# Ecology Ottawa Briefing Paper

# Pay as You Save (PAYS) Financing of Energy Efficiency and Renewable Energy Building Improvements in Ottawa

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**Summary**

Ecology Ottawa is proposing that Ottawa's new Mayor and 2010 Council exercise leadership in Ottawa by promoting and implementing Pay as You Save (PAYS) financing for residential and small business property owners who wish to make major energy efficiency and renewable energy improvements that are hard to finance because of long paybacks.

This financing would not be a loan in the conventional sense as it would be attached to the property itself, rather than the property owner. The financing would be paid back through a temporary additional levy on the property along with property taxes, and secured by a lien on the property. The term of the financing would be set so that annual payments are less than or equal estimated annual savings. The next owner of the property continues to pay off the financing as he or she gets the ongoing energy savings. This financing does not amount to a subsidy to the homeowner.

The City administered program would attract and assure prospective participants that energy efficiency savings will result and that accredited energy auditors and contractors will provide quality improvements to the property. The energy savings attained would make a major contribution to achieving the legally binding efficiency targets that must be met by Hydro Ottawa by 2014. At the same time, the city would see the quality and energy efficiency of its building stock improve.

The program would be cost neutral to the City with all costs being recovered through the financing repayments. This type of financing is in place in many municipalities in the United States. The Halifax Regional Municipality (HRM) has recently become the first Canadian municipality to adopt a PAYS program.

Ecology Ottawa proposes that the City of Ottawa be the first municipality in Ontario to introduce PAYS financing for energy efficiency and renewable energy improvements.

We propose that the City of Ottawa make housing and building energy improvements a priority and include an allocation in the 2011 budget to develop a PAYS program design for full implementation in 2012. This budget allocation would be used to:

⇒ Review expert opinion on how to implement a PAYS financing program including the University of California *Guide to Energy Efficiency and Renewable Energy Financing Districts for Local Governments* and experience elsewhere, including the Halifax Regional Municipality and United States municipalities such as Babylon NY, Berkeley CA, San Francisco CA, and Sonoma CA.

⇒ Exchange ideas and experience with other Canadian cities planning to use PAYS including Halifax, Vancouver and Toronto.

⇒ Meet with the Government of Ontario to make regulatory changes that would permit a PAYS program in Ontario.

⇒ Prepare a staff report outlining the components and design of an Ottawa PAYS program, working closely with Hydro Ottawa to make the program contribute to the utility's Conservation and Demand Management targets.

⇒ Engage and consult with Ottawa communities and businesses on the PAYS concept and the improvements it should cover, making use of Ecology Ottawa Community Energy Groups that will be set up in 2011 in several Ottawa neighbourhoods.

⇒ Investigate sources of financing the City could access to finance the PAYS program, including City contingency funds, Municipal borrowing sources (Province or Federation of Canadian Municipalities), financial institutions, etc.

⇒ Prepare a plan to implement a full PAYS program in Ottawa in 2012, positioning it as complementary to Hydro Ottawa's conservation and demand management (CDM) programs.

This initiative would also improve the City's sustainable housing stock by encouraging building energy efficiency upgrades and renewable energy installations. Linking these capital and environmental improvements to the property rather than the individual owner is the key to the concept.

## The PAYS Concept

- Pay as You Save (PAYS) financing helps property owners (residential and eligible small business) finance major energy efficiency and renewable energy improvements that have longer pay-back periods. These improvements are difficult to finance through regular loans without significant up-front investment by the property owner
- An Ottawa PAYS program would therefore focus on improvements with 5 or more years pay back as they are harder for property owners to make the commitment and finance themselves using conventional financing. This type of program is an ideal complement to shorter term financing by electric and gas utilities or financial institutions.
- Unlike conventional borrowing, the loans are paid back by the property owner arranging for a temporary additional levy to be added to their property taxes. This is similar to the way municipal Local Improvements are paid for.

- The key feature of PAYS financing is that the "loan" stays with the property when it is sold. The current owner only makes payments on the loan while they reside in the property and future owners continue to pay off the loans as they benefit from the energy efficiency savings. So current homeowners don't face the risk of being unable to recoup their investment when they sell.
- Some changes to the *Ontario Municipal Act* may be necessary to permit municipalities to use PAYS in Ontario, and to allow for flexible and efficient implementation. The necessary changes have been identified and are outlined below.
- Ottawa city staff has investigated the PAYS concept for several years and are therefore well versed in its use. There is an opportunity for the new Mayor and the next Council to build on this knowledge and make Ottawa a leader in this initiative.
- Experience in the United States shows that a PAYS program can be designed to be "cost neutral" so there is no cost to the city or to taxpayers generally. The city charges an interest rate to property owners to cover the city's borrowing and administrative costs. The risk of loss is very low since, in the case of a default, the lien on the property would cover any potential losses—just like occurs with unpaid property taxes now.
- Limits apply to the amount of eligible expenditures to ensure that the loans do not take the property owner's total debt to unsustainable levels. Participating homeowners are not subsidised. The additional levies only apply to participating properties, so other rate payers do not face increased taxes.
- The program can also be designed to be financially sound and not undercut Ottawa's strong credit rating. The city can use existing investments, borrow modest amounts to finance the program, or design the program with private sector lenders who would provide the financing and assist with administration. Borrowing by the City would be secured by the cash flow from the additional property tax payments and could therefore be off-balance sheet—i.e. not part of the city's general debt.
- PAYS financing could also be used by property owners to finance renewable power projects that have a contract with the Provincial renewable energy Feed-In-Tariff (FIT) Program. This would help the City enhance its environmental and sustainable development objectives.
- There are concrete steps the next mayor and Council could take, early in their term, to commit to a PAYS program, learn from Halifax and United States experience, prepare an implementation and evaluation plan, solicit enabling changes to the *Municipal Act*, and ensure Ottawa is at the forefront of this important initiative in Ontario.

A history of PAYS financing, its use in the United States, the UK and Canada is provided in Appendix 1.

PAYS financing also embodies the idea of home stewardship. Private property owners are not solely responsible for the decision and actions needed to improve the

environmental sustainability of their properties. Nor should current owners take on the full risks of improving environmental sustainability of their properties, if the benefits accrue partly to subsequent owners. Municipal governments must also take on a stewardship role in encouraging sustainable housing for the benefit of the community as a whole. The principles of green home stewardship are described in Appendix 2.

## Implementing PAYS in Ottawa

City of Ottawa staff has been researching the use of the PAYS concept since 2005. At the City Council meeting of July 13th, 2005, a motion was debated with respect to the "authority to include building efficiency and renewable energy upgrades in the list of works that may be undertaken as local improvements". However, on advice of senior staff the motion was withdrawn without a vote.

In 2007 or 2008, City staff prepared a draft report on the feasibility of a PAYS program using the Local Improvement Charge process in Ottawa, but this report has not been published.

In 2007 the City of Ottawa Planning Department performed an initial investigation and conducted a citizens' survey to gauge interest (SES Research, 2007). This study of homeowners revealed the following:

- 90% of homeowners believed reducing their carbon footprint was important
- 70% were interested in installing an alternative energy source
- But only 40% were likely to do renovations of $10,000 or more over the next 5 years (without a PAYS program)
- 73% supported the City offering an enviro-loan program and 43% would participate in the program if it was available.

The study also showed that 76% of homeowners felt that an energy-upgraded house would be easier to sell, although paradoxically 55% felt an enviro-loan attached to their house would make it more difficult to sell.

## Recommended Steps by the New Mayor and Council

We recommend that the following steps be taken to implement a PAYS program in Ottawa:

1. Make housing and building retrofit as a priority in city planning and make PAYS financing a key component of this plan, becoming the first City in Ontario to do so.
2. Include a small allocation in the 2011 budget to develop a PAYS program design. This budget would cover:
   - ⇒ Review expert opinion on how to implement a PAYS financing program including the University of California *Guide to Energy Efficiency and Renewable Energy Financing Districts for Local Governments* and experience elsewhere, including the Halifax Regional Municipality and United States municipalities such as Babylon NY, Berkeley CA, San Francisco CA, and Sonoma CA.

⇒ Exchange ideas and experience with other Canadian cities planning to use PAYS including Halifax, Vancouver and Toronto.

⇒ Meet with the Government of Ontario to make regulatory changes that would permit a PAYS program in Ontario.

⇒ Prepare a staff report outlining the components and design of an Ottawa PAYS program, working closely with Hydro Ottawa to make the program contribute to the utility's Conservation and Demand Management targets.

⇒ Engage and consult with Ottawa communities and businesses on the PAYS concept and the improvements it should cover, making use of Ecology Ottawa Community Energy Groups that will be set up in 2011 in several Ottawa neighbourhoods.

⇒ Investigate sources of financing the City could access to finance the PAYS program, including City contingency funds, Municipal borrowing sources (Province or Federation of Canadian Municipalities), financial institutions, etc.

⇒ Prepare a plan to implement a full PAYS program in Ottawa in 2012, positioning it as complementary to Hydro Ottawa's Conservation and Demand Management (CDM) programs.

**Provincial Enabling Measures Needed to Allow an Ottawa PAYS program**

The following changes in the Ontario *Municipal Act* or the *City of Ottawa Act, 1999* would enable municipalities to use property-tax-based financing for energy efficiency and renewable energy upgrades more easily. The City of Ottawa should advocate for changes that:

- Allow municipalities to finance property improvements on individual private properties and assess them against property taxes (currently it is not clear whether a "local improvement" can be interpreted this way).
- Specify that these improvements can include energy efficiency upgrades to the buildings on the property and the installation of renewable energy technologies, with rationale as to why these are deemed improvements (environmental, etc).
- Allow the financing of the improvement and subsequent assessment against property taxes to be a voluntary decision by the individual property owner taking advantage of the program—essentially a contract between the homeowner and the city.
- Ensure that the assessment against the property is secured through a lien on the property payable to the municipality ahead of mortgages. The municipalities can use these liens as security for off-balance sheet borrowing, if they wish, to finance the improvements.
- Allow municipalities to streamline the approval process so that a bylaw is not needed for each improvement, and the application process is simple and straightforward.
- Make it clear that municipalities can recover all costs of administering the financing process through the assessment charges to the property owner.

**Program Administration**

Experience with Property Assessment Clean Energy (PACE) financing in the United States indicates that a municipality like the City of Ottawa would need to set up an administration process to cover the following aspects of a PAYS program (University of California, 2009):

- ⇒ General management, oversight, and coordination
- ⇒ Marketing the program and responding to public requests for information
- ⇒ Processing and approving applications
- ⇒ Collecting appropriate documents and recording the property tax liens
- ⇒ Property tax administration - levying special tax or assessment
- ⇒ Customer service and assistance
- ⇒ Program evaluation

The City would need to designate senior staff that would be ultimately responsible for the program, oversee its development and management, and report progress to the City Council. City financial and property tax staff would be trained to prepare the improvement agreements/property tax liens, make payments to participants, and service any City borrowing for the program. The remaining functions could be met by City staff or contracted to a Program Administrator. This would include marketing the program to potential participants; the processing applications (checking property titles, tax records, verifying eligibility, assessing savings estimates, final agreement with property owner, etc.); and overseeing the quality of the improvements carried out.

The home or business energy audit, and the getting quotes for the improvements from certified contractors, would be the responsibility of the homes and businesses applying for the financing.

The University of California Guide (University of California, 2009) estimates the cost of operating a typical PAYS type program that provides financing for 800 property improvements averaging $15,000 (total $12 million) would cost less than 5% of total financing, and break down as follows:

| | |
|---|---|
| Program Design | $30,000 |
| Program Administration | $160,000 |
| Finance Services | $370,000 |
| Total | $560,000 |

This cost would be recovered through the interest rate set for the financing. The University of California Guide also provides case studies on how PACE programs are run in several US cities.

## Program Design

A PAYS program implemented by the City of Ottawa would need to have the following design components:

1. A list of eligible improvements focusing on major energy efficiency and renewable energy upgrades that can be hard for property owners to finance, and that have longer payback periods. A decision will be needed on whether to allow loans for 100% of the value of upgrades.
2. Eligible properties. Ideally, the program would cover all residential units, whether owner occupied or rented. Small business property could also be covered. Some consideration should be given to not covering expenditures that are already eligible for other federal and provincial incentives.
3. An application process and guide. This process would accept and evaluate applications from interested homes and businesses; arrange for an audit; evaluate the efficiency improvements requested; inspect the property; and review contractor quotes, before proceeding to a financing agreement. An application fee could be charged. The process would ensure that only projects providing for reasonable energy efficiency improvements receive financing. A clear application Guide for property owners will be required
4. Financing limits for each property. A minimum expenditure, for example $5,000, should be set to make the long term financing worth while and cost effective. So should a maximum of say $20,000-25,000 per property, in order to ensure funding is not focused on only a few properties and to protect property owners from cash flow problems. Canada's mortgage market has not suffered the problems that the United States have experienced where homeowners have been encouraged to take on excessive amounts of debt, leading to problems for them and for mortgage lenders.
5. A sound assessment process. The City would assign implementation of the PAYS program to an operational department and set up procedures for assessment of each project and carrying out of the improvement work:
    - Assessment of retrofit options on behalf of the City by EcoEnergy energy advisors. These advisors would work under contract for the City with the cost added to the retrofit cost itself
    - A list of certified contractors to carry out the retrofit. The homeowner would obtain bids from certified contractors and select one in cooperation with the City
    - The City would use building inspectors with additional training to ensure quality
6. Participant assessment process. A simple screening process of participant mortgage obligations should be used to ensure that PAYS financing does not increase the risk of mortgage default.
7. A cost neutral low-risk program design. The PAYS program should not cost the city money. The interest rate charged by the city to property owners should cover its borrowing and administration costs, reflect longer-term lending rates, be

adjustable periodically as interest rates change (like a mortgage), and not be a subsidy to homeowners. The terms should be designed so the city is not financially exposed as borrowing and lending rates change.

Because PAYS "loans" are a manageable size, and are being paid off through higher property taxes which are a lien on the property, the risk of default for the city is very low. And provided the limits suggested above are in place, the impact on borrowers' capacity to pay should not be adversely affected.

8. A financial structure designed to preserve Ottawa's good credit rating. The city of Ottawa could finance this program in various ways. While the city of Ottawa could conceptually finance a program of this sort through normal budget processes, it is most likely the city would borrow to make what are, effectively, longer-term loans to property owners. Borrowing could be either done directly or via third parties.

9. An annual audit and evaluation process. The city auditor should audit the program early in its operation and provide an evaluation to council, who can refine it based on experience.

10. Marketing and promotional campaign. It is not apparent to most people that improvements in energy efficiency and renewable energy can pay for themselves though this type of program where the payments to the City are more than compensated for by savings on utility bills.

    Property owners must be made fully aware of the how the program works and the financial aspects of participating in the program. Property owners are choosing to increase the total of their loans against their property and effectively paying the loan back while they own the property, with interest, through higher levies as part of their property taxes. It will be especially important that adequate disclosure of financing terms be made to them.

11. Management, Staffing and Training Plan. The management and administration of the PAYS program can be either contracted in full or in part to a Program Administrator or assigned to existing City departments. In most cases this will mean the training of existing property tax, finance, and public relations staff and the addition of new staff as needed.

# Appendix 1: History and Experience with Pay as You Save Financing

## History of the Property Tax Financing

The first jurisdiction to use the property tax system to finance energy related improvements was the Government of the Yukon in 2004 that allowed property owners to finance grid extensions to their residences in this way. Subsequently, the Pembina Institute was contracted by BC Hydro, Climate Change Central Alberta and Natural Resources Canada to determine how this concept could be used to finance long pay back energy efficiency improvements on a pay as you save basis using the municipal Local Improvement Charge mechanism. Two reports were published in 2004 and 2005 outlining how this PAYS approach could be used in each province (Pembina Institute 2004/2005). The LIC financing approach was subsequently promoted across North America as an option for financing green buildings (Persram, 2007).

The PAYS concept has since been adopted widely in the United States under their Property Assessment for Clean Energy (PACE) programs, and is the cornerstone of the proposed Green Deal program in the United Kingdom. The City of Halifax is the first Canadian jurisdiction to use the PAYS concept for energy efficiency or renewable energy improvements. The City of Vancouver plans to use PAYS to finance housing retrofit starting in 2011.

## PAYS in the United States – Property Assessment Clean Energy (PACE)

The first jurisdiction in the USA to introduce a PAYS mechanism was the City of Berkeley (Berkeley, 2007). In November 2006, 81% of Berkeley voters endorsed ballot measure G, which established an aggressive greenhouse gas (GHG) reduction target of 80% by 2050 and directed the City to develop a plan for achieving it. Berkeley city staff developed the concept for the Berkeley Financing Initiative for Renewable and Solar Technology (FIRST) to enable residents and businesses to finance energy improvements to their buildings. The pilot launched in November 2008 and Berkeley property owners reserved the $1 million of initial funding within 10 minutes of opening the application website. This included 38 residential projects with an average project value of $28,000. Funding comes from the city issuing debt, in the form of "micro" bonds for each project. They are purchased by the city's financial partner. Each bond is secured by all of the special taxes paid by participating property owners.

FIRST's major objective was to eliminate the two major financial hurdles for residents installing solar electric and solar water systems, the high upfront cost and the possibility that those costs will not be recovered by the time the property is sold.

How successful was the initial implementation? After the initial pilot a formal survey was performed with the following results (Berkeley, 2009):

> ALL (100 %) of respondents stated that Berkeley FIRST had a ***significant influence in their decision to install PV*** panels.
>
> Participants were mostly motivated by environmental and energy conservation rather than economic reasons.

The most important reasons for participants choosing Berkeley FIRST financing over other options were:

- Simple application process & attraction of participating in a pilot program (40% ranked very important each)
- Reasonable interest rate & benefits of transferability of loan to new owner of house (30%)
- ***None*** of the respondents expected their overall house resale value to drop after PV installation, despite the increased property tax.
- Most participating households earned $100,000-150,000 per year
- 90% of the Participants who responded were satisfied with the program and 70% found the application process '*easy*' or '*very easy*', which was a key program attraction.

Since then, the Berkeley program has expanded to a state-wide California FIRST consortium to tap into efficiencies of scale and expand the list of eligible expenditures to include energy efficiency improvements. (Berkeley, 2010). The PACE (Property Assessed Clean Energy -- www.pacenow.org) project was created to promote the Berkeley conceptual model. Sixteen states have already having enacted legislation to enable programs to proceed, and 1,300 municipalities have shown an interest (Persram, 2010). As of early 2010 there were six active PACE programs in place: Berkeley, Sonoma County, San Francisco, Palm Desert, Yucaipa, in CA, Boulder County, CO; and Babylon, NY (PACE, 2010). Results to date show a respectable track record (Greentechmedia, 2010).

An excellent guide for municipalities on energy efficiency and renewable energy financing based on the PACE experience across the US has been produced by the University of California, Berkeley (University of California, 2009). The City San Francisco Green Finance Program features an excellent video on how to participate in its PACE program: https://greenfinancesf.org/overview

The National Commission on Energy Policy (NCEP, 2009), a bipartisan group of 20 American leading energy experts, has widely endorsed the PACE model. In 2009, the White House led an inter-agency working group to develop the PACE Policy Framework which established clear guidelines to protect consumers and minimize risk for lenders and borrowers. Vice- President Biden has endorsed the Berkeley FIRST model as a national strategy for clean energy.

Despite the popularity of PACE programs in the U.S., federal housing authorities have recently expressed concerns that PACE could pose added risks to private sector mortgage lenders because the energy loans are a first lien on the property. They thus reduce the amount lenders can collect from mortgage borrowers who default. This issue has effectively put all residential sector PACE programs on hold in the US. Commercial sector PACE programs continue to operate, however.

Canada's housing market and financial systems are in much better shape than those in the United States, therefore these mortgage concerns are not as applicable here and can be dealt with in the

design of the program. Canada has not historically allowed as high loan-to-value-ratio lending as does the U.S.

As noted below, a PAYS program like PACE in Canada should have limits on the size of the loan. It should also consider a limit on offering PAYS to properties where the result would be to take the owner's overall lending against the property, relative to its value, to unsustainable levels.

**PAYS in the United Kingdom**

In the United Kingdom, the previous government piloted a Pay As You Save program in 500 homes (cost of £4 million) as part of its new Warm Homes initiative. The pilot was managed through the Energy Savings Trust (UK Department of Energy and Climate Change, 2010). Homes are eligible for up to £10,000 in energy efficiency improvements paid off over 25 years under the program.

The new UK government plans to use a pay as you save approach in its recently announced Green Deal program, but it not yet clear whether this will be through energy bill or property tax payments (Green Deal, 2010).

**Canadian PAYS Initiatives**

Several municipalities investigated the PAYS concept following the publication of the Pembina Report in 2006, including Dawson Creek, Vancouver, Abbotsford, London, Toronto, Oakville, and Ottawa (see below), but none put a program in place. The main barriers appeared to be: lack of provincial legislation under Provincial Municipal Acts to permit the approach to be used; sources for the revolving financing needed; and, the need to train staff in a new program (Pembina Institute 2004/2005).

Three provinces, Ontario, BC and Manitoba are currently considering enabling measures—essentially legislation to permit municipalities to put PAYS programs in place.

The Halifax Regional Municipality (HRM) is the only Canadian municipality to put a PAYS program in place – using it to finance the installation of residential solar water heating (Halifax Regional Municipality, 2010). Halifax has its own municipal charter and has asked the Province of Nova Scotia to amend this charter to "enable security of financing of energy conservation or environmental improvement of a property via lien authority" (Halifax Regional Council, 2010).

The staff report to Council sets out recommendation as to how the PAYS program should be designed and implemented:

- HRM should act as financial administrator and contracting agent.
- The source of financing should be FCM Municipal Funds.
- The financing period should be set so that property owner payments are equal to estimated savings.
- The business model will be cost neutral with property owner payments and interest set to cover all HRM costs and borrowing charges.

- The full scale project is estimated to generate $50 million of investment, $3 million of energy savings and 300 local jobs.
- Manageable key challenges will be legislative ability, liability, community uptake, financing, and HRM implementation capability
- Consultations with key stakeholders should take place in cooperation with Conserve Nova Scotia

Vancouver which also has its own charter plans to use the PAYS concept in its Bright Green Future 2020 Action Plan, starting with the financing of home retrofit in 2011 (Vancouver, 2010).

In 2011, the *Ontario Home Energy Rating Act, 2008* and the mandatory provisions of the *Green Energy Act, 2009* will go into effect, requiring home sellers to have an energy audit conducted on their homes and an energy rating provided to prospective buyers. This will further sensitize homeowners to the benefits of making improvements in the energy efficiency of their homes. The Appraisal Institute of Canada, (the association of professionals who appraise properties) in its RENOVA report, indicated that energy-efficient upgrades are considered among the top payback improvements, along with kitchen and bathroom renovations.

## Appendix 2: Principles of Green Home Stewardship, Energy Efficiency and Renewable Energy Upgrades

Ecology Ottawa predicates this position on the following principles:

- Energy efficiency and renewable energy upgrades are fundamentally different from all other environmental actions; in the long run rather than costing individuals or the economy money they result in net savings. "Energy efficiency isn't just a free lunch, it's a lunch you are paid to eat."—Amory Lovins
- Certain energy efficiency and renewable energy upgrades are characterized by significant financial investment up-front and it can be a long time before payback of the investment is realized.
- Municipal property owners can be considered the stewards of their property during the period of their residency which averages only about 5 years.
- Property owners have the full right to decide what environmental improvements they wish to make.
- Property owners should be responsible for the costs of green home improvements only during the period of their residency, thus reducing the risk of short term losses.
- Owners that take on PAYS financing will see that their utility bill savings resulting from the energy efficiency or renewable energy improvements will more than meet the yearly increase in levies on their property.
- The municipal government too has a continuing interest in the stewardship of a property beyond the residency period of the private owner.
- The municipality can ensure the continuity of stewardship of a property by establishing the framework for a PAYS program, and its administration through assessment based interest and principal repayments.
- Risk of default is low because PAYS financing would represent only a small fraction of the property value (i.e. $10,000 – 40,000 whereas average Ottawa property value is $324,000), and the loan would be a lien on the property. Normal recovery mechanisms for unpaid property taxes would apply as with a Local Improvement Charge.

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