

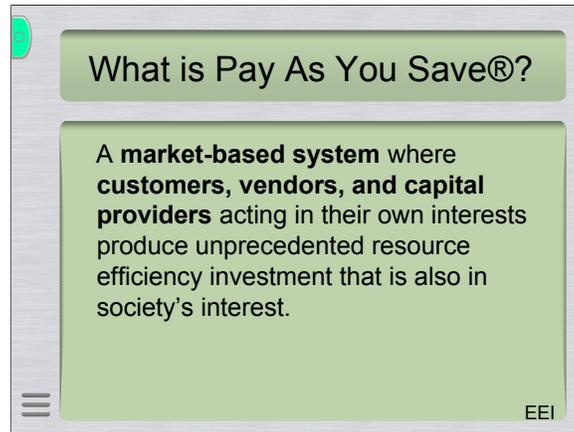
Pay As You Save®  
(PAYS®)

March 21, 2006

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*Pace Energy Project*

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*Energy Efficiency Institute, Inc.*

Good morning. My name is Paul Cillo. I am one of the principals of the Energy Efficiency Institute. My partner, Harlan Lachman, and I are the originators of the Pay As You Save® or PAYS® system. Today I am here with Mr. Fred Zalcman, Director of the Energy Project at Pace University.



PAYS® is a market-based system where customers, vendors, and capital providers acting in their own interest produce unprecedented resource efficiency investment that also benefits society.

First, PAYS® is not a program. It is a system -- with a set of market rules, a tariff, and a certification process.

Second, PAYS® doesn't require public money for cash incentives. I will talk a little later about the incentives to customers, vendors and capital providers that let's them act in their own interest and produce extensive and unprecedented investment in resource efficiency. When I say customers, I'm including renters, developers, building owners -- anyone who either owns or occupies a building and pays a utility bill.

Once in place, the PAYS® system can be adapted so that any customer can buy any cost effective, resource efficiency product from any certified vendor. The customer pays nothing up front and, from the beginning, only commits to pay lower utility bills.

We designed PAYS® to remove market barriers to resource efficiency purchases. But we wanted to remove these barriers without the need to spend public money on cash incentives. That's what PAYS® does.



There are many reasons why customers do not buy products that would save them more than the product costs. Here are the main market barriers we have come across in 25 years of program design and management:

1. Unless a program offers free measure installation, participants are required to come up with some money. Most folks have other pressing concerns: paying medical bills, fixing their cars or homes, making rent or mortgage payments, or sending their kids to good schools. Even buying Christmas gifts or new cars competes with the capital needed to buy energy efficiency. So most people don't think they have enough money to afford to buy efficiency products.

2. Some people could borrow the capital, but their debt capacity may be limited or maxed out. Their credit could be sketchy or they could be saving their debt capacity for other, more important, purchases (a new car or house). Not everyone is willing or able to borrow the required capital.

3. When people buy efficiency measures, they must pay up front or commit to long payments based on the assurance of savings. But what if they relocate before they get their savings? What if the product breaks down before they get the savings that will pay them back? What if they are renting? Does it make sense for them to invest in the landlord's building?

All the risk and burden associated with getting savings is put on the occupant who is paying the utility bill and whom we want or hope will purchase efficiency products -- facing this risk is a real disincentive to buying.

And most programs ignore the concerns of renters, a good percentage of both residential and commercial utility customers. These customers can legitimately ask, "Why should I pay to improve my landlord's building?"

That was why EEI developed PAYS®. PAYS® can help all customers, owners, renters, businesses, developers -- anyone -- buy resource efficiency products. In fact, they can buy PAYS® products more easily than less efficient products.

**PAYS® Products**

Money-saving resource efficiency measures purchased with no up-front payment and no customer debt obligation. The customer pays a utility tariff that is always less than estimated savings and is payable only if the measure is working.

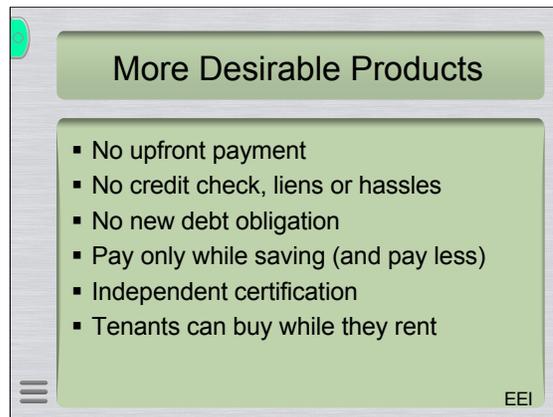
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This is a simple definition of the products available through the PAYS® system that some people have found helpful.

*Give people a chance to read it, then:*

Utility customers who purchase PAYS® products pay nothing up front and incur no debt. They simply pay a lower utility bill because the tariffed charges are always lower than the independently certified estimated savings. An individual customer is not obligated to pay the tariff under either of two circumstances:

1. The customer leaves and is no longer a customer at the location where the measures are installed; or
2. The measure isn't working and cannot be fixed.



So why do we think that customers who are not buying efficiency products even with cash incentives will choose to buy PAYS® products?

PAYS® customers can buy efficiency measures without paying anything up front. Nothing.

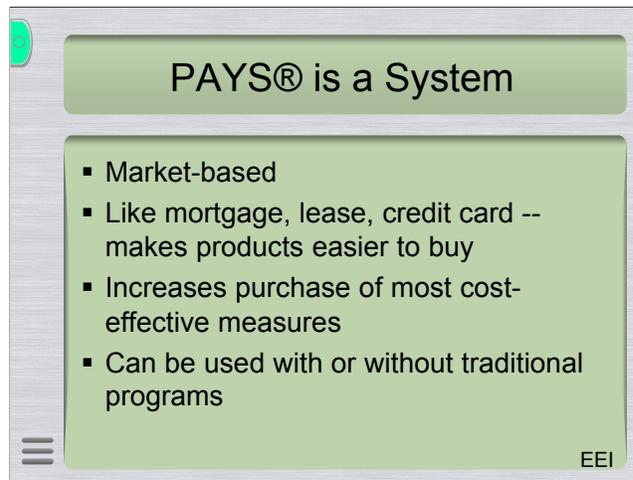
PAYS® is not a consumer loan, so there is no credit check, no lien, no credit approval -- all the hassles and issues of dealing with financing institutions are eliminated.

The financial obligation of the PAYS® tariff is attached to the meter, not the individual customer. The purchaser is only agreeing to pay a lower bill, so PAYS® customers are not taking on new debt. This means that municipalities, public schools, or hospitals do not need voter or board approval to buy a PAYS® product; businesses and individuals don't use up borrowing capacity to buy PAYS® products. Their entire debt capacity remains unchanged by a PAYS® purchase and available for other business or household priorities.

We call the system Pay As You Save® because customers pay only as long as they personally save. A PAYS® customer's obligation to pay ends when that customer relocates. And, the payments they do make are offset by bill savings. When someone agrees to buy a PAYS® product, they are actually agreeing to pay lower energy bills -- even including the PAYS® charges.

Independent certification of savings creates trust that savings will exceed payments and that the product is appropriate.

And PAYS® solves a problem that no program has been able to solve -- split incentives. Tenants can purchase PAYS® products because they only have to pay while they are a tenant at the location where the products were installed. Since the PAYS® charges are tied to the meter not to any individual, the next tenant at the location gets the savings and pays the tariff charges after the current tenant vacates.



As I said earlier, PAYS® is not a program. It is a market-based system. Programs are publicly funded activities that attempt to convince people to buy efficiency products they would not otherwise buy -- usually with the help of rebates or low interest loans or both.

The PAYS® system does not work that way. Instead, it allows vendors who sell efficiency products to make offers that are too good for potential customers to refuse. In order to be able to make these offers, vendors must agree to take on most of the functions normally assigned to program staff (marketing, savings estimates, selling, and the cost of consumer assurance).

Think about other market-based systems that help customers buy products ---mortgages, car leases, credit cards. Like these, PAYS® makes it easier for vendors to make offers that customers find attractive.

Vendors will market the most cost effective measures that qualify as PAYS® products and customers will want to buy them. PAYS® effectively eliminates the barriers to these purchases so that more customers will buy them.

And, PAYS® can operate with or without a traditional program. Depending on the interest rate available --and the lower the rate the more measures will qualify --- even without any subsidy, most measures with five year paybacks or less will qualify.

## PAYS® & Subsidies

- Only the most cost effective measures qualify as PAYS® products
- With PAYS®, subsidies are not used to lower buyer's first cost
- Subsidies qualify more measures as PAYS® products

EEI

When most states consider which resource efficiency measures are beneficial, they look at things through a societal perspective. Policy makers consider societal benefits not included in current rates like future cost increases, avoided Transmission and Distribution costs, the real benefits of a more secure and reliable system, environmental benefits, economic development benefits, etc.

PAYS® screens measures using estimated customer savings at today's rates. That's it. It is not that we don't think these other benefits are important. But measures that qualify under more comprehensive, societal screening tools but not the PAYS® screen may not be great deals for the customers who we want to buy them today.

The traditional approach to get customers to buy measures that benefit society has been to offer rebates and increase the rebate amount until enough customers start buying these efficiency measures and program funds are exhausted. When rebate amounts are high enough, some customers buy measures. When program funds are expended, activity stops.

PAYS® can be used with subsidies too. However, the subsidies are used differently. They are used to qualify more efficiency measures as PAYS® products, rather than as cash incentives to customers. Using subsidies with PAYS® in this way accomplishes three things.

First, it allows available public funds to get more work done. All the measures that are desirable from a societal perspective can be subsidized as needed to qualify them as PAYS® products. In 2004, we gave testimony in NH proving that using PAYS® with subsidies requires less public funding compared to traditional rebate programs. Our testimony showed that 72% of the rebates paid in NH were not needed (the measures were cost effective enough to qualify as PAYS® products without any subsidy at all). Using public funds as we recommended, to qualify more measures as PAYS® products,

## What's the Incentive?

- Traditional programs use rebates as the incentive to get customers to buy efficiency products
- PAYS® creates a new incentive -- low-risk, immediate net savings

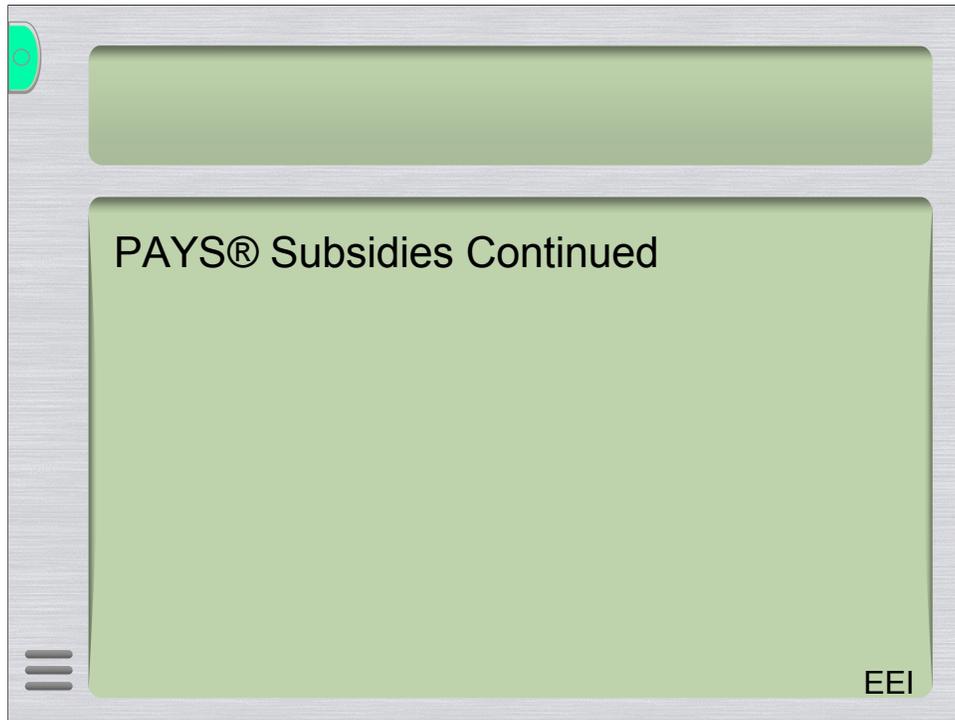
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The PAYS® system and traditional energy efficiency programs are both attempting to overcome market barriers to people buying efficiency products. But, they use different approaches.

Traditional programs offer a cash incentive to change customer behavior. Enough money is paid to customers to get them to buy a desirable product they would not otherwise buy. By definition, the cash incentive becomes the reason, or at least one of the reasons, for the purchase.

PAYS® does not use rebates as the reason for someone to purchase efficiency products. PAYS® doesn't need rebates at all. The PAYS® system creates a new incentive for customers --- low-risk, immediate net energy savings. This is the incentive to buy a PAYS® product. Pay nothing up front, get immediate savings, feel good about doing something for the environment.

EXAMPLES: Product fails -- customer relocates before net savings are realized.



would have resulted in four times as much work for the same amount of ratepayer money.

Another benefit of using PAYS® this way is that it eliminates the boom and bust cycle created by rebate programs -- robust purchases when rebate funds are available, followed by sharp drops in purchases when funds are used up. If measures are cost effective enough to qualify as PAYS® products, customers can buy them. For those measures that require a subsidy to qualify as PAYS® products, customers can buy them when the subsidy is available. Regardless of whether subsidies are available, however, the market for PAYS® products remains vibrant because the incentive to buy efficiency products is not the subsidy.

And the third benefit of using PAYS® with subsidies is that PAYS® makes subsidy programs more equitable. Customers without capital or debt capacity, folks unsure about occupancy, low income customers, the elderly, businesses looking for quick paybacks cannot and do not participate in traditional efficiency programs because they can't come up with the copayment. These customers can all participate with PAYS® since there is no upfront payment required.

Considering the efficient use of public funds, market stability, and customer equity, it makes sense to use PAYS® as the foundation of any state's resource efficiency effort.

The slide features a light green background with a dark green header box containing the title 'PAYS® Requirements'. Below the header is a list of three requirements, each preceded by a square bullet point. The requirements are: 'Tariff assigned to a meter location, not individual customers', 'Billing & payment on the utility bill with disconnection for non-payment', and 'Independent certification that products are appropriate & savings estimates exceed payments'. In the bottom right corner of the slide, the letters 'EEI' are displayed. On the left side of the slide, there are three horizontal lines and a small green circular icon at the top left.

## PAYS® Requirements

- Tariff assigned to a meter location, not individual customers
- Billing & payment on the utility bill with disconnection for non-payment
- Independent certification that products are appropriate & savings estimates exceed payments

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Although there are many elements to a well designed PAYS® system, the system must include these three elements to be PAYS®.

PAYS® requires a utility tariff assigned to a meter location. Assigning the tariff to the meter location creates a reliable cash stream over the term of payments regardless who owns or occupies the property. When a customer leaves the premises, the next customer picks up the PAYS® obligation for the term of their occupancy.

Since billing and payment is on the utility bill enforced with disconnection in the event of nonpayment, the payment stream for PAYS® products is as reliable as other utility tariffs -- typically better than a 98% collection rate. Additionally, we recommend that utilities be allowed to recover any uncollectible charges after a diligent collection effort from all ratepayers.

The third key component of the PAYS® system is an independent certification process that provides assurance to customers that the products they are purchasing are appropriate for their application and that savings estimates are reliable and will exceed their payments.

If you look at these three key elements, it will be obvious why each state's public utilities commission must approve implementing PAYS®. In most states, only Commissions can approve tariffs.

## Eligible Measures

- Cost effective based on current retail rates
- PAYS® test:
  - Looks at payments and savings over 3/4 of estimated measure life
  - Payments = no more than 3/4 of estimated savings

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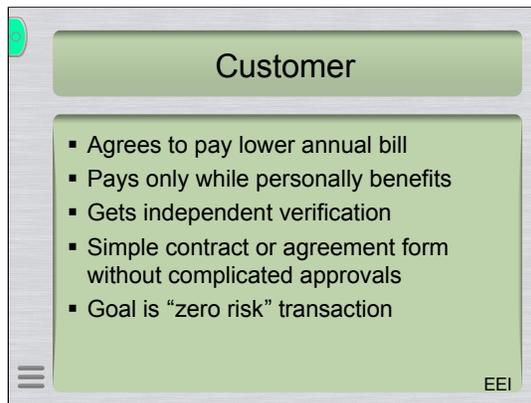
PAYS® measure eligibility is based on retail rates -- the rates that customers pay.

For measures to be eligible as PAYS® products, they must pass what we call the 3/4 - 3/4 rule. When we look at measure eligibility we only consider the costs and estimated savings over 3/4 of the measure's estimated useful life.

Customer payments cannot exceed three quarters of the estimated savings. This formula allows certified contractors to offer customers PAYS® products with immediate financial savings --even if their savings estimates are off by as much as 25%.

Additionally, by requiring measures to pass this screening test, PAYS® assures customers they will not have to pay for measures beyond the end of their useful life, that is, beyond the period of time that the measure is delivering savings.

The payment term for PAYS® products cannot be longer than three quarters of the measure's estimated life.



Let’s take a look at PAYS® from the different perspectives:

- PAYS® is a great deal for customers. For them, the incentive is low risk, immediate net savings.
- The purchasing customer agrees to pay monthly PAYS® charges that are lower than the estimated savings. The obligation to pay the charges applies only while the customer remains at the location where the measure was installed, and only if the measure keeps functioning.
- The vendor’s savings estimates are checked by an independent third party.
- The contract in our lighting program was a simple form. The customer’s signature followed a disclosure that if they had been using their lighting less than a specified number of hours per day, they’d lose money. In other words, in this case the tariff only required self-certification.

The contract for major measures was a longer form approved by the NH Commission, utility lawyers, and the NH Office of Public Counsel. But we made sure it was readable and that a simple signature could start the process. We have since learned that some of this information may be able to be put into the tariff and removed from the contract.

- We also establish an agency relationship between the certification agent and the customer so that the certification agent has legal standing to operate on the client’s behalf without liability.
- Obviously, there is no such thing as zero risk. We call it zero risk for the customer because:
  1. someone other than customer or vendor checks the offer;
  2. the customer can end the deal by leaving;
  3. The customer doesn’t have to convince the next occupant to pay more for their home or business to recover his original investment; and
  4. if the measure stops working it is fixed or the customer stops paying.

A well-designed PAYS® system makes the contracting process safe, easy, and as risk free as possible for the customer.

**Capital Provider**

- Agrees to provide a specified amount of capital for PAYS® investment
- Negotiates interest rate, term
- Certification Agent uses funds to pay for completed projects
- Repayment with interest to capital provider is assured by reliable PAYS® payment stream and utility guarantee

EEI

The incentive that PAYS® offers to capital providers is a very reliable payment stream:

- Capital to pay for the installation of PAYS® products is supplied by one or more capital providers. Once a capital provider agrees to provide a specific amount of capital for PAYS® projects and agrees to a term and interest rate, the funds become available to pay contractors for PAYS® installations.
- The Certification Agent approves projects brought by building owners, the utility, or contractors that meet PAYS® eligibility criteria. Once approved, installed, and inspected, the Certification Agent sets the monthly tariffed charge amount and approves payment to the contractor. The customer typically begins to make payments during the first full month after installation.
- Since the PAYS® charges run with the meter, payments flow to the utility regardless of who owns or occupies the property.
- PAYS® payment stream is extremely reliable. Utility companies typically have bad debt rates that are less than one or two percent of all collectibles. We expect an even higher collection rate with the mechanisms we have added, for example the ability to extend the PAYS® payment obligation to recover missed payments and the cost of repairs, contractor bonding and the fact that all customers will be paying lower bills. In fact, in the NH pilots, the two utilities PAYS® related bad debt was less than three hundredths of a percent of well over a million and a half dollars of investments.
- We hope that access to this cash stream is sufficient to obtain enough commitments from capital providers. But if capital providers required additional repayment assurance, the Commission could approve utility recovery of any PAYS® related uncollectables just as they do for all other tariffed charges.

## Certified Contractor

- Markets products likely to pass PAYS® test to any utility customer
- Initially qualifies products (verified by independent Certification Agent)
- Responsible for quality
- If contractor doesn't finance, capital will limit scope of PAYS® effort

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- PAYS® offers contractors a new marketing tool that makes their products much more attractive to customers. The PAYS® system allows certified contractors to make offers that customers will be unlikely to refuse.

That's why PAYS® certified contractors are required to assume new responsibilities:

- The vendor does a preliminary eligibility calculation using the PAYS® screening tool. The Certification Agent checks to make sure the measure is eligible.
- The vendor not only markets the products and convinces customers to buy, vendors are responsible for any costs associated with messing up. They pay for failed inspections. Bonding or irrevocable letters of credits covers the cost of a botched job or a warranty not honored. There is no need for an extensive and expensive quality control program.
- Vendors can finance the measures. If they do, there is no limit to the number of jobs they can sell. There are no budget restraints as with traditional programs. Otherwise, the availability of capital for measure installation will be what limits PAYS® product sales.

**PAYS® Certification Agent**

- Performs administrative and consumer assurance functions
- By design, utilities perform only billing and collection
- In NH, utilities administered pilots
- In NY, MI, & VT, utility administration unlikely

EEI

We've looked at PAYS® from the perspective of those who have a personal stake in the transaction. Now let's look at from the perspective of those who make the transaction possible.

Once the PAYS® system is in place, administrative and consumer assurance functions are done primarily by the Certification Agent -- approving measures, handling customer concerns, working out glitches with the transfer of funds between the utility and the capital provider.

When creating PAYS®, we wanted utilities to only perform billing and collection functions. Clearly, under current rate structures, utilities have a significant disincentive to help their customers save energy.

However, both utilities in New Hampshire provided certification oversight for their pilots. It is unlikely utilities will fill this role in PAYS® systems being discussed in New York, Michigan and Vermont.

## Utility

- Puts charges on bill and collects
- Repays capital provider via Certification Agent
- Notifies successor customers of PAYS® obligations (owner does, too)
- Guarantees PAYS® bad debt

EEI

- The essential utility functions are to put PAYS® charges on the utility bill and collect them just as they do any other tariffed charges; to repay the capital providers; and to notify new customers at a PAYS® location of their tariff obligations.

The utility makes regular payments to the certification agent, who in turn repays the capital provider. The utility also is responsible for notifying successor customers at a PAYS® location of their responsibilities, though the building owner is also required to disclose these responsibilities buyers or tenants.

- Charges must be on the utility bill. Once on the bill, payments don't change during course of the term. The term can be extended to cover costs associated with missed payments, non-occupancy or any costs for repairs.
- In order to ensure that capital is made available at the lowest possible cost, we recommend that the utility guarantee any PAYS® related bad debt. (IN Comments submitted in Case # U-13808 to Michigan PSC document we explain how PAYS® will actually reduce overall utility bad debt.

## Commission

- Must approve tariff that:
  - defines measure eligibility and customers
  - specifies rules & responsibilities of certified contractors, utility and customers
  - identifies Certification Agent and role
- Approves utility recovery of PAYS® bad debt if required

EEI

- PAYS® requires a regulatory tariff. To exist, PAYS® must be approved by the Commission. The tariff needs to spell out the rights and responsibilities of all the parties.
- The tariff can limit PAYS® to specific products or fuel savings (e.g., gas or electric) or be available for any eligible project that qualifies using the 3/4 - 3/4 rule.
- The tariff can be available to all customers or be targeted to specific classes or sub groups (e.g., municipalities or large non-profits).
- The tariff should specify what requirements vendors must meet to be able to sell PAYS® products (for example, in NH we insisted on bonding or an irrevocable letter of credit, extended warranties, financial penalties for failed inspections, etc.).
- The tariff should state what the utility will do (billing, notification of new customers, bad debt treatment).
- It should also specify what customers must do (payment obligations, owner disclosures, customer damage to measures, etc.).
- It identifies the certification agent and defines the certification process.
- The Commission can also approve utility recovery of PAYS® bad debt just as they do for every other tariff to ensure capital providers make funds available to pay for the upfront cost of PAYS® products.

## First PAYS Product-- 2002

- Town of Stratford, NH street lighting change out
- \$13,050 to change and relocate 58 fixtures
- \$6,292 annual savings
- Pays for itself in just 2 years, but...
  - Voters turned down project previously
  - PAYS® does not require voter approval
- Not a loan, but a utility bill
- “We couldn’t have done it without PAYS®”

EEI

The very first PAYS® product in the country was installed in Stratford, NH in 2002. The town installed 58 new high-efficiency street lighting fixtures for a cost of \$13,050.00. Public Service Company of NH estimated the annual savings at \$6,292 -- a two-year payback.

Yet, town voters had rejected this project in the past.

PAYS® doesn’t require a vote because it’s not a loan with new debt obligations. The town’s obligation is simply to pay their utility bills as they have always done, except after the PAYS® installation, the bills are lower.

One of the town’s selectman commented that they couldn’t have done this project without PAYS®

**NHEC Project**

- Health club air handling system upgrade
- Saves \$800/month on electric bill & \$166/month avoided maintenance
- Costs \$530 a month
- Net electricity savings of \$270/month & total savings of \$430/month

EEI

Another example of a PAYS® project was at the NH Electric Cooperative. A condominium association replaced the air handling system at their health club. The savings from reduced electricity usage and maintenance totaled nearly \$1000/month. The PAYS® payment is \$530/month.

This project had been low priority. But as soon as the condominium manager found out that they could do the project and save money without paying anything up front or taking on new debt, the project moved to the top of the list.

## PAYS® with Weatherization

- Supplement scarce resources
- Install non-program measures
- Reach more customers and expand constituency for service providers

EEI

Most weatherization programs that we are familiar with at current funding levels would reach all eligible clients with weatherization services in 50 to 100 years. PAYS® can be used in conjunction with existing weatherization programs to supplement limited resources.

PAYS® provides a way for cost-effective measures that are not part of a low income weatherization program to be installed. For example, in Texas, we were able to add efficient A/C, refrigerators, CFLs, and water savers to the low income weatherization program that has not previously offered these measures. This means that more measures and more savings can be made available to low income clients.

In Michigan, the weatherization providers were excited about the potential PAYS® gives them to serve more customers, including those who are not eligible for weatherization services. With dwindling funds to support their work, PAYS® provides a way for them to keep their experienced and well-trained crews in place and working by serving people who are not weatherization eligible. PAYS® would enable these agencies to serve low income customers who just miss program guidelines in addition to serving all residential customers. These agencies were excited about the potential to help more people and to expand their constituency.

## Credit Requirements

- No credit requirements in pilots
- Verifying bill payment status deemed burdensome & unnecessary
- Near-zero bad debt during pilots validated this decision

EEI

There is no need for credit checks that might make some people ineligible for other types of programs. Since the customer is not accepting new debt, only paying a lower utility bill, there are no credit requirements. All customers in the NH pilots were eligible to participate. In development of the pilots we discussed the possibility of requiring calls to customer service staff to verify that customers were current with their bills but this was determined to be burdensome to the staff and, with the threat of disconnection for non-payment, unnecessary. And, the near-zero bad debt during the two years of the pilots serving all classes of customers validated this decision.

**PAYS® New Construction**

- Pay developers more than incremental cost to install cost effective products
- Building occupants (who benefit) pay over time
- Doesn't increase building cost

EEI

We want to take a moment to highlight a unique feature of PAYS® as it applies to new construction.

With PAYS® we want market forces -- not public funds -- to get developers and builders to install the most efficient equipment.

But more efficient equipment costs more and either raises the cost of construction or shrinks developers or builders profits if they cannot pass these costs on to the buyer because of market forces or mortgage limitations.

With PAYS®, the Certification Agent can pay Developers MORE than the incremental cost of installing efficient equipment. This means that Developers pay less to build efficient buildings than to build inefficient ones. When the marketplace rewards building more efficient buildings, everyone benefits.

But from the buyers perspective, building costs don't increase at all. Banks don't have to lend more money. Customers will even have an easier time making all their monthly payments because even with PAYS® charges, they will pay less than they otherwise would have to pay for utilities.

And since PAYS® only has to pay for a little more than the incremental cost of efficient equipment, a lot of technologies qualify.

Questions?

EEI

## Measure Screening

- PAYS® considers only current rates
- PAYS® considers only 3/4 of annual savings over 3/4 of measure's life
- Societal tests include estimates of fuel inflation and 100% of savings
- Societal tests usually include externalities (other societal benefits)

EEI

In order to assure customers that they will benefit from installation of efficiency products, PAYS® uses current retail rates and only a portion of a product's total estimated savings. We only consider 3/4 of the estimated measure life to ensure that if the specific product a customer buys operates for less time than a typical product, the customer still comes out ahead.

We only consider 3/4 of the savings because, with a market driven program, the customer must get enough benefit to warrant the installation. Remember, with PAYS®, the savings is the incentive to install the measures. PAYS® assures customers they will get enough savings to pay for the installation and still provide them with additional savings equal to at least one third of the cost.

On the other hand, traditional programs count 100% of the estimated savings. Remember, with these programs, the incentive to buy the product is the rebate, not the promise of future savings.

Traditional programs also include estimates of energy price increases in their savings calculation to avoid "lost opportunities." Most people think energy prices will continue to go up over time. Not considering these future energy price increases in the savings calculations might cause customers to not do installations that will benefit society and customers in the long run.

Additionally many traditional programs include externalities. They quantify the value of avoiding future transmission and distribution costs and the value of an enhanced

**Disconnect for Non-Payment**

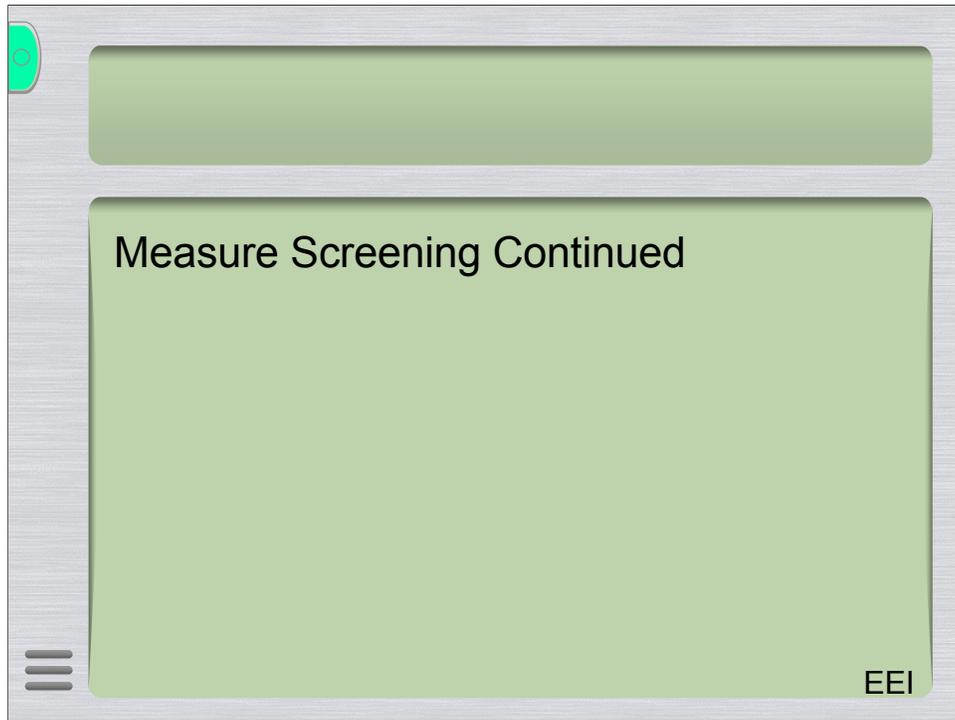
- If measure works, DNP is same as for any other tariffed charge
- If measure fails during warranty & isn't fixed, customer stops paying
- If measure fails after warranty, Certification Agent repairs it; term extended to recover repair costs

EEI

Assuming the PAYS® product continued to work, disconnections for non-payment would be handled the same as it is for non-payment of any other SEMCO tariffed charge. We assume there would be warning notice followed by eventual disconnection for non-payment in accordance with Commission rules. Bad debt would be turned over to a collection agency, and whatever was not recovered from non-paying customers would be recovered from all ratepayers. We should note that customer non-payment is traditionally lower for utilities (1 to 3 percent) than for banks. In the NH PAYS® Pilot, customer non-payment for PSNH was zero; for NHEC it was less than 0.08% of the amount spent on measures.

If a measure fails during the warranty period, the customer does not have to continue making payments if it is not fixed. If the vendor does not honor the warranty, bonding or an irrevocable letter of credit can be used to make the utility whole by either paying for a repair or covering the missed payments.

If a measure fails after the warranty period, the tariff should provide that if the measure can be repaired, the payment term, but not the amount of each payment, can be extended to recover any additional repair costs. Repairs would be handled by the Certification Agent.



environment and economic development. While these costs may or may not directly benefit the purchaser, they benefit all of us. Since we are paying for the rebates, we want to make sure these benefits are not lost.

We want to emphasize that considering fuel escalation, environmental adders, avoided T&D costs, etc. is reasonable and should be the basis for public policy. However, based on the past quarter century, it doesn't look like enough money will ever be raised to fund the installation of all measures using this traditional approach.

As we testified in New Hampshire, PAYS® allows customers to install the measures that benefit them now and for society to add whatever funds it can to qualify additional measures that meet these other criteria. The good thing about our approach, is that all customers, renters, the elderly, folks with credit concerns or less capital, get to benefit now regardless of the decision of policy makers. And, as our testimony proved, the funds society does raise will go further if PAYS® is the incentive used to get customers to purchase efficiency.

## Permanent/Portable Measures

- Portable measures can be easily removed by occupant (CFLs)
- Permanent measures are part of structure (central HVAC, lighting fixtures, insulation)
- Some measures defy easy classification and require policy determination

EEI

Permanent measures are measures that remain with the premises. Some distinctions are easy. CFLs are obviously not permanent measures. Lighting fixtures are. Central air conditioning is permanent. Window air conditioners are not.

However, some measures do not fit into easy classification and a collaborative or the Commission would have to make a decision about their status. For example, in New Hampshire, refrigerators would be portable measures because folks take them with them when they relocate. However, in New York City, by law, most refrigerators must remain in apartments and would be considered permanent.

## Entire Building Retrofit

- If package of measures meets PAYS® test, package is treated as a PAYS® product, even if one measure does not qualify
- For packages that don't qualify, qualifying portion can be PAYS® product and the customer pays for the rest

EEI

In New Hampshire, and as recommend by EEI, if a package of measures qualifies under the 3/4 – 3/4 rule, the entire package of measures can be treated as a PAYS® product even if one measure did not qualify by itself. This included measures that produced savings for any resource type (e.g., gas, water or electricity). If the customer wants to do more than the package of measures that qualify, the customer has the option of doing the part of the package that does qualify as a PAYS® product using the tariff and paying for the other measures any way (s)he can.

## NH Products

- PSNH: lighting, street lighting, exit sign retrofits and window replacement; new boilers likely qualify now (municipal)
- NHEC: CFLs, weatherization of gas heated homes, lighting retrofits, and HVAC retrofits (all classes)

EEI

Any measure that produced documented savings (regardless of fuel saved) qualified under the tariff approved by the New Hampshire Commission. One measure, a ventilating system for a health club, qualified because the elimination of costly annual repairs was almost as significant as the estimated annual energy savings. Measures installed by PSNH included lighting, street lighting, exit sign retrofits and window replacement. A boiler replacement just missed qualifying but may qualify this year due to increased fuel costs.

At NHEC, measures included CFLs, weatherization of gas heated homes (even though NHEC only sells electricity to its members), lighting retrofits, and HVAC upgrades.

## PAYS® CFLs -- NHEC

- 6-20 Energy Star CFLs
- \$0.25/month for 24 months
- 4 hours/day, \$0.10/kWh, avg. 40 watts savings; net electricity savings \$0.23/month/CFL
- If 8,000 hours, total net savings \$26
- If CFL stops working before end of payments, free vendor replacement

EEl

## PAYS® Benefit/Cost Ratio

- Except PAYS® setup, participants pay all costs through monthly PAYS® charges
- PSNH spent \$113,383 dollars to set-up and operate its pilot which installed \$1.2 million of measures
- PAYS® screening and customer payments assure cost effectiveness

EEl

BCR refers to benefit cost ratio. BCRs are used to determine if an energy efficiency program or system is cost effective.

Once the PAYS® system is in place, all costs for measures are repaid through monthly PAYS® charges. We don't have the latest up-to-date information for New Hampshire. You would have to get it from the utilities or the NH Commission. But according to the quarterly reports that were filed by the utilities for activity through 2003, NHEC spent about \$35,000 dollars to operate its pilot which installed more than \$138,000 dollars worth of cost effective measures. PSNH spent about \$113,000 dollars to set up its pilot to install \$1.2 million dollars of cost effective measures. Cost effectiveness is assured because only cost effective measures based on retail rates without externalities qualify as PAYS® products and the utility does not pay anything for them. Since customers pay for 100% of program costs, there are no costs associated with free ridership.

## Quality Control

- Certification Agent responsible for assuring measures meet 3/4 - 3/4 rule and are appropriate for installation
- CA uses combination of follow-up phone calls and random site visits
- Vendors pay costs of failed inspections

EEI

The Certification Agent is responsible for assuring that the measure(s) being installed meets the cost-effectiveness test and is appropriate for installation at the location. This can be done using a combination of follow-up phone calls to the customer and random site visits. Vendors pay for the cost of failed inspections. Customers are not assured they are getting the lowest price, the best possible measure, or the most savings. In the end, the marketplace will determine which measures are marketed and purchased.