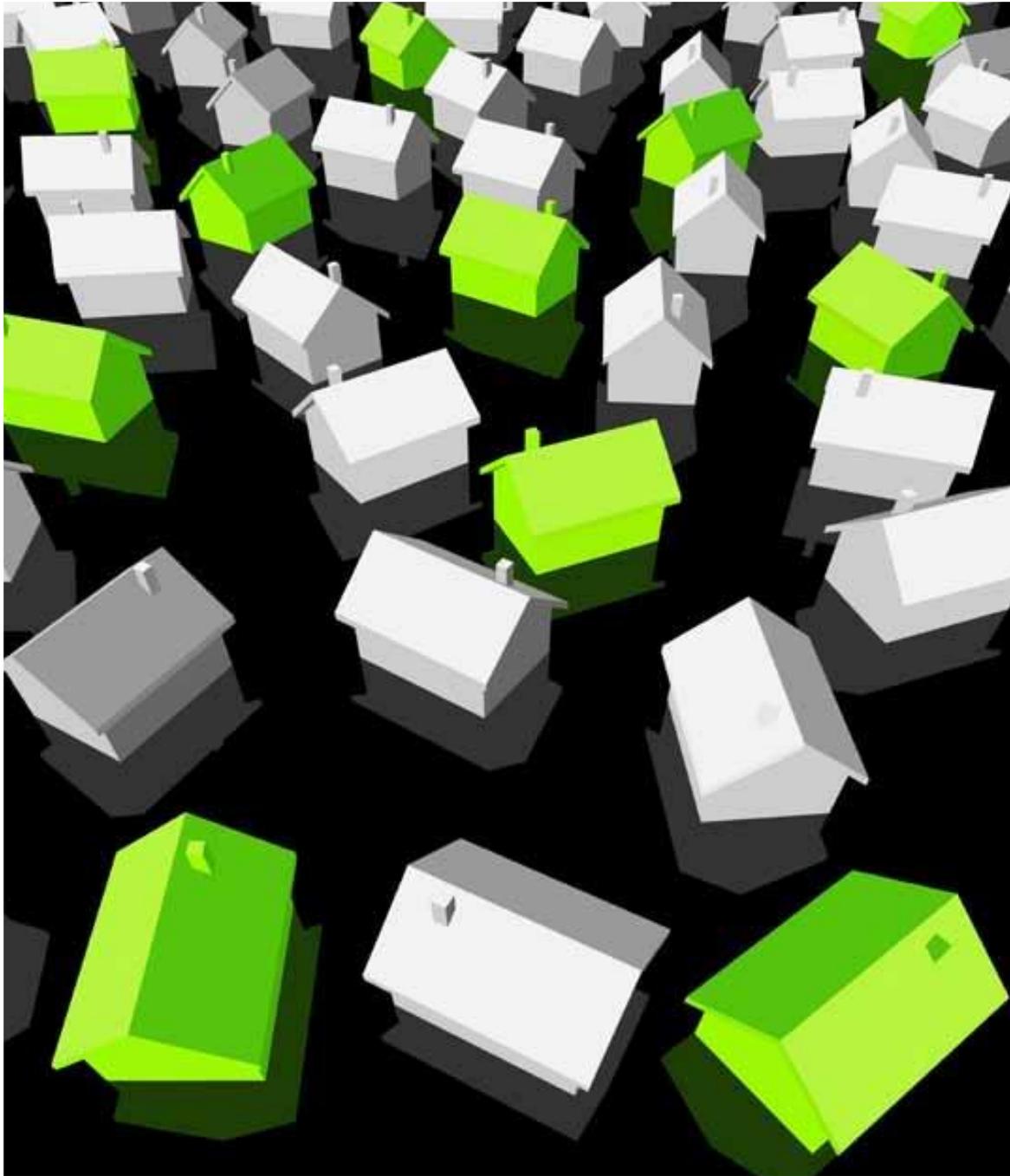


PAY AS YOU SAVE-BC



PAYS-BC Utility Program
The key to unlocking consumer savings



Introduction

Pay-as-you-save (PAYS) is a financing model that enables homeowners to invest in energy efficiency improvements through loans that are repaid on their utility bills. PAYS programs are designed so that energy bill savings are roughly equivalent with the loan repayment, thereby offsetting the energy efficiency investment cost to home or building owners. The Ministry of Energy and Mines and Responsible for Housing (the ministry) is working together with key parties – including British Columbia residents and utilities – to develop a regulation that will set requirements for BC utility PAYS programs. PAYS in BC (PAYS-BC) will unlock consumer energy savings through investments in energy efficiency – building on the experience of other jurisdictions while recognizing British Columbia’s specific utility and energy conservation opportunities.

Recent amendments to British Columbia’s *Clean Energy Act* (the *Act*) added provisions that require provincial energy utilities (such as BC Hydro and Fortis BC) to provide financing for energy efficiency upgrades. The ministry is responsible for regulations under the *Act* and is presently working towards an energy efficiency financing regulation that will set requirements for B.C. utilities to offer PAYS programs to eligible customers.

The PAYS-BC regulation will address eligibility, energy assessments, contractor qualifications, disclosure requirements and debt or loan limits to allow for effective implementation of energy efficiency financing programs by utilities in the coming years. By facilitating energy efficiency improvements in homes and buildings across the province, PAYS-BC will assist families to save on energy costs while supporting government objectives to conserve electricity and reduce provincial greenhouse gas emissions.

Pay-as-you-save (PAYS) – is a financing model that allows home or building owners to undertake energy efficiency or renewable energy retrofits with no upfront payment, and to pay the costs over time on their utility bill. Payment responsibility can be transferred to new building occupants or owners when the first borrower moves away. This approach unlocks energy efficiency savings for consumers – enabling ongoing energy savings for families who may not be able to afford the upfront costs for energy efficient retrofits.

The ministry is seeking comments and suggestions from British Columbia residents regarding PAYS-BC prior to finalizing the regulation. The current consultation relates to PAYS-BC for single-family homes. In subsequent years, the regulation will be expanded to allow for PAYS-BC offers to cover residential strata and rental units, as well as commercial buildings. There will be separate consultations prior to launching PAYS-BC for these types of buildings.

This paper provides background information relevant to PAYS-BC, a description of ministry proposals and how to provide input on the proposals, as well as a table with information on PAYS programs in other jurisdictions. Information about the consultation, including links to download copies of this paper and the associated response form, is posted on the ministry’s [PAYS-BC website](#).

Comments should be received before March 30, 2012. Following review and consideration of the comments, the ministry intends to finalize the regulation for initial implementation of PAYS-BC for residential housing in summer 2012.

Background

The pay-as-you-save approach

Existing energy efficiency programs focus largely on the provincial government and utilities providing rebates and incentives to encourage home owners to undertake energy efficiency improvements. Home owners are responsible to cover the remaining cost of energy efficiency improvements. The initial cost of improvements is justified through reduced energy costs over time. Government and utility subsidies help by reducing the up-front cost of improvements.

For many British Columbians however, there are several financial barriers to installing energy efficiency measures. As well as upfront cost, people worry about the length of time required for “payback” in savings – i.e., the potential of moving to a new residence before they have recouped their capital outlay for the upgrades to their home. Many people are also unaware of the options available for energy efficiency or about what measures are already in place in their home.

The PAYS approach to energy efficiency is structured around business and homeowner financial needs, building on experience with other energy efficiency strategies. The approach enables financing of capital improvements and expenses over time through savings on utility bills. Rather than relying on government or utility incentives, PAYS is a energy efficiency improvement financing mechanism provided by utilities.

PAYS-BC would assist households in recovering the cost of energy efficiency retrofits through a loan from a BC energy utility (BC Hydro or FortisBC) that is repaid through savings on their utility bills. PAYS-BC would also allow customers to purchase energy efficiency products or retrofits with no upfront payment, and to pay for the efficiency measures during their period of occupancy or ownership. The innovative aspect of PAYS-BC is the opportunity to transfer payment responsibility to new building occupants when the original borrower moves or transfers ownership. Participants would also have the option of paying out the balance owing upon departure if they so desire.

The PAYS-BC regulation will expand the number of British Columbians who can benefit from improving their homes and businesses by addressing two barriers that exist in an incentive-based approach: (1) an owner who cannot afford the up-front cost for the improvements cannot access the incentive; and (2) owners who believe they will not recoup their investment as they do not foresee staying in their current dwelling long enough to recover their costs through energy savings. At current energy rates, payback periods for energy efficiency retrofits can be from five to fifteen years, and many home owners relocate within a shorter time period.

Utilities will work within the parameters of the regulation to deliver PAYS-BC to eligible customers. A variety of options could be offered to participants, from a basic retrofit package funded entirely from expected energy savings to more ambitious retrofits that may require some initial investment by home owners. PAYS-BC for strata units, rental units and small businesses will be implemented in the years following initial introduction of the program for single-family homes in the 2012/13 fiscal year.

Experience in other jurisdictions

The PAYS approach was developed by the Energy Efficiency Institute in the United States. Over the past decade, PAYS programs have been successfully implemented in jurisdictions across North America and in the United Kingdom. See the table in the final section of this paper for further details and links.

Government and ministry goals

British Columbia has legislated targets to reduce carbon emissions by 33 per cent by 2020 and 80 per cent by 2050. Also, the *Clean Energy Act* sets a legislated target of displacing 66% of incremental electricity demand in the province through conservation by 2020.



PAYS-BC will help achieve these targets through energy efficiency investment in existing buildings. PAYS-BC builds on British Columbia's leadership in the green economy – supporting families, creating jobs and taking action to reduce our carbon footprint.

PAYS-BC enables BC families to save money on their energy bills while creating jobs across the entire province. Local businesses in BC communities that could benefit from PAYS-BC include home building and renovation contractors, energy advisors, and manufacturers and distributors of energy efficient equipment.



Key milestones in the development and implementation of PAYS-BC

British Columbia has a history of innovation, leadership and success in energy conservation programs. The [BC Hydro PowerSmart](#) program and [Fortis BC PowerSense](#) initiative, as well as the provincial [LiveSmart BC](#) Efficiency Incentive Program and [BC Energy Efficient Buildings Strategy](#), provide a range of information and incentives intended to encourage adoption of energy efficiency measures. (Click on the hyperlinks for further information about the programs or legislation.)

2007	<p>BC Energy Plan – target of meeting 50% of incremental energy demand through conservation by 2020</p> <p>Greenhouse Gas Emissions Reductions Targets Act – target of reducing GHG emissions below 2007 levels – by 33% by 2020 and 80% by 2050</p>
2008	<p>BC Energy Efficient Buildings Strategy – set energy efficiency targets and actions for commercial, industrial and government buildings, and incentives for families to upgrade homes and businesses</p> <p>LiveSmart BC – provincial incentive program for residential buildings</p>
2010	<p>Clean Energy Act – 66% of incremental electricity demand through conservation by 2020</p> <p>LiveSmart BC – provincial incentive program for small business</p>
2011	<p>Clean Energy Act amendments to allow utility financing</p> <p>Consultations on PAYS-BC implementation for single-family homes</p>

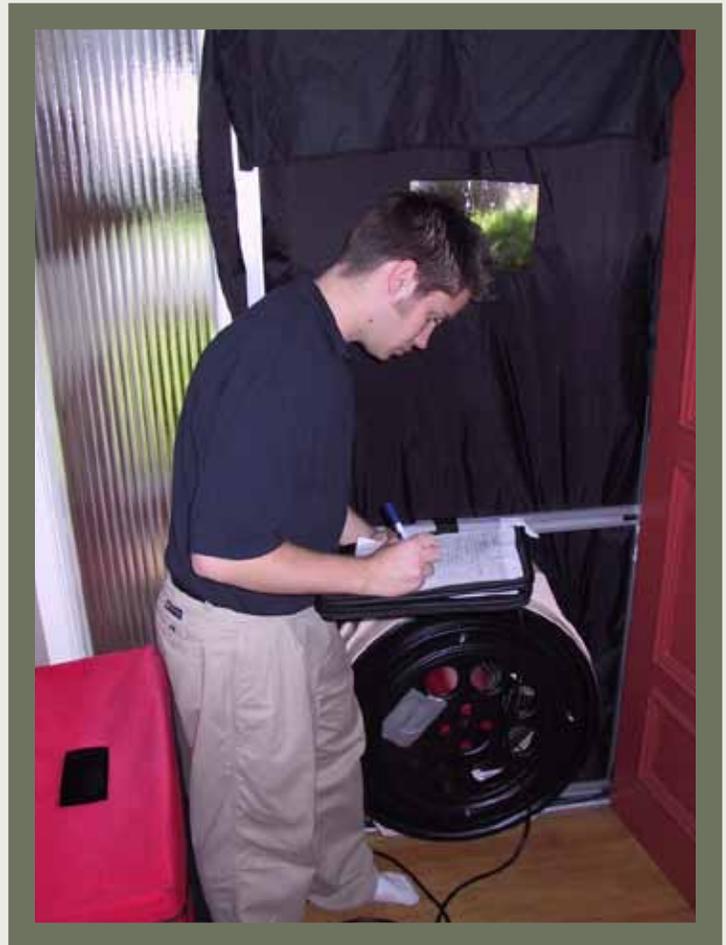
Anticipated Next Steps

2012-13	<p>Regulation approved for residential PAYS-BC utility programs implementation</p> <p>PAYS-BC launched for single-family homes</p> <p>Consultation on PAYS-BC regulations for rental/strata buildings</p>
2013-14	<p>Consultation on PAYS-BC regulation for commercial buildings</p>

Sample Case Study

John and Susan and their three children live in a home built in 1946 with a gas furnace, electric hot water heating, limited insulation and draughty single pane windows. On top of their mortgage payments, John and Susan pay about \$200 in energy bills every month. They are concerned about having a comfortable home to live in, and rising energy costs, as well as conserving energy to protect the environment. However, they don't have the spare savings, or other sources of credit, to spend on major renovations or home upgrades. Also, with their growing children, John and Susan anticipate needing to move to a larger home within the next five years.

Looking for an understanding of the potential costs and benefits of various options for improving their home, family comfort and health – without “breaking the bank” – Susan finds a local provider of home energy assessments after seeing a news article in the local paper. The energy assessment costs \$150 (which may be paid for through PAYS-BC when John and Susan decide to participate in the program). Their independent assessor, Wendy, uses the established [EnerGuide Rating System](#) to determine the energy efficiency performance of their home, including an EnerGuide rating, and recommendations for energy retrofits that will reduce energy consumption. Reviewing the assessment report with John and Susan, Wendy shows them where air is leaking out through their attic, basement, walls and around doors and windows – and notes that their water heater will soon fail or need to be replaced. The energy assessment report shows, based on modeled energy consumption of the current house and the same house after proposed upgrades, that if John and Susan improve their insulation, replace their windows and upgrade their water heater, they can save an estimated \$60 per month on their energy bills.



John and Susan decide to proceed with the renovations and arrange for a contractor approved by their utility to complete the work – with no up-front cost.

continued on next page

Every month, John and Susan make a \$50 payment to their utility on the loan for the energy efficiency improvements. However, as they are saving \$60 a month in reduced energy consumption, their total utility bill is \$10 a month lower than before the improvements. As well as spending less money every month, John and Susan have likely increased the market value of their home and the comfort of their indoor living environment – with fewer drafts and a new better performing water heater.



In five years, John and Susan sell their home to Alex and Shelley. Under a PAYS-BC utility program, unlike conventional loan programs, the loan obligation can remain with the property on sale. The energy efficiency improvements and PAYS-BC financing agreement are set out in real estate offer and sale documents. Alex and Shelley know the improvements that were made, monthly repayment cost and estimated energy savings from the retrofits. In reviewing the figures, Alex and Shelley find that the improvements and net monthly savings are an additional sales feature, making the home more attractive to purchase.

John and Susan move out and end their PAYS-BC loan obligation. Alex and Shelley move in and begin paying the PAYS-BC charge on their utility bill – as well as realizing the energy efficiency cost savings and improvements in home comfort initiated by John and Susan five years previously.

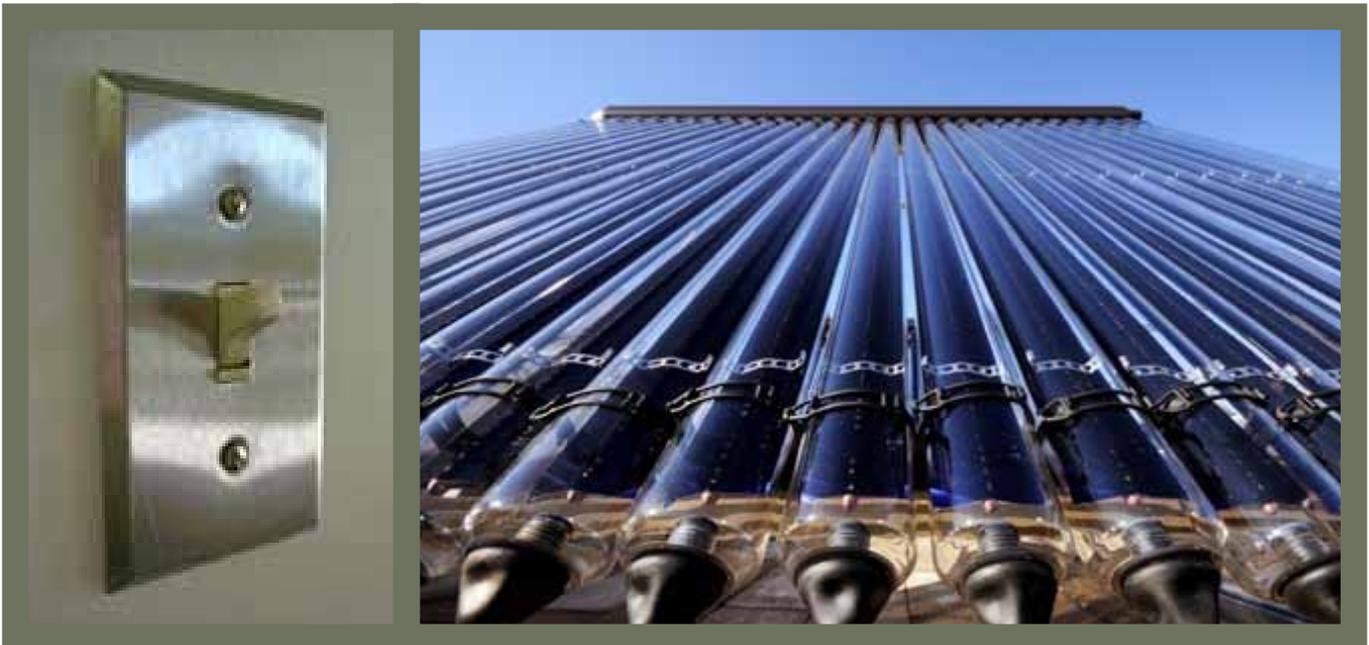
PAYS-BC: How does it work?

	Steps	Key Consultation Questions
ELIGIBILITY	1. A home or building owner expresses an interest in pay-as-you-save-BC	What eligibility requirements should be set for participants under a PAYS-BC utility program?
ENERGY ASSESSMENT	2. An energy assessment of the building or unit is undertaken	What energy assessment system(s) should be used to rate eligibility for financing under a PAYS-BC utility program?
AGREEMENT	3. The consumer decides which energy efficiency measures to install	What kinds of energy retrofits should be eligible for funding under a PAYS-BC utility program?
INSTALLATION	4. A qualified installer undertakes the improvements in the building or unit	What qualification and bonding or warranty provisions should be required for contractors and installers under a PAYS-BC utility program?
REPAYMENT	5. Home owner or occupant pays agreed amount on their monthly utility bill	What basic terms and conditions should be included under a PAYS-BC utility program agreement?
PAYOUT OR TRANSFER	6. If an owner moves, the financing agreement is paid out or transferred to the new owner	What disclosure and transfer requirements are needed if the owners of a property change?

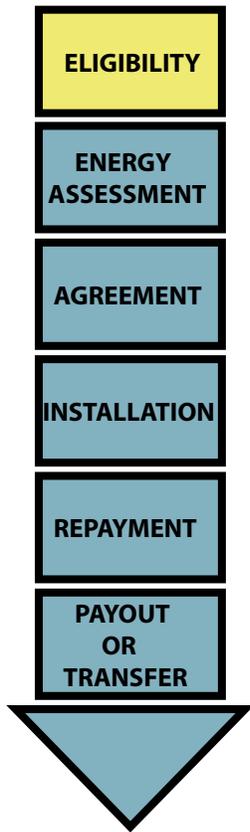
PAYS-BC design elements and ministry intentions

The ministry is seeking comments and suggestions from British Columbians as the PAYS-BC regulation is developed. This section of the paper describes key questions that need to be addressed in designing the regulation, along with the ministry's proposals for each question.

The topics and detailed questions have been compiled in a separate response form for those interested in providing comments and suggestions to the ministry – available in a number of formats on the ministry's [PAYS-BC website](#). Please submit responses to any or all of the questions below by March 30, 2012.



Question 1: What eligibility requirements should be set for participants under a PAYS-BC utility program?



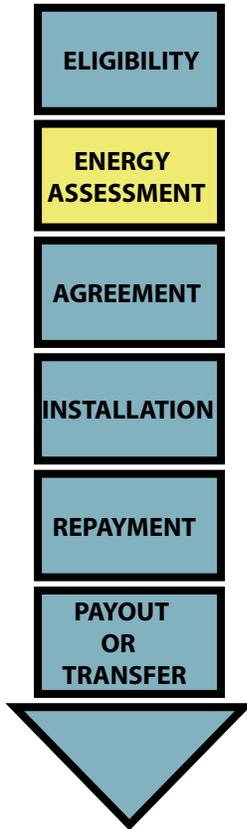
Description of topic: Participants in a PAYS-BC utility program need to: (1) be assured that they are not assuming an undue financial burden through their utility payments for energy efficiency improvements to their home; and (2) not be at undue risk of defaulting on payments.

The program's intent is for energy efficiency improvements financed under PAYS-BC to result in lowered net utility bills for homeowners – i.e., the PAYS-BC utility loan payment will be lower than the cost of energy that would have been used in the home without the improvements. It should be noted however, that a variety of factors can cause actual energy savings to vary such as changing weather patterns, an increase in the number of people in the household and changing energy use patterns.

Also, PAYS-BC utility loan payments for the same location could involve different borrowers over a 10-15 year amortization period. Utilities need to be able to evaluate the credit worthiness of participants to minimize default risks over the repayment period of the loan.

Ministry Proposal: The ministry supports allowing wide access to the program for utility customers in good standing who live in eligible homes and buildings. The ministry is proposing to work with utilities to establish eligibility criteria for PAYS-BC participants (e.g., credit record) that would be commensurate with the degree of customer risk and the financing risk to the utility (amount/length of the loan).

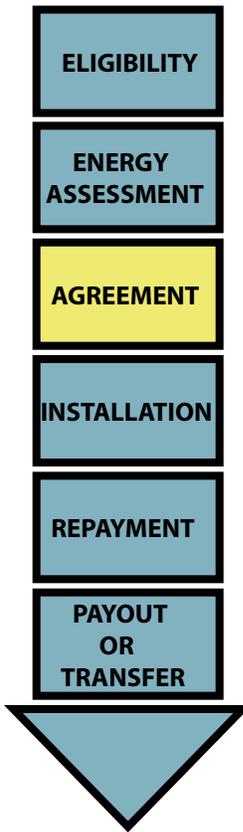
Question 2: What energy assessment system(s) should be used to rate eligibility for financing under a PAYS-BC utility program?



Description of topic: Establishing a consistent, robust and credible energy assessment and rating system is an essential foundation of PAYS-BC. The system should accommodate a wide variety of building types, identify retrofit options, support long term financing and investment actions, and incorporate emerging knowledge and technologies. Energy assessments also need to be conducted to agreed standards by qualified advisors and supported with quality assurance and compliance mechanisms.

Ministry Proposal: The ministry proposes using the Canadian [EnerGuide Rating System](#) (ERS) as the foundation for residential financing programs with some potential refinements to ensure estimated savings are as accurate as possible given BC's unique climate and high penetration of energy efficient equipment and appliances. ERS has been deployed in BC for over a decade and is used in the [LiveSmart BC](#) home retrofit incentive program. Natural Resources Canada is revising the ERS in an effort to make it more accurate, user-friendly and affordable for families. The new ERS is expected to be launched in late 2012.

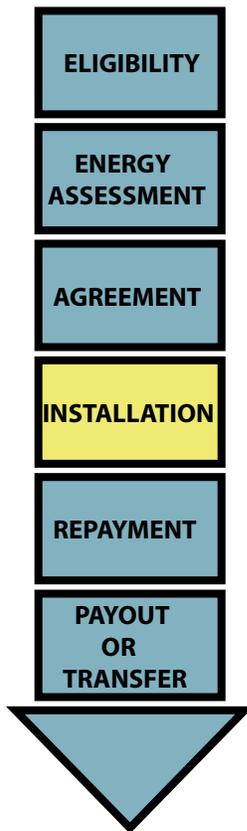
Question 3: What kinds of energy retrofits should be eligible for funding under a PAYS-BC utility program?



Description of topic: There is a wide variety of retrofit measures funded under PAYS programs in other jurisdictions that could be considered for inclusion under PAYS-BC utility programs. Recent BC provincial and Canadian federal energy efficiency initiatives have focused on building envelope, insulation, hot water and heating improvements. Lighting retrofits or energy efficient appliances could also be part of PAYS-BC. Specific measures under distinct PAYS-BC utility programs (e.g., BC Hydro PAYS-BC, Fortis PAYS-BC) may also be set – based on the focus and priorities of the involved energy utilities and supporting government agencies, and target home owners.

Ministry Proposal: The ministry is seeking comments and recommendations on the types of retrofits that could or should be funded under PAYS-BC financing. At minimum, improvements will be non-portable and attached to the property (e.g., heating, ventilation and air conditioning (HVAC) system, windows, insulation). For reference, energy efficiency incentives available under the [LiveSmart BC](#) program fund a range of building envelope (including insulation and windows), space heating, water heating and ventilation improvements.

Question 4: What qualification and bonding or warranty provisions should be required for contractors and installers under a PAYS-BC utility program?



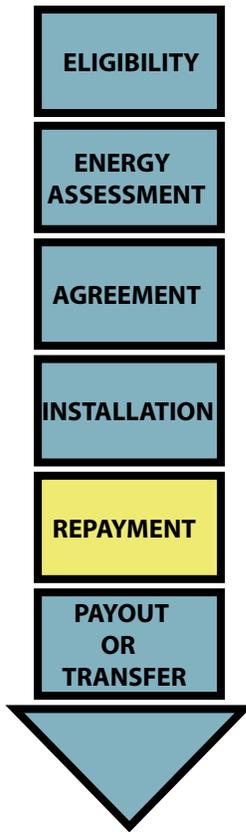
Description of topic: Assuring that retrofits or other energy efficiency measures are safe and effective will be essential to the success of PAYS-BC. Qualification requirements for installers and contractors, as well as bonding and warranty provisions, should provide quality assurance while not precluding participation of smaller businesses or individual homeowners capable of undertaking the work. A quality assurance program for installation should: ensure that energy savings are achieved; minimize risk of breakdown or failure; and protect consumers if a breakdown or failure of the work and/or equipment does occur.

Ministry Proposal: The ministry's goal is to ensure that energy efficiency improvements undertaken through PAYS-BC are installed in a safe and effective manner. If feasible, the ministry will allow homeowners to install their own improvements – as long as they are able to comply with all health, safety and energy efficiency regulations and any other applicable legal requirements, as well as apply appropriate quality safeguards to protect future occupants.

To protect future occupants all improvements funded under the financing program, whether completed by a contractor or by the homeowner, would be required to be covered by a bond or warranty.

One means of assuring that improvements undertaken by a homeowner (who is not an accredited or approved contractor) meet warranty requirements could be having the work reviewed or approved by an accredited energy assessor, installer or municipal building official.

Question 5: What basic terms and conditions should be included under a PAYS-BC utility program agreement?



Description of topic: PAYS-BC participants who are committing to a long-term financing agreement to install and pay for energy efficiency improvements in their homes deserve strong and transparent consumer protection measures. The initial participant (who commits to the energy efficiency improvements and repayment schedule) – as well as any future owners or occupants of the home – need to know the terms of the PAYS-BC agreement in plain language. Appropriate information would include the repayment amount on each energy bill, the term of the loan, a detailed listing and description of the installed energy efficiency improvements, warranty provisions, and identified repair or maintenance responsibilities.

Ministry Proposal: The ministry is proposing the following consumer protection measures as minimum requirements for PAYS-BC:

Eligible PAYS-BC participants must hold an account with and be aware of utility billing and privacy practices.

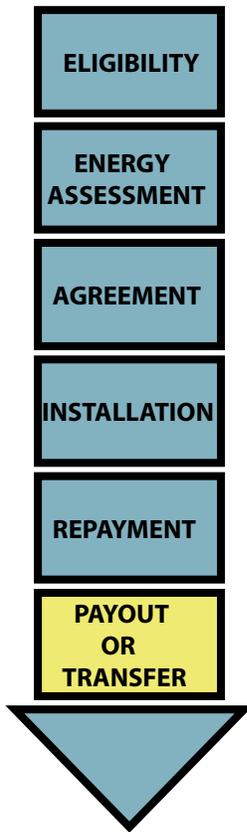
Energy efficiency measures must be identified by an accredited and independent energy assessor.

Improvements must be undertaken by an approved contractor or approved by an accredited official.

Monthly charges, including interest rates, must be explicitly noted on utility billings of PAYS-BC participants.

The presence of a PAYS-BC agreement must be properly disclosed on legal documents involving potential transfer of ownership and/or payment obligations (e.g., real estate offer and sales agreements).

Question 6: What disclosure and transfer requirements are needed if the owners of a property change?

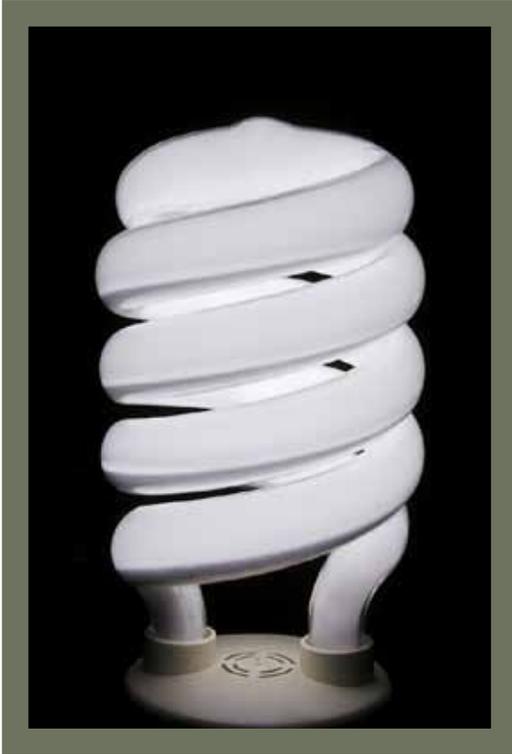


Description of topic: Both original and subsequent owners and occupiers of buildings with PAYS-BC improvements will benefit from the ongoing energy bill savings. One of the key characteristics of PAYS-BC is that it allows owners to transfer payment to an eligible new owner, if so agreed by both parties, as an alternative to paying out the remainder of the energy efficiency installation costs when the property is sold.

It will be important to communicate PAYS-BC information – about the identified energy savings, the improvements funded by the financing program and the obligations for payment through utility charges – to new occupants before property ownership changes. All home buyers should understand and agree to their obligations on assuming the PAYS-BC financing agreement before finalizing the home purchase. Disclosure and transfer obligations, as well as options for pay out, should be stated in clear and transparent terms. Common formats for disclosure support understanding and fair negotiation of sales agreements.

Ministry Proposal: As much as possible, the ministry would like to rely on standard forms that are part of the existing real estate transaction process, such as the real estate disclosure form and/or MLS listing. To ensure full transparency, the ministry will work with local governments to assess the feasibility of other disclosure mechanisms (e.g., listing PAYS-BC obligation on property tax).

Question 7: When and how will rental, strata and commercial building owners and/or tenants be eligible for PAYS-BC?



Description of topic: Owners and renters of rental or strata units, and of commercial buildings, often face barriers to investment in energy efficiency improvements. A short term renter may not have the capital resources, economic incentive or legal ability to undertake physical changes to their rental or leasehold unit. Building owners may not be able to realize returns on energy efficiency measures through rental increases. Building occupants may not have sufficient motivation or understanding to effectively utilize or maintain energy efficiency improvements. PAYS-BC could help in overcoming many of these barriers if regulations and financing arrangements are sufficient to encompass the diversity of buildings and the range of legal agreements between owners and occupiers that would be involved.

Ministry Proposal: The ministry will consult with British Columbians on implementation of PAYS-BC for rental and strata units in 2012/13, and for commercial buildings in 2014/15.

In the interim, the ministry will work with utilities to develop a registry of potentially acceptable rating systems for retrofits in high-rises and commercial buildings. Possible rating systems could include, but are not limited to: Building Owners and Managers Association Building Environmental Standards (BOMA BEST); Leadership in Energy and Environmental Design (LEED) for existing buildings; and the American Society of Heating, Refrigerating and Air-Conditioning Engineers Building Energy Quotient (ASHRAE BEQ).

The ministry welcomes comments about PAYS-BC

Information about the consultation, including links to download copies of this paper and the associated response form, is posted on the ministry's [PAYS-BC website](#).

Comments should be received before March 30, 2012. Following review and consideration of the comments, the ministry intends to finalize the PAYS-BC regulation for single-family homes in summer 2012. In subsequent years, the energy efficiency financing offer from utilities will be expanded to encompass strata and rental, as well as commercial building components.

If you have any questions regarding the information in this paper or the consultation process, please contact Cindy Bertram of C. Rankin & Associates, who has been contracted to manage consultation comments, at:

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Thank you for your interest and comments!

Comparison Table – PAYS Experience in Other Jurisdictions

(Click on the highlighted and underlined hyperlinks for further information.)

Transferable Loan Programs

Kansas - Midwest Energy Inc. [HowSmart Program](#) (Currently Active)

- Available to home owners and renters
- On utility bill loan payments – *transferable loan*
- Eligible retrofit measures: air tightness, insulation, heating and cooling equipment – other efficiency measures eligible if deemed a permanent part of the structure

United Kingdom (UK) - [Green Deal](#) (Scheduled to start in 2012)

- Will be available to home owners, businesses and renters
- On utility bill loan payments - *transferable loan*
- Eligible retrofit measures: measures must be permanent part of the structure

Hawaii - Hawaii Electric Company (HEC) Pilot (Active 2007-2010)

- Available to property owners or renters
- On utility bill loan payments - *transferable loan*
- Eligible retrofit measures: solar water heaters

Additional information: see program comparison assessment - [European Council for an Energy Efficient Economy](#)

New Hampshire - New Hampshire Electric Cooperative and Public Service Company Pilots Active 2001-2003)

- Available to residential homes and commercial customers, or municipal customers (including schools)
- On utility bill loan payments - *transferable with option for owner pay-out*
- Eligible retrofit measures: lighting, air tightness, insulation, water saving devices and clock thermostats

Additional information: see Pays America pilot programs [summary assessment](#) and [detailed process evaluation](#)

Non-transferable Loan Programs

Oregon - [Clean Energy Works Oregon](#) (Currently Active)

- Available to residential homes and commercial customers, or municipal customers (including schools)
- On utility bill loan payments - *transferable with option for owner pay-out*
- Eligible retrofit measures: lighting, air tightness, insulation, water saving devices and clock thermostats

Manitoba - Manitoba Hydro [PowerSmart Residential Loan](#) (Currently Active)

- Available to single family or single detached home owners
- On utility bill loan payments - *non transferable loan*
- Eligible retrofit measures: air tightness, insulation, heating and ventilation equipment, windows and water heating equipment

City of Vancouver - [Home Energy Loan Program Pilot](#) (Scheduled to start in 2012)

- Will be available to home owners
- On property tax loan payment - *non transferable loan*
- Eligible retrofit measures: to be determined

Halifax - [Community Solar Project Pilot](#) (Scheduled to start in 2012)

- Will be available to single family home owners
- Loan payment mechanism to be determined
- Eligible retrofit measures: solar panels for use in domestic hot water heating