Current Practices in Efficiency Financing: An Overview for State and Local Governments](#). Lawrence Berkeley Laboratory. This report distinguishes between "traditional" financing products (e.g., loans and leases) that are commonly used to pay for energy efficiency as well as many other goods and services, and "specialized" products (e.g., PACE and on-bill financing products) that are specifically designed to support energy efficiency and other clean energy installations and to overcome market barriers.
 - Natural Resources Canada (2022). [Energy Performance Contracting \(EPC\)](#). Find out more about EPCs by downloading this step-by-step guide.
 - Second Nature (2025). [Revolving Funds](#). Revolving funds are internal investment vehicles that provide funding to internal parties for implementing sustainability projects that generate cost savings.
 - US Department of Energy (2025). [Financing Navigator Resources](#). Each building sector faces different challenges and opportunities regarding financing for energy efficiency and renewable energy projects. The sector-specific financing primers provide a summary of how energy financing is done within each sector.
 - US Department of Energy (2016). [Green Revolving Funds Tool Kit](#). A green revolving fund (GRF) is an internal capital pool that is dedicated to funding energy efficiency, renewable energy, and/or sustainability projects that generate cost savings.