

Capturing the Benefits of Energy Efficiency for Non-Profit Organizations

Opportunities, barriers and program
recommendations

Binnu Jeyakumar • Sara Hastings-Simon

November 2016

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Opportunities, barriers and program recommendations

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Executive summary

Alberta's energy system, like that of most jurisdictions in the world, is entering into a period of significant transition. Governments, stakeholders and the public are beginning to acknowledge the externalities of pollution and climate change, moving towards a cleaner and more democratic electricity grid. The world is beginning to acknowledge the need for energy equity for all. The non-profit sector is an important actor in this transition in its position as an enabler for a wide range of Albertans to be part of the energy transition. It is important that the sector be equipped with the right tools and level of support to participate effectively. Energy efficiency is one of the most cost-effective and accessible pathways for non-profit organizations to play a role in the transition.

The organizations and their beneficiaries stand to see financial, social and health benefits. However, we must acknowledge the unique opportunities and barriers non-profit organizations face in adopting efficient practices. One advantage is that while energy efficiency and conservation is often aligned with the values and visions of non-profit organizations, the reduction in energy costs also makes more funds available for core programs and needs. Energy efficiency can also be a source of jobs and additional income for non-profit organizations' beneficiaries.

Yet, non-profit organizations can be prevented from participating in energy efficiency programs due to a lack of access to start-up capital, staff shortages and a lack of incentive if they are not directly responsible for the energy costs. Many of these barriers are similar for other organizations, but frequently higher for non-profits. Steps can be taken to help the non-profit sector overcome these barriers.

Direct financial and implementation support

- A centralized agency should provide guidance to the sector and have resources to connect interested parties with funding sources, free or subsidized assessments, access to verified contractors and project management tools.
- In some cases, it would be effective for an entire upgrade to be directly funded and managed by an outside agency. It should be noted that low-income households, which are often served by a wide range of organizations, would particularly benefit from such an approach.

Financial incentives and enabling structures

- Financial incentives should be structured as grants or loans that are awarded prior to the start of the project.
- For loans, easy payment mechanisms such as the Property Assessed Clean Energy loans provided by local funders in the U.S. should be provided. Under these programs, property owners can make their payments as part of their property bills, with the added advantage of the costs of the upgrade remaining with the property after it is sold. It should be noted that in Alberta this would likely require an amendment to the use of Local Improvement Charge under the Municipal Government Act.
- Funders, bankers, utilities and energy service companies need to provide financial as well as project implementation support.
- Varied target groups will require differentiated education, such as specific outreach to low-income housing residents.

Systemic changes and investments

- To ensure long-term sustainability, energy efficiency needs to be integrated into our electricity system by providing the right set of regulations, targets, incentives and penalties to utilities and retailers.
- Investments in public transit, density planning and district heating can help lower energy-related costs for non-profit organizations and marginalized populations, while also achieving cost-effective reductions in energy consumption.

1. Introduction

The Government of Alberta has tasked the Energy Efficiency Advisory Panel with providing recommendations for the province's new agency, Energy Efficiency Alberta. The panel is seeking input from Albertans on the types of energy savings programs that the agency can deliver in the short and medium terms, while setting out the long-term vision. This document provides recommendations on the nature of efforts and incentives needed to enable the non-profit sector to participate in energy efficiency programs. It also highlights specific opportunities with regards to low-income households, which are served by the non-profit sector, and have often been specifically targeted by successful energy efficiency approaches.

The Pembina Foundation contracted the Pembina Institute to develop this report through conducting best practices research in other Canadian and U.S. jurisdictions and through consultations with non-profit organizations (NPOs) in Calgary and Edmonton. The consultations were made possible with the assistance of the Calgary Chamber of Voluntary Organizations and the Edmonton Chamber of Voluntary Organizations, and with support from the Calgary Foundation and the Edmonton Community Foundation.

1.1 The importance of engaging the non-profit sector

Energy efficiency programs are one of the most effective ways of reducing greenhouse gases¹, and hence for Alberta and Canada to reach their climate action targets. In order to ensure these programs reach a wide range of Albertans, it is important to motivate the non-profit sector's participation, as this sector works to spread awareness and improve the lives of many different groups. NPOs also cater to marginalized populations, for whom relief in costs associated with energy would have disproportionately large benefits. Particularly for NPOs which themselves have high energy costs, energy efficiency is critical for controlling their operations costs and protecting against volatile energy costs. In addition, climate change objectives,

¹ National Action Plan for Energy Efficiency, *Energy Efficiency as a Low-Cost Resource for Achieving Carbon Emissions Reductions*, prepared by William Prindle, ICF International Inc. (2009), ES-4.
https://www.epa.gov/sites/production/files/2015-08/documents/ee_and_carbon.pdf

protection of the environment, and conservation are often aligned with the vision and mission of these organizations.

NPOs' needs are different from those of industrial, commercial and residential consumers, and therefore require different supports. Even within the non-profit sector, different organizations have different needs. It is important to recognize the unique attributes within this sector in order to ensure that it can benefit from energy efficiency initiatives.

1.2 The energy efficiency and non-profit ecosystem

When considering how to best serve the non-profit sector, it is important to look at all of the actors in the system that interact with NPOs.

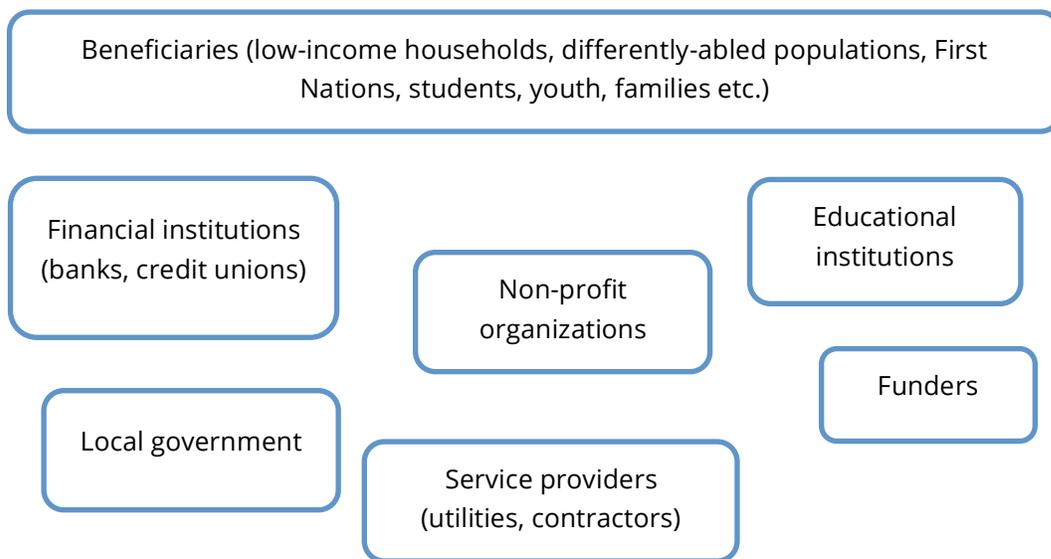


Figure 1: The non-profit and energy ecosystem

NPOs are not homogenous. They serve many different purposes, come in different sizes, and have different energy costs depending on their assets and operations. In Alberta, about 35% of NPOs have an annual budget of less than \$250,000, whereas just under 10% have a budget of over \$10 million.²

² Calgary Chamber of Voluntary Organizations, *2016 Alberta Nonprofit Survey*, 13. http://www.calgarycvo.org/wp-content/uploads/2016/06/ABSurvey_2016.pdf

NPOs serve a wide range of purposes, including the following:

- Sports and Recreation
- Religion
- Arts and Culture
- Development and Housing
- Education and Research
- Health
- Social services
- Fundraising and Volunteerism
- Advocacy and Politics
- Business, Professions and Unions
- Environment
- International

In addition, some organizations are responsible for their energy costs, whereas others might pay for them as part of a fixed rent. While those that own large facilities might be at a high-leverage point to start for efficiency programs, the needs of other types of NPOs should also be addressed.

2. Benefits of energy efficiency

2.1 Benefits to non-profit organizations

Energy efficiency programs can help NPOs achieve their core goals in many different ways.

Financial benefits

Financial benefits from building energy efficiency (EE) programs are most relevant to organizations that incur energy costs in terms of heating and electricity bills. This is true for property owners as well as renters. Often the largest savings are for those organizations responsible for a lot of property, such as providers of affordable housing, owners of sports and arts facilities, schools, community associations and municipalities. Organizations with old and inefficient buildings can especially benefit from EE programs. Organizations that have significant costs associated with vehicle fuel can benefit from fuel efficiency standards and other driver behaviour initiatives that result in more efficient or less travel.

The cost savings generated by using less energy can be used to address an organization's possible cash flow issues and other pressing financial needs.

The introduction of an economy-wide carbon levy in 2017 will increase the per-unit-of-energy cost. However, by reducing total energy consumption, organizations can offset the financial impact of a carbon levy while protecting themselves from volatile conventional energy costs.

NPOs can also venture into the provision of energy efficiency services and create additional revenue generation streams for themselves. Examples include capacity-building organizations that provide training on how to reduce their environmental footprint, and employment organizations that can train and recruit youth to conduct energy audits.

The reduction in energy bills can help direct more of the funds available to core programs so that the organizations may more effectively fulfill their mandates.

Non-financial benefits such as contribution to mission and values

Many NPOs and their staff also value sustainability principles and have a desire to minimize the environmental impact of their activities. Reducing energy consumption,

particularly in a province where both heating and electricity are primarily supplied from fossil fuels³, reduces the carbon footprint of the organization and can also mitigate air pollution impacts. In addition, energy conservation can often be complementary to the organizations' mission and values. For example, for non-profits working on the root causes of poverty, energy literacy can be part of their financial literacy programs and can help address poverty issues.

Strategic and creative design of energy efficiency initiatives can also result in other social benefits that are often valued by organizations and staff:

- It can help build a sense of community
- It can create a more inspiring workspace

2.2 Benefits to non-profit beneficiaries and participants

Non-profit organizations with a social mandate cater to a wide range of people with varying needs. There are opportunities that energy efficiency programs can create for the clients and participants. By ensuring that they participate in energy efficiency opportunities, non-profits will be better equipped to bring these programs to their clients and can also be seen as a channel to reach a broader population.

Financial relief

About one in six households in Alberta live in energy poverty; that is, they are unable to maintain a reasonable level of energy consumption necessary for their health and well-being at affordable costs. Low-income households face disproportionate energy costs.⁴ The All One Sky Foundation states: “As a fraction of net (disposable) income, an average low-income household in 2011-12 spent over seven times more on home energy services than an average household in the highest income quintile; and over three times more than the average household in Alberta.”⁵

So a reduction in energy costs can provide disproportionate relief to low-income households and enable them to direct their limited income to other necessities.

³ Alberta Energy, “Electricity Statistics.” <http://www.energy.alberta.ca/electricity/682.asp> (accessed September 1, 2016)

⁴ R. Boyd and H. Corbett, *Energy Poverty — An Agenda for Alberta* (All One Sky Foundation, 2015). <http://allonesky.ca/wp-content/uploads/2015/12/Energy-Poverty-An-Agenda-for-Alberta-Dec-6-2015.pdf>

⁵ Ibid.

Income generation opportunities

Energy efficiency programs are well suited to be delivered by small businesses which can employ marginalized populations, or which can be started by the under-employed. With an increase in EE incentives, there should be an increase in demand for auditing services and installation and upgrading services. Such services can employ at-risk youth and others who experience barriers to employment such as new Canadians, people with disabilities, First Nations and so on, and provide them a livelihood as well as opportunity for skills training.

Social benefits

In addition to the relief in energy related costs, EE programs can also accrue several less tangible but equally important social benefits. Low-income households in particular often have accommodations with poor insulation and heating and ventilation systems, resulting in detrimental impacts to health and wellbeing, especially among vulnerable groups such as children and the elderly.⁶ A reduction in energy costs can lead to less stress, as they are able to pay their reduced bills on time.

Energy efficiency design and upgrades often result in more inviting communal spaces, which can help build stronger and more supportive communities.

⁶ International Energy Agency, *Capturing the Multiple Benefits of Energy Efficiency* (2014), 97.
http://www.iea.org/publications/freepublications/publication/Captur_the_MultiplBenef_ofEnergyEfficiency.pdf

3. Barriers for non-profit organizations

Despite the many benefits that energy efficiency initiatives can provide, there are significant barriers to adoption for non-profits. These include barriers faced by other sectors that can be even more difficult for an NPO or require different solutions, and barriers unique to the sector.

Financial barriers

Energy efficiency upgrades that require a sizeable capital investment are a challenge for NPOs as they have very limited cash flows and access to capital. In addition, with the low energy prices in Alberta and the fact that most energy efficiency projects have a long payback period, it is difficult for NPOs to see a return on investment. The cash flow challenge also means that rebate-type structures that provide relief after an efficiency project are less helpful for NPOs.

Most foundations and other sources of non-profit funding don't have money available for energy efficiency projects. This is not yet a recognized priority among funders. NPOs also often have to pay out of their own funds for the energy audit required to determine the scope for the grant application.

Furthermore, it is challenging for NPOs to obtain approvals for loans.

Insufficient knowledge and capacity

There are several knowledge and capacity gaps for NPOs whose core programs are often not directly related to energy, including:

- Lack of knowledge about what the baseline energy consumption is and how much there is to be saved
- Overwhelming array of options available for energy efficiency projects, which can be impractical for an NPO to evaluate
- A lack of trusted sources of information and energy auditing services
- Scarcity of NPO role models that have done efficiency projects
- Inability to prioritize energy efficiency when operating in a resource-strapped environment with more urgent issues

Ownership, control and agency issues

While there are many non-profits that own their facilities, there are also many that rent. Renters have less control over the upgrades that can be done. If the energy bill is included in the rent, they also have less incentive to reduce their energy consumption.

On the other hand, some NPOs, such as those providing affordable housing, may have an arrangement whereby their tenants or beneficiaries have control over their energy consumption but are not directly paying for it. Those NPOs are unable to pass the cost of energy to their tenants, so tenants don't have an incentive to reduce energy use.

4. Recommendations for energy efficiency programs

A set of key principles can guide the design of programs to enable NPO participation. Some of the principles may pull in different directions; these will require innovative solutions to ensure they are addressed.

Provide adequate support to enable organizations to participate easily

- The non-profit sector faces issues such as availability of capital and staff time.

Leverage other actors in the system and set up self-sustaining incentive structures

- In order to ensure the programs are sustainable, the government must not just provide support, but also create structures that allow other institutions such as banks and utilities to provide offerings as well.

Reach a wide range of Albertans and sub-sectors of the non-profit sector, with particular consideration for marginalized and rural populations

- The sector is diverse; a variety of types of organizations in different parts of the province will require different forms of support. Programs must be designed to be accessible to all in the sector.

With these criteria in mind, the following are recommendations for the design of energy efficiency programs in Alberta to ensure effectiveness in the non-profit sector.

4.1 Financial support and incentives

The programs need to look beyond rebates in order to accommodate the financial structure of non-profits and to ensure that the programs are self-sustaining:

- Government financial incentives need to be structured as grants because NPOs cannot get tax rebates. Even rebates that are not associated with taxes provide very limited value to NPOs as they require the organizations to procure capital funding, which can be impossible or can cause extreme stress on their restricted cash flows.
- Different loan structures need to be developed that are easily accessible to NPOs and that mitigate the financial risks. In Alberta, there are not many loan options available for a municipal government to leverage. To change this, we need to amend the Municipal Government Act such that the existing legal mechanism,

called Local Improvement Charge (LIC),⁷ can also be used for energy efficiency upgrades.⁸ One successful example of such a scheme is the Property Assessed Clean Energy (PACE) loan that can be provided by authorized government bodies as upfront capital for residential and commercial property owners. The payment is made as part of the property bills. PACE loans are also tied to the property rather than the owner, and thus de-risk the investment. While most NPOs do not pay property taxes, such a mechanism could still be adapted to fit their needs.

- Funders need to be educated and incentivized to provide grants and other financial support for energy efficiency.
- Energy service companies (ESCOs) and institutions such as schools can sign Contracts of Performance. The ESCO takes on the risk, funds and executes energy efficiency projects to meet the owner's needs with the guarantee that the cost savings generated can help pay for the project over the period of the contract. After the contract period has ended, the owner can accrue the savings that continue to be generated.
- Utilities can provide similar services along with rebates. The government can incentivize utilities to provide financial support through several tools, as discussed in Section 4.4.
- For specific organizations and particular beneficiaries such as low-income households, it would be most effective for the entire upgrade to be directly funded by the government. For such provision of free upgrades, there is much existing data that suggest focusing on weatherization for the best return on investment.

4.2 Implementation support

Non-profit organizations and their beneficiaries have very limited resources, capacity and time available to invest in energy efficiency initiatives. There are many steps that can be taken to assist them:

- Setting up an agency or organization that provides a complete suite of support services: procuring funding, organizing initial assessments, building capacity of

⁷ Local Improvement Charges are levies that are added to property taxes for specific improvement projects in the area. They enable payments to be paid over a long period of time, and for the charges to be attached to the property rather than the individual.

⁸ Sara Hastings-Simon, "The key to unlocking energy savings and new jobs," *Pembina Institute*, Sept. 9, 2016. <https://www.pembina.org/blog/key-to-unlocking-energy-savings-and-new-jobs>

- staff, liaising with contractors to finalize the scope and manage the installation, monitoring performance, and assisting with communications
- Implementing all of the above tasks at no cost for targeted low-income households and specific non-profit organizations
- Providing adequate access for organizations and residents in rural areas by working with existing partner agencies that are established in these areas

4.3 Communication, education and information sharing

NPOs repeatedly express a lack of knowledge and awareness of what to do about energy efficiency as well as the magnitude of benefits associated with different projects.

Many different types of data are needed:

- Energy consumption trends and cost savings at a system level as well as individual level – both before and after incentives and standards are put in place
- Case studies and examples of NPOs successfully implementing and benefitting from efficiency projects
- Primers on how our electricity system and pricing work
- Examples and tools for analysis of total costs of EE projects over their life
- Evidence of the socio-economic benefits of energy efficiency

The manner in which information is shared is also important to ensure that the right people can access it and make appropriate decisions:

- A centralized site with simplified information on the different types of EE projects, sources of funding, lists of contractors, cost calculation tools, etc.
- Education through energy billing, banking and ESCO services
- Education through umbrella organizations such as Calgary Chamber of Voluntary Organizations, Edmonton Chamber of Voluntary Organizations, and Volunteer Alberta
- Segmented education to reach different target groups, such as specific outreach to low-income housing tenants
- Leveraging existing capacity-building programs, such as financial literacy programs

4.4 Integrating energy efficiency into the electricity system

Currently there is no direct incentive for actors in the electricity system, other than consumers, to invest in energy efficiency. Reducing energy usage can relieve congestion in the grid, reduce the peak load, and even offset the need for new generation. Eventually, all of these benefits translate to reducing the rate increase for consumers. There are a few different ways to incentivize⁹ the entities in an electricity system, particularly utilities:

- Performance target incentives could be used to reward utilities for meeting energy efficiency targets through either penalties for non-compliance, or through return of a percentage of the program costs to them
- Savings accrued by the ratepayers could be shared with the utilities
- Enabling a rate of return on EE investment that is roughly equal to that of investments in generation

4.5 Standards, regulations and targets

Financial and market mechanisms can be very effective in implementing EE programs. However, for some intractable challenges such as the agency barrier (energy user not responsible for energy costs), mandatory standards, regulations and targets are helpful in creating behaviour change and encouraging/enabling innovation.

- While the government has set a target for renewable generation (30% by 2030), there is no target set for energy efficiency. We need ambitious and clear targets such as the European Union's target of reducing their energy consumption projections by 20% by 2020.
- Appliance standards and building codes are constantly being updated as new technologies emerge. Alberta can implement near-zero emission standards for buildings to achieve the efficiencies met in countries like Germany, where, even with higher energy rates, the household bill is comparable to that in Canada.
- Some risks or penalties should be associated with non-compliance. For example, non-compliant buildings could be denied approvals or subjected to delays with respect to applications submitted to the planning department.

⁹ American Council for an Energy-Efficient Economy, "Incentivizing Utility-Led Efficiency Programs: Performance Incentives." <http://aceee.org/sector/state-policy/toolkit/utility-programs/performance-incentives> (accessed September 1, 2016)

- Legislated and regulated requirements should be coordinated between all three levels of government — federal, provincial and municipal.

4.6 Systemic investments in related services and infrastructure

There are also several investments that can be made by the government that, while not directly targeted at NPOs, can assist with reducing their energy consumption and with pursuing their social, environmental and economic mandates.

- Public transit and transit-oriented development can drastically reduce gasoline consumption and associated costs, while at the same time making mobility more accessible and equitable.
- Higher density planning can reduce the infrastructure and resources needed to maintain heating, lighting and water services.
- District heating is the use of a centralized boiler to heat several neighbouring buildings and houses. It is widely used in many jurisdictions to reduce the use of natural gas and to conserve costs.

Conclusion

Non-profit organizations have a significant role to play in Alberta's emerging clean economy. The sector is keenly interested in this issue as is evident from the participation rates at the energy efficiency workshops the Pembina Institute held in Calgary and Edmonton. In order to engage the sector effectively, adequate support and capacity building is needed.

That support can be in the form of direct financial assistance such as easily accessible grants and loans for efficiency retrofits through a centralized agency. This funding can come from different levels of government, funders, banks, credit unions, and so on. Segmented and targeted education and outreach on energy efficiency must also play a role in creating an enabling environment. Finally, systemic changes in the electricity, transportation and development sectors are critical in ensuring the long-term sustainability of efficiency initiatives.

Investments in these efforts will help the non-profit sector participate in energy efficiency programs; it will also increase the reach of programs for many sections of Alberta's population and help with the broader movement towards clean energy.

Appendix A. Case studies of successful non-profit experiences

A.1 Lao Family Community Center — St. Paul, Minnesota

The Lao Family Community Center upgraded their building for energy efficiency with support from the utility Xcel Energy and the Metro Clean Energy Resource Team, which one of several state-wide teams established to connect individuals and their communities with resources for community-based energy programs. The Xcel Energy Foundation provided the centre with a subsidized energy audit as well as project planning and implementation support. The centre also benefited from Xcel Energy's One-Stop Efficiency Shop, which provides a free lighting audit, substantial rebates, financing options, a pool of qualified contractors and oversight of the project. They were able to do the following improvements, accruing annual savings of \$3,100.

Table 1: Impact of energy efficiency actions at the Lao Family Community Center

Energy efficiency action	Estimated annual savings (USD)
New thermostats and office move	\$1,500
New windows	\$300
Water heating improvements (completed within 2 hours): aerators, pipe insulation, water temperature	\$140
Power factor correction	\$920
LED lights	\$240
Total	\$3,100 (15% of total energy costs)

The centre became a role model as it demonstrated the use of energy saving tools to other NPOs in the community.

A.2 Efficiency Nova Scotia

Nova Scotia Power, the provincial utility, has the mandate to procure the most cost-effective energy, which in Nova Scotia is energy efficiency (3 cents/kWh, compared to 12 cents/kWh for energy generation). Efficiency Nova Scotia is a provincial program that was initially funded through an efficiency fee on power bills (approximately \$50/year for an average household).¹⁰ The program provides education and technical assistance, subsidies for scoping studies and retrofits, financing through interest-free payments on the power bill, and a database of contractors. It also started a program in 2011 for low-income households, which received free energy assessments and several upgrades at no cost, with a focus on insulation and draft proofing.

The overall program has reached 190,000 Nova Scotians, created 1200 full-time jobs, and served 1,300 low-income households that saved \$600/year as a result.

The program also established a specific energy efficiency coordinator¹¹ for non-profit organizations who provides advice on retrofits and behaviour change initiatives. The coordinator connects NPOs with energy auditors, helps in understanding the audit results, and provides access to grants and loans. Fifteen non-profits benefited from the program in Phase 1.

A.3 Bickerdike Redevelopment Corporation — Chicago, Illinois

The Bickerdike Redevelopment Corporation is a member-based non-profit community development organization, by and for low- and moderate-income people. Its core objectives include providing quality affordable housing as well as promoting economic development by creating and preserving jobs. The corporation retrofitted three 1930's era buildings by improving insulation and air sealing, and replacing furnaces. This resulted in 19% savings in gas consumption from 2011 to 2012, a 10% reduction in overall utility expenses and a 65.5-tonne reduction in greenhouse gases.¹²

¹⁰ This surcharge was removed in 2015.

¹¹ Ecology Action Centre, “Helping Not-for-Profit Organizations Save Energy.” <https://ecologyaction.ca/energychallenge>

¹² Elevate Energy, *Non-Energy Benefits of Energy Efficiency Improvements* (2013).

When the tenants were surveyed after the upgrade, a third of them said that they felt “more confident and less stress paying rent and utility bills.”¹³

Michael Burton, the asset manager, stated: “As a community-based, not for profit organization, we have a double bottom line of creating financially sustainable projects and serving low-income families who have limited means to pay rent. Energy retrofits allow us to fulfill both of these goals. When tenants have savings, they’re more stable in their homes and are able to reallocate those savings to other household necessities. It also positively effects our operations because rent is more likely to be received on time and it also reduces our expenses as we no longer have to service and maintain old, out-dated furnace systems.”

A.4 YouthBuild — U.S.

YouthBuild is a national training program in the U.S. for at-risk youth, with a mandate to provide jobs training, environmental stewardship and poverty reduction. Youth are trained in construction and energy efficiency upgrades, they build affordable housing, and they earn certification that enables them to work outside of the program. It is largely funded by the U.S. Department of Labor. In 2014, 9,000 youth were trained, 61% of which went on to post-secondary education or became gainfully employed.

¹³ Ibid.