

# **PAYS® Technical Hearing Presentation**

## **Connecticut Department of Public Utility Control**

**August 12, 2003**

### **INTRODUCTION**

(**Overhead #1**) Hello, my name is Harlan Lachman. I'm Co-Executive Director of PAYS America. With me is my partner and fellow Co-Executive Director, Paul Cillo. PAYS America is a new non-profit dedicated to providing research and education about the Pay-As-You-Save or PAYS® system. PAYS America is interested in the development and implementation of a national market infrastructure that will stimulate the purchase of cost-effective, resource-efficiency products using the PAYS® system. Until we receive our 501-C3 designation, our fiscal sponsor is ACEEE.

Our background is in energy efficiency. Paul and I each have more than 25 years of program design, management and training experience. Although PAYS® was originally envisioned to promote energy efficiency, it can facilitate investment in all resource efficiency measures.

I want to introduce Mr. Art Tolleno III from Niagara Conservation Corporation. Art has provided us with technical information about the products and services he sells as we have refined the PAYS® system. He may speak a little later to you about why he is interested in having the DPUC add the PAYS® system to Connecticut's resource efficiency efforts.

We also want to thank Commissioner Brockway for coming from New Hampshire. The New Hampshire Commission was the first commission to authorize the sale of PAYS® products. Commissioner Brockway, please feel free to add any information at any time during this session.

Today, during this technical hearing, we will present information about the PAYS® system. Our presentation will be divided into the following areas:

(**Overhead #2**) First we will define PAYS®, then explain how it is for more than just electricity saving measures. Next, we will review the status of the current New Hampshire Pilots. Then, we will discuss some of the possible ways you could use the PAYS® system in Connecticut. Finally, we will discuss what you will need to implement PAYS® in Connecticut.

After each part of this presentation before moving onto the next section, Paul and I will try to answer any questions that you have.

### **DEFINE PAYS®**

The Pay-As-You-Save™ or PAYS® system was first described in a paper Paul and I wrote in December 1999 for the National Association of Regulatory Utility Commissioners' Energy Resources and the Environment Committee.

**(Overhead 3)** PAYS® enables building owners or tenants to install money-saving, resource efficiency products with no up-front payment and no debt obligation. Those who get the savings pay for these products through a tariffed charge on their utility bill, but only for as long as they occupy the premises where the products were installed. Like a loan, PAYS® allows for payment over time, but unlike a loan the PAYS® obligation ends when occupancy ends or the product fails. While PAYS® includes payment over time on the customer's bill, simply allowing payment on the bill does not offer consumers all the elements necessary to make the PAYS® concept work.

PAYS® is a new system that can stimulate investment in electric, gas and water efficiency. One version of PAYS® is now being piloted by two utilities in New Hampshire. PAYS® is not intended for new, unproven technologies. Instead, it is intended to give consumers a new way to buy proven money-saving, resource-efficiency technologies.

**(Overhead 4)** PAYS® products require a new market infrastructure that has three key elements:

- a) A tariff that assigns repayment of measure costs to the meter location where the measure was installed -- not to an individual customer.
- b) Billing and payment through a charge on the distribution utility bill with disconnection for non-payment.
- c) Independent certification that products and installation are appropriate and that estimated savings will exceed payments -- so customers get immediate net savings.

PAYS® is designed to be a market-based system (although later we will discuss how PAYS® can be a component of an already-successful program). Instead of relying on subsidies or information to encourage consumers to buy resource efficiency products that they would not otherwise buy, PAYS® is designed to overcome the market barriers that stop customers from buying resource efficiency products and services. Additionally, once in place, PAYS® does not require public subsidies for measures (although, when available, subsidies can and should be used to make more measures cost effective).

**(Overhead #5)** Throughout our 25 years working in this field we have repeatedly seen a number of market barriers that inhibit customers from purchasing resource efficiency products and services that save money over their useful lives and help reduce the negative environmental impacts of energy production and delivery. Here are some of the key barriers and how PAYS® addresses them:

Competition for capital (first cost). Some customers lack available funds to pay for measures. More commonly, they have what they consider to be more pressing needs. For example, a hotel might choose to spend available capital on marketing, upgrading facilities, or on key staff. Since with PAYS® there is no up-front payment and no requirement for customers to use their available funds -- there is no barrier.

Assurance or confidence of savings. For customers to invest in efficiency measures they need to trust that the savings will outweigh their costs. Information about savings provided by vendors is usually not enough to get customers to install measures. With PAYS®, an independent third party certifies savings claims and the appropriateness of a measure so, again, this barrier disappears.

Uncertainty about ownership or occupancy. Resource efficiency measures frequently require several years to pay for themselves with savings. The longer the payback period, for both residential and commercial customers, the more likely that measure installation will be deferred, especially in periods of economic uncertainty or if there is any consideration the occupant might terminate occupancy during the payback period. In other words, they would end up paying for something but not getting all the benefits. With PAYS®, the obligation to pay ends when the customer leaves the premises. Since the PAYS® obligation is a tariff assigned to a meter, the next customer at the location assumes the obligation to pay, just as he or she assumes the savings. The purchasing customer doesn't have to worry about getting all the savings or about recovering his or her investment from the sale price. The purchaser only pays while he or she saves, so uncertainty about occupancy will not impact consumer decision-making.

Debt. Private resource efficiency companies sometimes offer to finance measures. However, some customers, especially businesses, do not want or cannot add to their debt. Again, in periods of economic uncertainty, businesses tend to reduce their debt, not increase it. PAYS® was designed so that there would be no customer debt obligation -- since with PAYS® there is no lien or customer loan and the purchaser's obligation to pay ends when he or she leaves the premises. Again, it is a tariff assigned to a meter location.

This is single biggest difference between PAYS® and any other approach – the obligation to pay is attached to the meter, not to any individual customer. This means businesses don't hurt their debt-to-equity ratios when they purchase PAYS® products. Towns don't need voter approval. Hospitals don't need Board approvals. And public housing managers don't have any obstacle to signing contracts that lower resource costs and the public costs for affordable housing.

Split Incentives. This is the barrier that occurs when someone other than the property owner is responsible for paying the utility bill. This is often the case with developers or landlords. With PAYS®, whoever gets the utility bill gets the savings. As long as they get the savings, they make the payments.

This feature is a subtle but important difference from the “payment on the bill” feature offered by some utilities today. With PAYS®, there is no disincentive for tenants in individually-metered premises to install resource-efficiency measures. In fact, since they are the recipients of any savings, PAYS® is the first approach that actually encourages tenants to install building resource efficiency measures.

I said earlier that PAYS® is a market-based approach. I think it is important for us to define what we mean by market-based. Although the New Hampshire pilot is

being run by the electric utilities who are both providing capital and certification, a PAYS® effort need not limit customers to utility offerings.

**(Overhead 6)** Once the PAYS® infrastructure is in place -- and by that I mean the PAYS® tariff, third-party consumer assurance, and utility billing and collection -- and once the capital to pay the up-front cost for measures is committed, vendors can begin to market cost-effective, resource-efficiency products directly to consumers as PAYS® products. Prices are negotiated between vendors and purchasers – as in any market. It is interesting to note that although the Public Service Company of New Hampshire’s pilot is marketed by their energy specialists to municipalities, to date, about 25% of the projects have been marketed by vendors who heard about the pilot and enrolled municipalities in buying their products as PAYS® products.

A key element of the PAYS® marketplace is that customers know that an independent third party has verified that the estimated savings will exceed the payments and that the project is appropriate for the specific application.

A big difference between the PAYS® marketplace and the current marketplace is that with PAYS®, customers don't have to pay anything up front and their obligation to pay is limited to the duration of their occupancy. Customers do not take on the obligation to pay the entire cost of the installation; they are only obligated to pay the current month's utility bill. While loan programs also remove the barrier of upfront costs, they only do so if the customer wants and is eligible to assume the obligation to repay the entire loan amount him or herself.

Some companies offer to install and finance the cost for money-saving projects for those customers who can take advantage of their offer and are willing to pay these companies’ financing rates and installation charges. The electric industry term used to describe these types of vendors is energy service companies or ESCOs. However, ESCO customers must be willing to assume the obligation to repay the entire cost for the project and their obligation to pay doesn’t end when they vacate the premises. Therefore, the inability to take on new debt or any uncertainty about future occupancy prevents customers from accepting ESCO offers.

While PAYS® relieves the customer of paying the up-front cost, this cost has to be paid by someone. It can be vendor financed. ESCOs currently do that now for those customers who can use the ESCO model. Capital can be provided from a bond fund. A number of cities have used their bonding authority to run resource efficiency programs (e.g., Burlington, Vermont). Or capital can be obtained from a third party capital provider at market rates. As many of you know, utility collection rates are usually higher than 97%. This is higher than any credit card, loan or mortgage collection rate so PAYS® offers a valuable cash stream.

We have found banks reluctant to provide the capital until PAYS® is more widespread. Since PAYS® is a tariffed charge, it does not involve loans to customers. The system is different from what they are used to. Other third party capital providers such as insurance companies seeking a reliable cash stream will be needed until the PAYS® infrastructure becomes more established. For a

viable, market-driven PAYS® effort, finding a willing capital provider and negotiating conditions that make them willing to invest their money is essential.

Once measures are installed, whoever gets the savings pays the charge for as long as they remain at the premises. If they leave, the next customer at that location assumes the charge, just as they assume the savings. Again, this is a feature that distinguishes PAYS® from “co-payment on-the-bill” offerings.

The utility collects the charges and forwards payments to the capital provider -- the vendor, the state (to pay off the bond), or to the third party capital provider.

The PAYS® infrastructure stimulates the creation of consumer products that have not been offered before -- products with no up-front payment, no obligation to pay when benefits cease, no consumer debt obligation, and with savings estimates certified by an independent third party.

We like to use home mortgages as an example of the type of effect a new infrastructure can have on consumers. The mortgage infrastructure includes title searches, rate schedules, disclosures, debt to income ratios, property valuation, coupon books, foreclosure rules, Fannie Mae, and secondary markets. These have all evolved to support a vibrant home mortgage system for purchasing homes.

Without this infrastructure, banks would not make loans and most consumers would not have the up-front money they need to buy a home. And, the home building industry would not be able to help drive our economy.

The PAYS® market infrastructure could have a similar impact. From a consumer’s point of view, PAYS® products are efficiency technologies packaged so that consumers can immediately lower their bills and pay only as long as they personally benefit from these measures.

**(Overhead 7)** Before we go move onto the next topic, that PAYS® is for more than just electricity saving measures, are there any questions about what PAYS® is supposed to do, about the three key elements of the PAYS® infrastructure, how it is designed to overcome market barriers, why it is a market-based effort or why some of us are so excited about the potential of the PAYS® system?

## **PAYS® IS FOR MORE THAN ELECTRICITY SAVING PRODUCTS**

This next section will be very short but important. The first PAYS® pilot in the country is resource blind. In 2001, the New Hampshire Public Utilities Commission authorized two electric distribution utilities to implement PAYS® pilots for measures that saved electricity and also for measures that saved resources other than electricity -- as long as the measure was sufficiently cost effective.

Since every home and business has an electric meter, the Commission’s decision enables the PAYS® tariff to be used for gas, oil or even water saving measures -- even for customers of unregulated gas or water utilities.

**(Overhead 8)** For example, if the resource-blind, New Hampshire tariff is used, customers who use oil or customers of non-regulated water and sewer utilities can have access to the PAYS® system. Vendors like Water & Energy Savings Corp. typically market projects combining water saving measures like flapperless toilets, aerators and showerheads with heating system upgrades and controls. If you think about it, a combined project makes a lot of sense to both the vendor and customer. Once you are in a building and have permission to do a project, it is more cost effective to do many things as opposed to one. From a customer perspective, water savers reduce water and sewer costs and also reduce water-heating (in other words oil, gas, or electric) costs.

Even if these measures were packaged together, the charges could be billed as separate PAYS® charges if the electric, gas and water utility companies had separate PAYS® tariffs. And, this would be the best approach. In this case, each utility's bill would be reduced. However, if all of the utility companies did not have PAYS® tariffs, with a resource blind PAYS® electric utility tariff, the charges for all of these measures could be put on their electric bill. The monthly electric bill would likely increase. However the customers' total utility bills would be reduced, the customer would have more funds to pay all their bills, and valuable resources would be saved.

There are some practical reasons why a Commission might want to use New Hampshire's resource blind model. First many Commissions don't regulate all resource suppliers (especially oil, gas and water). On the other hand, Commissions can authorize a PAYS® tariff for most electric distribution utilities. Secondly, some utilities are not monopolies. For example, some customers can switch from oil heat to gas heat and back again. Disconnecting from a utility would make collecting PAYS® charges and creating a reliable cash stream problematic. Few customers can afford to entirely disconnect from the electric grid. Electric meters are ubiquitous.

Before we talk more about the New Hampshire PAYS® pilots, are there any questions on how PAYS® could be used for cost-effective measures that save resources other than electricity?

## **NEW HAMPSHIRE PILOTS**

**(Overhead 9)** On November 29, 2001 in Order 23,851, the NH Public Utilities Commission authorized two electric utilities to operate PAYS® pilot programs with charges that "run with the meter" and with disconnection for non-payment.

In 2002, the two utilities, a Coop (NHEC) and an IOU (PSNH) implemented PAYS® pilot programs. Both pilots are utility-run rather than market driven. Both utilities front the money for measures, certify all measures, and oversee installation.

The two utilities use different systems for paying for measures. Both are allowed to use up to 10% of their annual system benefits funding. PSNH set-up a revolving loan fund using their SBC funds. NHEC uses its SBC funds as a guarantee fund in order to leverage capital so they can borrow 10 times the SBC

amount set aside for PAYS®. This is the model we recommend. Available ratepayer funds are used to protect customers who make investments that benefit society but that don't work out. Guaranteeing the repayment stream will lower the cost of capital to pay the up-front costs for projects. This will result in more projects being cost effective.

**(Overhead 10)** We have been told that as of July 1<sup>st</sup>, the two utilities have achieved the following results:

Since their pilot began, PSNH has 104 projects completed or in the pipeline (approved projects in process or waiting PSNH or town approvals) totaling \$1.5 million. PSNH has spent \$143,000 on overhead including consultants, billing system changes, and program staffing. The Coop has 18 PAYS® projects completed or in the pipeline and, with CFL sales, total PAYS® sales of \$130,000. The Coop has spent \$90,828 on overhead.

So far, at PSNH there has been no bad debt. One Coop customer, who purchased PAYS® CFLs, has walked out on his or her electric bill. We don't have information about the number of CFLs purchased or payments made before this customer skipped on his bill, but even assuming the customer took off with the maximum 20 CFLs and made no payments, the total bad debt so far is less than eight hundreds of a percent of the total cost for all Coop projects and CFL sales.

Even though these pilot programs are not market-driven as we would have liked, because of the efforts of the two utilities, especially the staff at PSNH, we have learned many valuable lessons.

**(Overhead 11)** The first is that customers understand PAYS® and will install PAYS® products, even when they have to pay the full cost for measures. At both utilities, as I will explain in the next section when we review some examples of PAYS® products, some customers claimed they could only have implemented the projects using the debt-free and zero up-front payment aspects of PAYS®. In other words, they were able to implement projects that would not otherwise have happened. Working with Commission staff and these utilities, we were able to develop contractual language between the utilities, customers and vendors, resulting in contracts that protect all parties. Issues about billing were resolved. And, as we mentioned before and as we will emphasize later, the pilots proved that vendors will market and be able to sell PAYS® products. The coop even demonstrated the viability of a local store using the PAYS® charge to sell resource saving products right off the shelf.

**(Overhead #12)** On the other hand, we also learned the limitations of a PAYS® effort when utilities both certify measures and provide capital. The most obvious limitation is that the market place is ultimately limited to the amount of capital utilities are willing or are ordered to provide for measures or guarantee funds. In every state in the country, public and ratepayer funds have been limited by political realities rather than technical potential. A non-utility capital provider or vendor might want to provide more capital for measures because more projects will increase sales and profits.

And this is the key benefit of using the market place to provide capital for measures – the attraction of profit rather than the push of regulation provides the underlying drive to achieve resource efficiency.

Additionally, utility certification resulted in few projects being installed that save resources other than electricity. The only non-electric savings projects were the Coop's residential weatherization projects. And, the Coop's decision to force customers to choose between incentives of between 30 and 85% or PAYS® resulted in a failure to maximize the energy efficiency potential of the Co-op's budget. Except for the vendor-driven point of sale CFL option, most customers dealing with utility staff took the subsidy offer or did nothing. The Coop expended its mandated resource efficiency budget and suffered little rate impact from its PAYS® pilot. We know from the PSNH pilot, that at least municipal customers will take advantage of the PAYS® offer. We know from the Coop's own vendor-driven option that merchants can sell PAYS® products. Indeed, we are told that the point-of-sale vendor is still selling PAYS® light bulbs to consumers. However, most of the available funding for PAYS® measures has gone unspent. We have been told that the Coop is proposing to switch to the PSNH revolving loan fund model. This will reduce its fund for measures from \$500,000 per year to \$50,000 per year.

Before we move onto the potential for PAYS® in Connecticut, are there any questions about the New Hampshire pilots and why we think utilities should not provide capital and certification except for small very controlled pilots

### **PAYS® POSSIBILITIES IN CONNECTICUT**

**(Overhead #13)** We would like to discuss the opportunities we see for PAYS® in Connecticut. Since you have extensive successful experience with utility programs offering incentives, we think PAYS® offers you a chance to reexamine the level of incentive needed once market barriers are eliminated and once vendors have had the opportunity to show what they can and can't do.

Especially in light of the recent issues with your efficiency and renewable budgets, we think there is an opportunity to both add the PAYS® tariff to existing incentive resource-efficiency efforts and to integrate vendor driven PAYS® efforts to accomplish more resource efficiency for more customers with less funding.

We would like to use a couple of examples of PAYS® products to give you an idea of how PAYS® might be used to enhance existing efforts or be used in a vendor-driven effort. For current incentive programs, PAYS® used for customer co-payments can increase fair access to program benefits by removing the upfront cost, debt obligation, uncertainty about occupancy, and split incentive barriers so everyone can participate in these programs. These examples will also illustrate how PAYS® can be used to take advantage of market opportunities to accomplish more resource efficiency with less funding.

**(Overhead 14)** Our first example will be the first PAYS® product sold in America - PSNH's first project. The Town of Stratford did a street lighting change-out. \$13,050 was needed to change and relocate 58 fixtures. The annual savings were

estimated to be almost \$6,300. The project pays for itself in just over two years. BUT, according to the Selectboard, "We could not have done it without PAYS!" PAYS® is not a loan, but a utility bill. PAYS® did not require voter approval. In fact, voter approval was impossible. Despite robust savings; voters had turned down this project just a few years before. They just didn't want to increase taxes in the short term based on the promise they would have lower utility costs in the long term.

This project evidences how PAYS® can overcome debt issues and turn a rejected project into lower tax bills for customers and electricity savings for society. This project did not involve a subsidy, but many of PSNH's projects did -- since customers were eligible for subsidies from the New Hampshire state-wide program. PSNH used subsidies to make more projects cost effective and for reasons of fairness. Evaluating projects based on retail rates would seem to qualify more projects than basing cost-effectiveness on avoided costs. But adding inflation factors, adding externalities, factoring in T&D savings in constrained areas, and including savings for the entire estimated life of the measure instead of just three-fourths of the life might mean that a measure that screens cost effective using a societal test is not cost effective enough to pass as a PAYS® measure. These cases would warrant using a subsidy to ensure willing customers and vendors are not stopped from acting in society's best interest.

Our second example is a program that we developed with the help of Mr. Toleno of Niagara Conservation Corporation for the New Hampshire Electric Coop that resulted in the implementation of the Coop's Point of Sale program. Mr. Toleno agreed to set-up a web site offering customers a chance to look at selected Energy Star compact fluorescent lights or CFLs. Marketing was to be provided by the utility such as bill stuffers or the Coop newsletter -- effectively free advertising.

**(Overhead 15)** The offer was simple. Customers could order between 6-20 CFLs. They paid nothing up front. A charge of \$0.25 per month per CFL would be added to their utility bill for two years. Over the next 24 months, customers would pay \$6 per CFL. This was a risk free offer. If the customer used the CFL for four hours per day (which would be verified by the customer), assuming 40 watts saved (a conservative estimate) and \$0.10 per kWh, the customer's net savings would be \$0.23 per CFL per month. Over the 8,000-hour life of the CFL they were estimated to have net savings of \$26. If a CFL stopped working before the two years was up, the customer would send the non-working CFL back to Niagara which would replace it with a brand new CFL.

The utility's only jobs were to provide marketing and billing and collection. And billing was easy. Once the charge was put on the bill it stayed on for 24 months unless a customer left in which case all charges came due. Niagara would handle all paperwork and warranty issues. The capital provider would pay Niagara \$5.40 per CFL which would be shipped to the customers' home. The remaining \$0.60 would provide a 10.4% return on investment. And according to Mr. Toleno, the prices for the CFLs that we discussed when we developed this idea have gone down -- leaving more funds available for an even higher rate of return.

The order form was also a certification form. Customers were required to verify that the lamp they were replacing was used at least four hours per day. A warning pointed out that if they had used the replaced lamp fewer hours, the monthly PAYS® charge might be more than their monthly savings.

Customers would send in their orders to Niagara which, before shipping the CFLs to customers' homes would put together a list to send to the Coop so it could verify membership (the Coop did not want to give out its membership list). Niagara would send out the CFLs to the customers' homes unless the Coop had a problem with the order and then send the order form to the Coop. Customers would have 2 weeks to evaluate the CFLs. Undesirable CFLs were to be returned to the Coop, which would reduce the number of CFLs on the order form and add the CFL to their inventory for other programs. After two weeks, the charge for each CFL would be added to the customers' bill.

When Steve Rand of Rand Hardware in Plymouth, a local merchant, heard about this deal, he offered to run the same program out of his hardware store. The main difference is that customers could pick up the bulbs when they were in the store. The Coop simplified customer verification by sending forms directly to their customers with their monthly bills inviting them to bring these forms to Rands. The forms identified the customer as a Coop member and had the customers account number hidden on the form to simplify adding charges to the bills. Phone calls took care of those customers who forgot their forms.

Rands also sold subsidized CFLs to Coop members. CFLs were subsidized about \$5, typically bringing down their cost to \$1 - \$3 per CFL. Some customers brought their PAYS® authorization form in and then decided to pay up-front when offered the benefit of the subsidy. However, even competing against subsidized CFLs, the PAYS® CFLs outsold them two to one during the first few months after the Coop offered this option. Even though customers paid more over the 24 months, they paid nothing up front (and 10 CFLs could cost \$30) and if the CFL stopped working they'd get a new one.

Compare the cost of the two options to the Coop. With PAYS®, the billing system changes were a one-time expense amortized over the life of all PAYS® products. MIS added one charge to participants' bills. Otherwise there was no cost. On the other hand, for each subsidized CFL sold, Coop members had to pay \$5 in addition to significant program overhead for statewide oversight, marketing and administration. In many cases, the total cost for the statewide subsidy per CFL exceeded the cost that Niagara or Rands would charge for a PAYS® CFL.

This example demonstrates a vendor driven program with a relatively low cost measure. It is less expensive than a subsidy offer. More CFLs sold. And the vendor, who benefited from sales and customers coming into his business, absorbed marketing, warranty and administrative costs. And without PAYS®, when and if the subsidy program ends, either because of lack of interest or loss of funding, how many customers will buy replacement CFLs at \$6 - \$8 a pop (or \$60 to \$80 for ten).

**(Overhead 16)** The next example is another Coop project, described in the March 2003 Coop Newsletter. A health club in Lincoln NH replaced its air handling system. The club has saved \$800 per month on its electric bill and about \$166 a month on avoided maintenance for the outdated air handling system. The club pays only \$530 a month for a net monthly savings on its utility bill of \$270 and a total monthly savings of more than \$430. The club stated that it could not have done the project without PAYS®. They could not have afforded the co-payment or added any debt.

This example illustrates that to customers, non-energy savings can be as important as energy savings, even though these are often ignored in programs that only consider electric savings because they use ratepayer funds to subsidize measures. With PAYS®, since customers pay 100% of the cost, if policy makers so choose, other verifiable savings can be included.

**(Overhead #17)** Our next example was developed with the help of Gene Overmeyer of Water & Energy Services out of St. Pete Beach Florida. Gene develops ESCO proposals to customers. Although Water & Energy Services usually combines water and energy savings measures (such as heating system upgrades or controls) to its customers (owners of large multi-family properties such as hotels or public housing managers), this example only includes water saving measures. For public housing projects, Gene estimates that they can install a flapperless toilet, combined with low flow showerheads and aerators (both with tamper resistant screws) for about \$500. These measures are estimated to reduce average water usage from 80-125 gallons per person per day to 45 gallons per person per day. This represents a net savings of at least 35 gallons per person per day.

Assuming 2.5 persons per unit results in almost 32,000 gallons of water and sewer saved per unit each year. In a number of cities, for example Atlanta, combined water and sewer rates equal almost a penny a gallon. But there are a number of areas such as Las Vegas where combined water and sewer rates are around seven tenths of a cent a gallon. That would translate to annual savings of about \$223 or just over a two-year payback. But housing authorities have annual budgets and restrictions on the types of long-term agreements they can sign. Even such cost effective projects are not a sure sale.

**(Overhead #18)** With PAYS®, Gene would be able to make the following offer to a housing authority -- after faxing it and getting approval from a certifying agent. The Housing Authority would hire Water & Energy Services to install the measures in each of their units.

Assuming a 7% cost of money and a five-year payment duration, for each unit the numbers might look like this:

The housing authority would make a monthly payment of \$9.90 that equals annual payments of \$142. It would receive gross monthly savings of \$18.63 or \$223 in annual savings. The net savings come out to \$8.73 per month or \$104 per year per unit. Since this is just a tariff, the housing authority would not need special

approvals to implement the project; these PAYS® products are not a loan and have no lien – just a lower bill.

Water & Energy Services gets an easier sale. For each unit, taxpayers get net savings of more than \$500 over the five-year payment period and \$223 each year thereafter, assuming no water or sewer rate increases. And, 32,000 gallons per unit are saved each year..

This example shows how cost effective non-electric savings can be. In Denver, at a meeting of the NARUC Water Committee, I used this example to show Commissioners how they could achieve resource savings even for water companies they did not regulate – by creating a PAYS® tariff for a utility that they did regulate. You can ask Gene how many projects he thinks he can sell in Connecticut if you create this tariff and get a capital provider.

Our last example is not as well fleshed out as the others that are all based on real projects. I won't use overheads as they tend to present numbers as real. However, it illustrates how PAYS® might be used in a store to make more efficient appliances attractive to customers.

Imagine walking into an appliance store because one's clothes washer is on the fritz and needs repair. Don Ahern of New Britain Appliances told us that a less efficient, nice quality, top loader might sell for \$400 while one of the more popular, highly efficient, front loaders, which has the potential to save, water and sewer, hot water heating costs, and detergent will sell for around \$1,000.

The first thing the sales person could say once they learned you were in the market for a clothes washer is, I may have a great deal for you. Where do you live? (They ask this to elicit whether you pay for water or sewer. The salesperson may have to ask directly). If you live in a place where you pay for water and sewer, he or she would next ask, how you heat hot water and then how many loads of laundry do you usually do a week (this would be used to compute potential savings based on your actual usage). A simple table would enable the sales person to check if you would save enough that he could make the following offer:

“You can buy this \$400 machine for \$400. Or you can buy for this front-loading model that will save you money over time, and is one of our best sellers. It normally sells for \$1,000, but I can give it to you for a payment of only \$350; you pay the balance on your utility bill, but only as long as it continues to work and save you money. There's no credit check, and no credit card. I'll send a form to your utility and they will add the charge of \$9.30 per month to your utility bill. But according to these estimates (shows the chart) your monthly savings will be \$12.50 a month on your water and sewer, and gas bills – because the more efficient unit uses less water and less gas to heat hot water. Your net savings during the 7 and one half-year repayment period will be \$3.20 each month (based on current utility rates). You'll take home a state-of-the-art washer for less money down than the basic model, and save more than \$200 over the life of the washer. It's also easier on your clothes. You may have heard about this program in your newspaper, on TV or from a notice on your utility bill.”

Think about it. If customers really have heard about the PAYS® new appliance option, and if their usage and projected savings are robust enough, who wouldn't agree to pay less to save money? All they would have to do is identify their utility companies and sign an agreement certifying their usage -- with a caution that their savings were based on their estimates. The customer saves money each month. The vendor sells a more expensive product. Society gets water and energy savings.

We chose this example because it contrasts with other so-called new construction programs. First, all savings can be included in the cost effectiveness calculation--not just one resource. Second, you don't have to spend lots of public money to try to estimate what types of models that purchasers -- absent a program-- would buy and what their usage is likely to be. However, if public or ratepayer funds are used to subsidize purchases, determining baselines is critical to protect against free ridership. With PAYS® the calculation is simpler. It is based on retail rates and each customer's reported usage. Free ridership is not an issue. It doesn't matter if they would have purchased the unit anyway, since they pay for the unit either way and ratepayer or public funds are not used or wasted.

**(Overhead 19)** Again, the PAYS® system can be used to make existing programs fairer by making it easier for all customers to take advantage of the offer. They can be used to lower or even eliminate incentives. Incentives should only be needed if the societal cost savings are higher than three fourths of the retail savings over three fourths of the measure life and then only to the extent necessary to make the measure cost effective. And, most importantly, PAYS® can be used to turn vendors loose on an established playing field without the constraints of limited program funding or utility program management.

Before we discuss what it is needed to implement PAYS® in Connecticut, should you want to, are there any questions?

### **What is Needed to Implement PAYS®**

**(Overhead 20)** In this last section, we want to highlight what is needed to implement a PAYS® effort in Connecticut. The first thing that will be required is a commitment on the part of the Commission and the DPUC staff. PAYS® is created by utility regulators. If regulators don't want to do it, nothing will or should happen. PAYS® offers the promise of unlimited potential for cost effective resource efficiency products and services. But, as we will discuss in this section of our presentation, it requires a lot of up-front work and cost to create a marketplace that is simple enough for vendors and customers to use. Unless the DPUC is convinced that PAYS® can work and that it can increase consumer investment in resource efficiency using less public money, it doesn't make sense to pursue it.

Lets assume that the DPUC is convinced that PAYS® can increase consumers' investment in resource efficiency. We think the next step is to open a docket or issue an order setting up the ground rules for a Connecticut PAYS® effort. Various parties may be averse to PAYS®' new approach, to the potential of unlimited savings, or to any change to the status quo. An order is probably

necessary to let everyone know that PAYS® is coming and to invite efforts to set it up so that it works. The order should define the initial target market and scope and answer a number of key policy questions: Should PAYS® in Connecticut be resource blind? Should it be for all customer classes? Should it be part of all programs? Should it be vendor driven? These are all policy issues that the Commission can and should address in its Order to help direct those entrusted with fleshing out the details.

You may have noticed that we have used the registered trademark symbol during this presentation. On July 29<sup>th</sup> of this year, we received formal approval of our request to trademark "PAYS®." Commissions that want to avoid confusion should use the registered symbol in their order to ensure everyone knows what they are referring to when they say "PAYS®". Use of the trademark will ensure at a minimum the three key elements: A tariff that assigns repayment of measure costs to the meter location. Billing and payment through a charge on the distribution utility bill with disconnection for non-payment. And, independent certification that products and installation are appropriate and that estimated savings will exceed payments.

Then, we recommend setting up an old-fashioned collaborative to work through the issues. We think a hearing examiner or an independent expert should be designated by the Commission and required to write up a recommendation for how to implement PAYS® in Connecticut. Empowering one person is necessary so that things do not get bogged down, but key players have a forum to raise and work through key issues such as billing, collection, bad debt, etc.

This person should be someone familiar with the issues but not have a vested interest in them. He or she should be someone that the Commission trusts to give a fair hearing to all the issues but be able to make reasoned decisions in the face of disagreement.

Before any other work is undertaken, a reliable source of capital needs to be located. Without it, there can be no market driven PAYS® effort regardless of the level of DPUC commitment, vendor and consumer interest, or innovative design. Based on our work to date, we have some ideas that we want to share with you.

First, as we said earlier, we think it is unlikely that traditional banks will be willing to make unlimited capital available to your PAYS® effort. PAYS® is too different from the investments with which they are familiar and which they are authorized to make. Again, PAYS® does not include consumer loans, liens, foreclosure, debt to equity ratios, etc. We would recommend negotiating with pension or trust fund managers and insurance companies. These entities are looking for reliable cash streams at reasonable rates of interest. That is what PAYS® can offer. In today's economy, such opportunities are limited.

It is likely that, at least initially, to convince potential capital providers that they will be sure to recover their investments and make a reasonable return (in other words to obtain sufficient capital for your PAYS® efforts), the DPUC will need to adopt the following policies:

Our first recommendation is to treat bad debt resulting from traditional non-payment the same as all other utility bad debt. We are not referring to non-payment due to measure failure. We are referring to customers who fail to pay PAYS® charges among other charges on their bill. For today's purposes, we are assuming that in Connecticut as in New Hampshire, since the PAYS® charge would be authorized by the DPUC for purposes within its jurisdiction, there would be no need to get statutory authorization, but the lawyers will want to confirm this.

This system for dealing with bad debt is in place and the rules have been refined over the years. It has been perfected to the extent that for most utilities bad debt is only a tiny percent of their overall collections. And, without using this system, there are too many opportunities and there is too much incentive for utility staff to try to take care of customers by waiving legitimate PAYS® charges. The result would be a very unreliable cash stream and few if any capital providers. Given the success of utility collections, the amount of bad debt is likely to be tiny – again, there is none so far in PSNH's pilot and almost none in the Coop's pilot.

The second policy recommendation is to set up a guarantee fund to pay for situations where measures fail, the warranty is over, and the measure cannot be affordably repaired. Based on our work with utilities and the current experience in New Hampshire, we think a fund equal to five percent of the total measure cost will be more than sufficient. However, talking with capital providers and discussing what they think is needed for a guarantee fund will be essential.

The third policy recommendation is to use New Hampshire's approach to measure failure. If a measure fails, once it is reported, there are 30 days to repair it before payment is waived. If the failure occurs while the measure is under warranty, the repair is made. If it occurs after warranty and can be made affordably, the measure is fixed. The PAYS® charge doesn't change but the payment period is extended to recover the repair costs. Again, since there is positive cash flow, whoever occupies the premises will still save money during the payment period compared with not having the measure. This approach assures the reliability of the cash stream. Whoever is responsible for certification and authorized to distribute the guarantee fund would make the decision whether repair is viable or the remaining payments need to be waived and the guarantee fund accessed.

**(Overhead 21)** Once, and only once, capital is committed, the Collaborative should focus on other key issues: Certification, the PAYS® Tariff, Contracts (including any particular terms required to keep within state bond issuance rule exemptions), Billing & IS modifications, and Marketing.

Clearly the work done in New Hampshire, the papers we have written and the presentations we have made can help you with your effort. There are proposals to deal with many if not most of the issues that will surface during the work of the Collaborative. PAYS America is a non-profit. We can help your effort if you want. If needed, grant funds can be sought to pay for our assistance.

Here are a few other recommendations. To keep overhead costs low, we think Connecticut should consider vendor certification backed up by verification of savings by the certifying agent. It is a lot less expensive to have the vendor get the data and prepare the savings estimates using a prescribed format than having program staff do it. Vendors will learn quickly how to do it right because they can't afford to waste time and money on mistakes. It is also a lot easier to call a customer to verify usage estimates or existing conditions than for program staff to meet with them and figure it out.

If your PAYS® effort is going to be really big, we also recommend using selected sampling rather than 100% verification. To make sure vendors don't try to cheat, the penalty for misrepresenting savings or tampering with the savings estimates is both a fee (to pay for more inspections of their work) and a loss of payment sufficient to make the measure cost effective to the consumer – up to the entire cost. Such a strict system will protect vendors and consumers alike from the fly-by-night operators.

Additionally, we recommend you consider a small fee to vendors who want to be certified and an additional fee based on a small percentage, for example one percent of a measure's or project's cost, to pay for the cost of certification. Again the principal is that the people who benefit from the PAYS® effort should pay for it.

Commissioner Brockway has worked on the New Hampshire contracts and tariff and has developed better forms than currently used by the utilities to address issues raised by consumer advocates in her state. There are a number of other lessons to be learned from the New Hampshire pilots.

We are not going to address billing and information system changes here. It would take too much time. We do have recommendations for the type of information that should be made available to purchasing and subsequent customers, how it should be presented, and what needs to be made available to utility customer service staff who deal with PAYS® customers.

As for marketing, let's go back to the appliance store example. If customers are going to take advantage of PAYS® opportunities, they will need to have confidence in the system. If they have never heard about PAYS®, we doubt many customers will accept the offer. On the other hand if they have heard about PAYS® frequently enough to remember something about it, consumers will be more likely to take advantage of various PAYS® opportunities.

Enrolling the media to explain the program in newspapers, during television news programs, and in talk shows; using PSAs and bill stuffers; and sending speakers to interest groups (especially those interested in climate change, the environment, and community service) are examples of the type of low cost marketing that can be done before PAYS® is on the street so that customers don't hear about PAYS® for the first time in a store.

Before we once again take questions, there is one more thing we want to add. Your current programs did not happen overnight. They are the product of years

of hard work. If you agree that PAYS® presents an exciting new opportunity to break through barriers that continue to hamper resource efficiency efforts, make sure you leave enough time to get it right.

Are there any questions?