

# BRIDGING THE GAPS



**Connecting NYC's Residential Co-ops and  
Condos to Energy Efficiency Resources**

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NEW YORK CITY  
**2030**  
DISTRICT®

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# Executive Summary

NYC 2030 District is a public-private partnership focused on advancing collaborative sustainable energy projects. Its current focus involves building its capacity to act as a resource connector for its members to existing products and services that aid successful completion of residential energy efficiency retrofits. This comes in response to many of its members reporting challenges in funding retrofits or not knowing about existing resources that could augment project development. To achieve this goal, research was conducted on how NYC 2030 District can position itself to facilitate project aggregation and knowledge sharing between its members regarding energy efficiency projects. The crux of the research lies in the power of implementing peer-to-peer collaborations which are a type of partnership between organizations that provides the foundation for facilitating project aggregation and knowledge sharing. The research utilizes a qualitative and action-oriented approach involving interviews, comparative case studies, and document analysis. Interviews comprising of current and prospective NYC 2030 members were most important. They provided insight on organizations' motivations to join NYC 2030, interest in project aggregation, and what barriers they think are important when doing an energy retrofit. The selected approach seeks to generate actionable knowledge, strengthen relationships within the NYC 2030 network, and positively change dominant systems regarding multi-family buildings' energy efficiency retrofits. The research produced this guidebook tailored to co-ops and condos for circulation among the District's members. It outlines the pathways and barriers to energy efficiency projects, reviews several solutions available to overcome these barriers, and explains how the District will help its members.

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# NYC 2030 District

## GOALS

- Accelerate sustainable energy innovation
- Foster sustainable community prosperity
- Improve resilience to mitigate risks
- Facilitate financing of District goals
- Advocate for policy progress

## VISION

The NYC 2030 District will achieve climate progress by working with all our stakeholders to collaboratively facilitate energy savings. We will share clear information, guide our partners to clean technology solutions, drive innovation and connect the dots in the community and all industry sectors to advance sustainability and resilience benefits for NYC.

## DISTRICT ROLE TO MEMBERS

Below is a selection of resources the District intends to provide for its members.

- Options for project aggregation and knowledge sharing between members.
- Resource hub containing information for known financial incentives, funding organizations, and trusted contractors/firms to aid in project development.
- Facilitators to meet with co-ops/condos to discuss retrofit options, prioritization of retrofits, and required resources to successfully complete a project.
- Educational materials on the different types of retrofits and their benefits.
- Protocols for shepherding buildings through project development.

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# Chapter 1: Energy Efficiency Retrofits

Since 2007, the City of New York has increasingly recognized energy efficiency (EE) as an important energy and public policy goal. It has dedicated many programs and resources for helping residential buildings unlock hidden energy efficiency savings. There has also been significant activity at the federal and state governments and from nongovernmental actors to promote EE standards and practices. Examples of such resources include financial assistance and incentives, building energy assessments, information on energy efficiency retrofit options, and educational material on how retrofits impact the environment and building operations. However, many co-op and condo owners, managers, and residents still feel the resources available fall short in fulfilling their needs for successfully completing EE retrofits.

In 2016, residential buildings in New York City (NYC) accounted for 48% of building-based emissions. 37% of those emissions came from electricity use, the second largest source of emissions behind natural gas combustion<sup>1</sup>. This represents an opportunity for residential buildings to conduct upgrades that not only lower utility bills and harmful emissions, but can also improve indoor health, comfort, and well-being of all New Yorkers. Energy efficiency opportunities are abundant in nearly every multifamily building in NYC. Unfortunately, the uptake of EE practices is much slower in the residential sector than others, which creates an efficiency gap. This shortfall results in millions of dollars wasted annually on needlessly high energy expenditures and the emission of thousands of tons of greenhouse gases into the atmosphere. These conditions lead many to agree that existing policy interventions and government incentives do not adequately foster successful energy efficiency project completion.

This section reviews the characteristics of energy efficiency projects and reasons to pursue them, barriers to completing projects, key success factors, and how to convince others to develop energy efficiency projects.

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## CHARACTERISTICS OF ENERGY EFFICIENCY RETROFITS

An energy efficiency retrofit is the modification or conversion of an existing process, facility, or structure that may improve energy efficiency or decrease energy demand. Energy efficiency retrofits can reduce operational costs, especially in older buildings, and increase residents' comfort. Cost-effective retrofits achieve energy savings and reduced energy costs at a level sufficient to pay for upfront capital costs of undertaking the project within a time period equal to or less than the useful life of the project or equipment implemented. An effective retrofit plan ideally should consider economic vitality, environmental quality, and social equity at project level.

The Community Preservation Corporation identifies three tiers of retrofits; simple upgrade, moderate renovation, and substantial improvements. A simple upgrade costs about \$500 to \$1,500 per multi-family unit. Energy conservation measures in this tier can be implemented by any building owner to lower operating costs, improve asset value, and boost performance. Materials are widely available for these measures with low-cost, easy installation which often means a quick payback on investment. These minor efficiency improvements also free up cash flow to pursue additional retrofits later. Most upgrades can be completed during periods of occupant turnover or included in routine replacement schedules. Examples of simple upgrades include LED lighting and sensors, temperature controls and thermostats, and a boiler tune-up. Implementing a set of improvements to several systems could lead to cumulative savings of more than 15%.

Moderate renovations require upgrading major systems and key components to produce long-term cost savings and improve comfort. These cost about \$1,000 to \$8,000 per unit and can reduce energy use by 10% to 40% depending on the building. These efficiency measures should be part of planned renovation projects in order to save time, reduce overall cost, and minimize disruptions to occupants. Examples of moderate renovations include ENERGY STAR® appliances, window replacement, and high-efficiency pumps and motors. An energy engineer should be consulted to provide an energy audit to help identify, prioritize, and analyze the cost-effectiveness of potential upgrades.

Substantial improvements involve major efficiency investments that yield sizable savings, resilience, and significant long-term value. These cost about \$5,000 to \$20,000 per unit and can reduce energy use by 20% to 75% depending on the building. Substantial rehabilitations and gut renovations present an opportune time to comprehensively improve a building's envelope, redesign central HVAC systems, and integrate on-site energy generation in addition to addressing simple and moderate efficiency measures. Large-scale efficiency measures will increase property value and produce long-term cost savings and improve quality of life.

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## REASONS TO PURSUE RETROFITS

Typical benefits of successfully completing energy efficiency retrofits include reducing energy usage, money spent, waste produced, and emissions; offsetting the cost of a planned capital project; improving cost-competitiveness, productivity, and residents' affordability; and it is a relatively low-risk, high-profit investment that directly impacts a building's bottom line. From this there are three key areas building decision makers should be interested in benefiting from: financial gain, local law compliance, and competitive advantage. Regarding financial gains, most retrofits increase profits and cash flow via energy cost reduction as opposed to increased revenues. The average multifamily building can cost-effectively reduce annual energy bills by 15-30%<sup>2</sup>. Many subsidies are also available that further reduce energy efficiency project cost. Most co-op and condo managers agree that energy management projects are good investments because they contribute to reduced maintenance costs, lower vacancy losses, and mitigate exposure to escalating utility prices.

### BENEFITS

- **Save money**
- **Lower energy usage**
- **Decrease emissions**
- **Improve resident comfort**
- **Financial gain**
- **Local Law compliance**
- **Competitive advantage**

In terms of local law compliance, all NYC buildings should be aware of four specific ones<sup>3</sup>. Local Law 85, the NYC Energy Conservation Code, applies to all renovations, repairs and alterations to existing buildings as well as all new construction. Local Law 33 (Energy Efficiency Grade), beginning in 2020, requires building owners use the EPA Energy Star Portfolio Manager benchmarking tool to provide an energy efficiency score to the NYC Department of Buildings, who will then issue an energy efficiency grade. Within 30 days of the building owner obtaining the energy efficiency grade, it must be posted in a conspicuous location near each public entrance of the building. Two other local laws to keep in mind that were recently amended to include buildings over 25,000 sq. ft are the Energy Benchmarking and Disclosure Law (LL 84) which requires reporting and public disclosure of annual energy and water usage, and the Energy Audit and Retro-commissioning Law (LL 87) which requires conducting an energy audit and retro-commissioning every ten years. Additionally, some buildings may face issues with compliance for City code and landmark requirements.

For competitive advantage, retrofits can improve poor or dropped energy benchmarking scores and help co-ops and condos meet or improve their sustainability goals. These types of projects are also very effective marketing tools because they can improve the building's image and differentiate it from the competition. Benefits of doing the project sooner rather than later are numerous.

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## BARRIERS

Most energy efficiency retrofits are not started or stall due to one or a combination of the following perceived barriers:

- Lack of money
- Not enough time or personnel for project selection/development due to competing priorities
- Little to no internal expertise to implement retrofits
- Issues with gaining policy support within the decision-making process of the co-op or condo

These challenges can be compounded if long-term plans for anticipating building and equipment milestones do not exist or do not leave room for considering and scheduling in retrofits. If building decision makers identify and focus their attention on key barriers specific to their co-op or condo, they can develop appropriate interventions for more effectively improving its energy efficiency. Interviews<sup>4</sup> reported two key barriers: limited financial ability and project execution. The latter includes impact on residents' comfort, a lack of resources available to develop projects, and smaller co-ops and condos in particular may have difficulty picking a project developer they trust.

### Financial

Many building decision makers of co-ops and condos feel they lack the financial ability, external resources, or incentives to successfully complete a retrofit even when they want to do energy efficiency projects. They may be faced with high upfront capital costs, an inability to obtain sufficient external funding assistance, and building owners often are already highly leveraged, making them hesitant to take on additional debt. Higher priority is also placed on investments that have a more

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***Building decision makers may not be aware of savings opportunities or ways to obtain financing to fund retrofits which leads to good and cost-effective retrofits being forfeited or postponed.***

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visible and proven property improvements, such as aesthetic lobby upgrades, new in-unit appliances, and other benefits to residents' comfort. Building decision makers are not in the habit of putting a lot of speculative money out just for the sake of doing retrofits nor should they be. Unfortunately, building

decision makers may not be aware of savings opportunities or ways to obtain financing to fund improvements, which leads to good and cost-effective retrofits being forfeited or postponed due to financial constraints. The issue of lacking financial resources becomes even more important for smaller co-ops and condos because many financiers are not attracted to retrofits requiring less than \$100,000<sup>5</sup>. Co-ops and condos may not be aware of other common financial arrangements that could help them such as lines of credit from the bank or utility incentive programs. Another financial barrier is that no one funding structure fits all sizes and types of buildings. Multifamily financing is different for each building and becomes even more complicated for affordable housing. Additionally, it may be hard to determine if retrofit implementation would draw from the operating budget or the

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capital budget, and where the savings are applicable. Timing may also be a critical factor for decision makers.

### **Competing Interests**

Co-op and condo owners and operators rightfully prioritize improvements that require immediate attention to preserve the safety and comfort of their occupants. Even for some decision makers interested in EE, retrofits remain a low priority due to baseline requirements related to maintaining, leasing, and financing a co-op or condo in NYC. However, scheduled general improvements often have the space for adding energy efficiency retrofits. These opportunities unfortunately often go overlooked or decision makers are unaware of them.

### **Internal Knowledge**

A large disconnect exists in information flows between building decision makers and existing energy efficiency resources. This prevents decision makers from learning about types of retrofits available, required financial and legal knowledge, and how to implement EE retrofits. Most of this disconnect originates due to poor information provision in terms of chosen formats, target audience, and delivery of information around initiating retrofit decisions. These conditions leave many co-ops and condos unaware of the types of retrofits available to them. In terms of financial know-how, without the appropriate knowledge many decision makers are either unaware or have difficulty understanding the variety of financial arrangements available to them. Most use simple payback analyses to evaluate projects, which can lead to some benefits remaining hidden. In some situations, decision makers avoid retrofits altogether because financial terminology, contractual details, and outcome uncertainty become intimidating. Regarding a lack of technical knowledge, this can lead to issues with finding and working with appropriate suppliers and contractors, difficulty in accurately measuring and verifying energy savings produced, and the risk of retrofit underperformance due to poor project development and equipment selection.

### **Decision-Making Processes**

The main challenge to decision-making processes for retrofits is the large number and variety of actors that need to be engaged. Developing retrofit projects requires interdisciplinary collaboration spanning energy practitioners, policy and financial experts, as well as co-op and condo owners, managers, and residents to name a few. Most buildings do not have all these groups assembled internally and may not know where to find them externally. Successfully completing retrofits in co-ops and condos also requires collective action which depends on the skills of the actors and the capacity for building consensus. Two rules exist that can complicate achieving a consensus on retrofit decisions. First, property law dictates who owns what parts of a building, which plays a role in determining who has a say in decisions about retrofit work. Second, the association bylaws structures how decisions involving multiple owners or residents can be taken, including meeting arrangements, voting processes and decision-making thresholds. A combination of these rules will determine who

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holds responsibility for the costs of the work, and whether and how finance can be accessed. This depends on each co-op or condo's internal decision-making process and relationship network. Additionally, it can be crucial to have a leader within the group to spearhead consensus building on retrofits.

## KEY SUCCESS FACTORS

There are 10 success factors for retrofit project management<sup>6</sup>:

- Project team characteristics
- Team member characteristics
- Planning
- Contracting
- Information management
- Communications
- Time management
- Space management
- Management of working environment
- Supporting resources

Assembling the right project team is the most important factor for determining retrofit outcome. The right team goes beyond appropriate experience and skills. It also has good chemistry and attitudes, remains together for the duration of the project, and is flexible and highly responsive to unexpected changes. All team members will maintain constant, open communication and work through a designated single point of contact to ensure all members have full and complete information<sup>7</sup>. A successful retrofit will invest a significant amount of time in preplanning to help the team understand and develop common goals. The planning stage is also when a standard contract procedure and measurement and verification protocol should be decided. These can increase a retrofit's accuracy and make coordination easier during project development and implementation. A standard contract procedure will share risk, tasks, and profit reasonably. Additional success factors that are not as critical include top management support, economic incentives such as special funding, and provision of educational materials on retrofit benefits to improve awareness among building decision makers and those affected by the proposed retrofit thus garnering further project support.

## HOW TO CONVINCING OTHERS THE BENEFITS OF A RETROFIT

Convincing building stakeholders to agree on energy efficiency retrofits can prove difficult. The number of people that need to express support is quite lengthy spanning co-op and condo residents, building managers, board members, and sometimes even organizations that supply the necessary

resources for completing a retrofit. Successful retrofit project development articulates how it adds value to a co-op or condo, includes collaboration, quantifies all benefits, minimizes financial risk, and develops a pitch tailored to the group that needs to be engaged. When a retrofit project is great, the benefits need to be sold with all the passion in the world. Positive, forward thinking passion is helpful, but it is important to remember passion also emerges from fear. People almost always become more action-oriented when they are at risk of losing something as opposed to the prospect of gaining something. This means communication must be framed in a way that gets the audience to understand the problem or opportunity they currently face and agree that there is a problem or opportunity before proposing potential solutions. Doing so creates a space for explaining how a retrofit circumvents certain risks and avoids the default option of do nothing<sup>8</sup>.

*If you would like to learn about solutions to some of the challenges discussed when endeavoring to complete a retrofit, this guidebook provides information relating to financial options, peer-to-peer collaborations, the Investor Confidence Project, and various other existing resources.*

## Toolkit

- Community Preservation Corporation’s “[Underwriting Efficiency](#)” handbook for understanding efficiency, benefits, types of projects and associated savings, and a guide for integrating efficiency measures into mortgage financing processes.
- Building Energy Exchange’s “[Turning Data into Action](#)” report for easy to digest tear sheets of building efficiency upgrade opportunities that are matched to key phases in a building's financial lifecycle. Helps building decision makers better understand their retrofit options at critical milestones. Each tear sheet includes analysis of potential costs, energy savings, and payback periods for a retrofit.
- Case studies produced by Building Energy Exchange of how NYC buildings have gone about retrofits can be found here: <https://be-exchange.org/resources/>.



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**building energy  
exchange**

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## Chapter 2: Financial Solutions

The U.S. Environmental Protection Agency estimates that as much as 30% of energy consumed in buildings may be wasted. Money lost due to these inefficiencies in just one year frequently totals more than the cost of financing energy upgrades<sup>5</sup>. Energy efficiency (EE) projects are unlike most other projects because with properly structured financing, EE projects may be implemented without exceeding existing operating or capital budgets. There are practically an infinite number of financial alternatives to consider. Knowing the strategic needs of the building decision makers is a critical first step to selecting the best one. Once it has been determined that internal sources of funds are not available or insufficient for a retrofit, the options become (a) using third party funding sources, (b) postponing the project, or (c) installing part of the upgrades by breaking the project into smaller pieces. Financing can be thought of as a two-step process: financial instruments such as loans and sources of funds. No one financing alternative is right for every building.

There are two basic approaches to funding projects, pay-as-you-go and pay-as-you-use. Pay-as-you-go means paying for the project out of current funds at the time of expenditure. If there is not enough cash on hand during project implementation, it gets postponed until there is enough cash. Pay-as-you-use means borrowing to finance the expenditure, with debt service payments being made from energy cost savings generated during the useful life of the project. EE projects generate operating savings over the life of the project making this approach attractive. A good retrofit can be financed such that the annual energy cost savings are greater than the repayments. This means the project becomes “cash flow positive” and does not impact the capital budget which allows building owners and managers to move forward without sacrificing any other budget line item. New York City co-ops and condos have access to more financial resources than they may think. To further reduce the financial barrier, NYC 2030 District will develop a Resource Hub that, among other functions, lists many economic incentives and organizations equipped to help co-ops and condos determine the correct funding mechanisms for them.

This section reviews how to sell retrofits and the option of project aggregation.

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## SELLING PROJECTS<sup>9</sup>

Financing is a collaborative process with options that shift depending on the co-op or condo, market, project, and many other factors. The best way to understand the process is to put yourself in the funder's position. Traditionally, funders evaluate a possible financial instrument, such as a loan, from several perspectives. First is capital. Is there capital at risk on the part of the borrower? How motivated is the borrower to pay back the loan? Second is credit or cash flow. What are the revenues and expenses of the borrower and/or the project? What are expected trends in the energy industry or the industry of the borrower? Third, collateral. What is the security for the funds? If funds are not paid back as scheduled, what items of value remain for the funder? Fourth, conditions. What are the desired terms of the funds? Lastly, character. How experienced is the management team? What is the reputation of the co-op or condo? Developing the trust of your funder will go a long way in your quest for securing funds. The initial challenge is to accurately identify a financial instrument that meets the needs of all parties which will inevitably go through a series of negotiated modifications to achieve the final result. It is already well documented that across public and private funding, there is enough capacity to fund creditworthy, properly structured retrofits. By being aware of funder requirements and working collaboratively with a knowledgeable and experienced financing partner from the earliest stages of a retrofit, co-ops and condos can avoid costly project delays, meet or exceed expectations, and avoid leveraging their balance sheets.

### **What Funders Look for in a Retrofit**

Funding sources have a due diligence period where they look for ways to verify everything disclosed in the initial application package. They want to expose all the project's weaknesses to properly evaluate the risks of funding it. Common tools used to analyze projects are Net Present Value and Internal Rate of Return. A key point of interest may be the debt service coverage analysis. If the debt service coverage ratio is too low for the retrofit, some alternative scenarios should be considered. There are three easy options to do this. First, try to extend the term of the funding to lower payments and increase the coverage ratio. Second, if project expenses are too high consider restructuring the project possibly by eliminating a costly piece of equipment. Third, use some of the co-op or condo's own cash to pay for a small portion of the project and decrease the requested funding amount. To attract funders, a project must present a risk profile that aligns with the nature of the financing and anticipated returns. This can be described in terms of a basic risk/reward analysis.

### **What to Ask Funders**

- What financial instruments are available to me?
- What factors will affect the rate and terms of the financial instrument?
- How soon can you send me a proposal to finance the project?
- What is the timeline for approval, due diligence, and funding?
- Does a committee of funders meet to discuss project? Can I make a presentation to them?

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- What is your course of action if the project fails to generate the expected savings?
  - What happens if utility rates go down and the dollar amount of savings is insufficient to cover repayment?
  - Is there flexibility for when payments can be made?

### **What to Send Funders**

Never try to hide or manipulate information. Funding sources should have all the relevant information, both good and bad. An effort should be made to meet face-to-face with potential financiers. Building the relationship aspect of the decision-making process is an opportunity to turn what could be a marginal application into an approval. When preparing a package of information about a retrofit to send to a potential funder, it should include:

- Financial statements
- Revenue and expense projections from the project
- Any contracts or agreements between your company and service or product providers
- Description of equipment to be installed
- Summary of energy audit results
- Measurement and verification plan
- Project schedule
- Project management team summary
- Any applicable references

## **PROJECT AGGREGATION<sup>10</sup>**

Project aggregation means the process of taking separate components of one energy efficiency retrofit and/or separate energy efficiency retrofits and aggregating them within a common organizational structure or contractual framework. Components that can be aggregated include goods and technology such as EE equipment and parts, services, financing, financial incentives, discrete project development tasks, or any number of other elements that go into the different phases of implementing a retrofit. Project aggregation can be achieved through peer-to-peer collaborations. Aggregating retrofits achieves greater economies of scale and unlocks synergistic elements within the aggregation which can lead to achieving greater energy and administrative efficiency, lowering transaction costs, and lowering production costs. Aggregating can also prove especially useful in overcoming the inherently fragmented nature of EE projects, incentives, and existing resources within the EE sector generally. It helps efficiently combine different segments of the EE retrofit sector under common transactional frameworks which circumvents many challenges associated with retrofit related resources' proclivity for fragmentation especially in the case of smaller projects.

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By incorporating appropriate design characteristics, using project aggregation as a technique for retrofit project development and execution could help unlock investment and catalyze wider implementation of EE retrofit projects especially in residential structures. Aggregation avoids certain energy efficiency retrofit barriers through four mechanisms:

- Developing project structures and contractual frameworks for producing bankable projects
- Clustering projects to a sufficient size that produces appropriate economies of scale for attracting funders
- Reducing transaction costs involved with developing, financing, and implementing retrofits
- Helping to effectively mitigate project risks

Aggregating projects could plausibly provide one-stop-shop transactional and organizational structures that provide greater EE opportunities in the residential buildings sector which also helps alleviate the efficiency gap. Some project aggregation opportunities can manifest naturally where multiple potential EE projects can be undertaken within a single building, single co-op or condo unit, or even across multiple buildings across multiple sites. However, aggregating does not occur automatically and can only be the product of deliberate project design and transaction structuring.

*If you would like to learn about other solutions for overcoming energy efficiency retrofit challenges, this guidebook provides information on peer-to-peer collaborations, the Investor Confidence Project, and various other existing resources. There is also a chapter about energy efficiency retrofits covering their characteristics, benefits, barriers, and success factors.*

## Toolkit

- NYCEEC develops custom financial solutions for energy efficiency and clean energy projects in multifamily and commercial buildings by working with incentive providers, financial partners, and utilities. Check out their website for more information and tools at <https://www.nyceec.com/>.
- To learn more about which financial arrangements may be best for your co-op or condo, check out the book “Energy Project Financing: Resources and Strategies for Success” by Albert Thumann and Eric Woodroof.
- Community Preservation Corporation’s “[VeriFi](#)” tool is free software that building owners can use to easily calculate estimated cost savings for energy and water efficiency upgrades. Estimates are based on data from real buildings and residents. The tool offers financing options.

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## Chapter 3: Peer-to-Peer Collaborations

Peer-to-peer collaborations occur when organizations join forces in pursuit of common goals without losing their autonomy and without abandoning their own specific interests. They are commonly born from organizations lacking appropriate resources or knowledge to complete a specific project. This creates a situation where solutions need to be developed by working across disciplinary and organizational boundaries. Peer-to-peer collaborations are a type of partnership between organizations that provides the foundation for facilitating project aggregation and knowledge sharing. Regarding project aggregation, the District envisions connecting its members to other members that may be able to link up individual projects to achieve greater economies of scale for unlocking additional funding opportunities, co-purchasing required products and services for a retrofit, and increasing impact. This would improve members' buying power and could substantially lower retrofit costs. Knowledge sharing among members could reveal how they successfully completed certain retrofits, what resources they needed, and trusted contractors and service providers. This could occur when one member advises another on how to go about a retrofit they are considering. Members recognizing each other as advising partners rather than a collection of best practices is crucial in successful knowledge sharing because knowing what worked for one member is only part of the story. It is also important to understand the journey they took to complete a retrofit and how they overcame any barriers.

Some organizations may elect to adopt this cooperative strategy when external market conditions fail to provide an individual co-op or condo the resources it needs for preserving resident comfort, reducing operating and maintenance costs, and enhancing their marketing appeal. This opportunity for learning and collaboration can lead to increasing buying power, effective risk management, providing better products and services with the possibility of accelerating technological advancement, and skills and knowledge growth. It is important to remember that peer-to-peer collaborations are not an off-the shelf product and should not be a marriage of convenience.

This section reviews characteristics and benefits of peer-to-peer collaborations.

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## CHARACTERISTICS

A peer-to-peer collaboration is an intentional relationship between two or more organizations to exchange, share or co-develop resources, competencies, capabilities or knowledge to pursue mutually beneficial objectives while remaining legally independent organizations that exercise shared control over the collaboration. More specifically, peer-to-peer collaborations are considered as a type of dynamic capability that supports organizations with external resources, which otherwise would have been missed. Each organization maintains its autonomy while gaining a new opportunity to develop more effective systems, expand into a new market, or develop an advantage over a competitor. Partners may provide the peer-to-peer collaborations with resources such as products, distribution channels, connection to project funding, capital equipment, knowledge, or expertise. Each partner can have different objectives for the collaboration, but it is important that these objectives are compatible and can be achieved simultaneously. In the planning stages, partners should develop a shared vision of what the collaboration will accomplish to increase commitment for seeing it through. Peer-to-peer collaborations work to empower the relationships between partners via respect, commitment, trust, teamwork, knowledge sharing, communication, and shared goals. These relationships are usually determined through good faith in co-developed collaboration rules, rather than a formal contract.

## BENEFITS

Peer-to-peer collaborations allow for the sharing of risk or leveraging the partnership where a high barrier to entry may exist for developing retrofits. Partners can bridge internal weaknesses and cope with the complexity of the energy efficiency sector. Four groups of benefits result from peer-to-peer collaborations: knowledge advancement, new resources, reducing costs and risk, and social capital growth. Regarding knowledge advancement, peer-to-peer collaborations have become a popular option for organization learning and knowledge sharing. High degrees of trust and commitment between partners also allows for fostering the development of new skills and competencies. In terms of new resources, partners may gain access to emerging technologies and previously unavailable, yet critical, resources required to complete a retrofit. Partners can also reconfigure their existing resources to identify better ways to integrate complementary resources and develop new ones. Peer-to-peer collaborations can also allow for the sharing of risk, lower production and transaction costs, and opportunities to strengthen a building's reputation.

*If you would like to learn about other solutions for overcoming energy efficiency retrofit challenges, this guidebook provides information relating to financial options, the Investor Confidence Project, and various other existing resources. There is also a chapter about energy efficiency retrofits covering their characteristics, benefits, barriers, and success factors.*

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## Toolkit

To learn more about peer-to-peer collaborations, check out the selected readings.

- [“Strategic Alliance Success Factors: A Literature Review on Alliance Lifecycle”](#) by Margherita Russo and Maurizio Cesarani
- [“Joint Ventures and Strategic Alliances: Examining the Keys to Success”](#) by PricewaterhouseCoopers
- [“Learning Success Factors of Strategic Alliances and Estimating Under an Alternate Specification”](#) by Rama Prasad Kanungo

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# Chapter 4: Investor Confidence Project

The Investor Confidence Project (ICP) works with a wide array of stakeholders to develop a foundational platform for standard methodologies and protocols for energy efficiency (EE) project development and documentation. This pathway for standardized EE project development is designed to reduce transaction costs associated with energy efficiency investment, develop actuarial data to unlock capital markets, and help match retrofits with appropriate resources necessary for successful completion. The District proposes adopting the ICP Protocols in response to members' challenges with identifying and connecting to existing energy efficiency resources. It would provide a roadmap for creating standardized projects with reliable returns that can also form the basis for project aggregation. The ICP Protocols are a fundamental process to help building decision makers understand how to do retrofits and connect the dots across people and resources in the highly fragmented EE sector through a common framework. This is not a tool to teach building decision makers how to do their job, rather it provides them a standardized pathway to avoid certain risks associated with retrofits. One such risk addressed by the ICP protocols is potential funding sources requesting standardized documents to increase their confidence in a retrofit. For the District, adopting the ICP Protocols means having a defined framework for shepherding members through the process of retrofit development and successful implementation.

This section reviews the ICP Protocols process and reasons for using it.

## PROCESS

ICP will work with the District to assemble existing EE standards and practices into a consistent and transparent process that promotes efficient markets by increasing confidence in energy efficiency as a demand-side resource. ICP Protocol should be thought of as a recipe book explaining how to do each project development step and document it. Once project development is complete, developers submit a retrofit proposal to an ICP quality assurance assessor, an engineering company like Arup, that would then review the project and certify it. This helps potential funders trust projects more by providing a boost in confidence from knowing a project was developed under a rigorous methodology. Additionally, the resulting documents help funders easily review and understand the project to facilitate improved discussions on funding opportunities. ICP recommends that building

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decision makers seeking retrofit financing contact members of the ICP Investor Network who are currently seeking certified and other high-quality projects to invest in. Adopting ICP Protocols helps the District provide additional assistance to building decision makers for developing a clear retrofit pathway, reducing risk, and increasing funding by connecting the EE community to make retrofits more feasible. It should be noted members cannot go directly to the Investor Confidence Project organization for this resource; it will be provided through the District.

## REASONS TO USE

ICP Protocols provide a much needed standardized roadmap to assess risk and deliver on retrofit results by predicting energy savings, optimizing performance, and monitoring the outcome of energy efficiency investments to generate financial savings and returns. It connects people to the tools required to do a retrofit, energy service agreements, potential opportunities for aggregating projects, insurance and various other things needed in project development. This can aid in accelerated project development with lower costs and financing terms. Additionally, neither funders nor building decision makers need to have a technical or engineering background. Funders gain confidence and assurance by buying into an investor-ready project and not being inundated with technical details they likely will not understand. For building decision makers, it avoids being overwhelmed with highly specific technical decisions.

*If you would like to learn about other solutions for overcoming energy efficiency retrofit challenges, this guidebook provides information relating to financial options, peer-to-peer collaborations, and various other existing resources. There is also a chapter about energy efficiency retrofits covering their characteristics, benefits, barriers, and success factors.*

## Toolkit

- To review a workflow of the ICP Protocols, go here:  
<http://www.eepformance.org/roadmap-to-iree-certification.html>
- To learn more about the Investor Confidence Project, check out their website at  
<http://www.eepformance.org/>.



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# Glossary

**Building Decision Makers:** People whose input is required when considering changes to a building. Some of these people may include but are not limited to building owners, managers, and unit owners/shareholders.

**Building Energy Exchange (BEEEx):** A nonprofit that connects New York City's real estate and design communities to energy and lighting efficiency solutions through education, exhibitions, technology demonstrations, and research.

**Community Preservation Corporation (CPC):** A leading nonprofit affordable housing and community revitalization finance company that utilizes its deep, strategic relationships with government agencies, local community groups, banks, and other lenders to create customized loan opportunities for their customers. They work hand-in-hand with clients to help maximize the potential of multifamily projects and their impact on the community.

**Debt Service Coverage Ratio:** A financial ratio that measures a company's ability to cover its current debts by comparing its net operating income with its total debt service obligations. It compares a company's available cash with its current interest, principle, and sinking fund obligations. A higher ratio is always more favorable than a lower ratio because it indicates there is more income available to pay for debt servicing.

**Efficiency Gap:** Potential of energy efficiency retrofits to improve energy use. The difference between the cost-minimizing level of energy efficiency and the level of energy efficiency actually realized.

**Energy Conservation Measure:** Any type of project conducted, or technology implemented, to reduce the consumption of energy in a building.

**Energy Efficiency Retrofit:** An energy efficiency retrofit is the modification or conversion of an existing process, facility, or structure that may improve energy efficiency or decrease energy demand. Energy-efficiency retrofits can reduce operational costs, especially in older buildings, and increase residents' comfort. Cost-effective retrofits achieve energy savings and reduced energy costs at a level sufficient to pay for upfront capital costs of undertaking the project within a time period equal to or less than the useful life of the project or equipment implemented. A real sustainable retrofit should consider economic vitality, environmental quality, and social equity.

**Internal Rate of Return:** A metric used in capital budgeting to estimate the profitability of potential investments. Internal rate of return is a discount rate that makes the net present value of all cash flows from a particular project equal to zero.

**Investor Confidence Project (ICP):** A nonprofit organization that defines a clear road-map from retrofit opportunity to reliable investor ready energy efficiency project. ICP has six commercial and

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multifamily energy performance protocols. ICP reduces transaction costs by assembling existing standards and practices into a consistent and transparent process that promotes efficient markets by increasing confidence in energy efficiency as a demand-side resource.

**Net Present Value:** Difference between the present value of cash inflows and the present value of cash outflows over a period of time. It is used in capital budgeting and investment planning to analyze the profitability of a projected investment or project.

**NYC Energy Efficiency Corporation (NYCEEC):** A nonprofit that finances energy efficiency, cogeneration, renewables, fuel conversions and demand response projects across all building types and neighborhoods. Provides building owners with the right financing solutions to meet their needs by partnering with investors and clean energy project developers.

**Peer-to-Peer Collaboration:** Intentional relationship between two or more organizations to exchange, share or co-develop resources, competencies, capabilities or knowledge to pursue mutually beneficial objectives while remaining legally independent organizations that exercise shared control over the collaboration.

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# Notes

1. MacWhinney, R., & Klagsbald, O. (2017, December). *Inventory of New York City Greenhouse Gas Emissions in 2016* (Rep.). Retrieved November 13, 2018, from New York City Mayor's Office of Sustainability website: [https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/GHG\\_Inventory\\_Report\\_Emission\\_Year\\_2016.pdf](https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/GHG_Inventory_Report_Emission_Year_2016.pdf)
2. Savings vary based on building type and preexisting conditions.
3. Refer to the NYC Greener, Greater Buildings Plan for more information: <http://www.nyc.gov/html/gbee/html/plan/plan.shtml>
4. Interviews include:
  - a. Clinton Hill Co-op represented by George Switzer, board member of Clinton Hill Co-op, and Jason Block, resident of Clinton Hill Co-op and Engineering Director at Steven Winter Associates, Inc. This is a 12 building, 500-unit co-op and a member of NYC 2030 District.
  - b. 96 Schermerhorn St. Co-op represented by Claudia Massa, board member of 96 Schermerhorn St. Co-op. This is a one building, 103-unit co-op and a prospective member of NYC 2030 District.
  - c. Asociacion de Inquilinos en la Lucha Housing Development Fund Corporation (A.I.L.HDFC) represented by Meral Bozkurt, board member of A.I.L.HDFC, and Noel Dent, building manager of A.I.L.HDFC. This is a one building, 35-unit co-op and a prospective member of NYC 2030 District.
  - d. Matt Golden the North America Director for Investor Confidence Project.
  - e. A sustainability manager of a large commercial and residential real estate company in NYC.
5. Thumann, A., & Woodroof, E. A. (2009). *Energy project financing: resources and strategies for success*. The Fairmont Press, Inc..
6. Xu, P., Chan, E. H. W., & Qian, Q. K. (2011). Success factors of energy performance contracting (EPC) for sustainable building energy efficiency retrofit (BEER) of hotel buildings in China. *Energy policy*, 39(11), 7389-7398.
7. Riggs, L. S., & Sanvido, V. E. (1991). *Managing retrofit projects*. Georgia Institute of Technology.
8. See Chapter 9, "Overcoming the Three Main Barriers to Energy Efficiency or "Green" Projects", in the book *Energy Project Financing: Resources and strategies for success* by Albert Thumann and Eric Woodroof for more information on how to convince others on the benefits of a potential retrofit.
9. See Chapter 6, "Selling Projects to Financiers", in the book *Energy Project Financing: Resources and strategies for success* by Albert Thumann and Eric Woodroof for more information on how to convince others on the benefits of a potential retrofit.
10. Kerstetter, M. (2012, June 7). *Bundling Solutions for Financing Building Energy Efficiency Retrofit Projects in Residential and Commercial Buildings* (Working paper).