



- 1           b. Bill customers for these products using PAYS Delivery Charges (PDCs) that  
2           are treated under NHPUC 1202.02 as a “basic utility service” like any other  
3           delivery service charge, thereby allowing disconnection for non-payment (a  
4           proposed PSNH tariff is attached as Appendix E and NHEC will submit a  
5           tariff upon NHPUC approval of this pilot);  
6  
7           c. Assign the PDC for a long-lived PAYS product to a meter location, so that  
8           succeeding customers at that location are required to pay the PDC until PSNH  
9           or NHEC have recovered all costs for the product installed at that location  
10          (including installation, financing, administration, and repairs);  
11  
12          d. Increase the number of PDC payments when necessary to allow PSNH or  
13          NHEC to recover additional financing costs resulting from missed payments  
14          or any repair costs as long as the measure is functioning through the period of  
15          the final payment;  
16  
17          e. Account for and manage PDC accounts receivable the same as any other  
18          unpaid delivery service charges.  
19  
20          f. Recover from all customers or members any program expenses not recovered  
21          from customers who purchase PAYS;  
22  
23          g. Require any customer who takes occupancy of premises with a PAYS product  
24          installed to:  
25               • make PDC payments assigned to that location for the time the customer  
26               occupies the premises and the measure works;  
27               • pay the PDC even if the measure is not working if the customer does not  
28               allow PSNH or NHEC to arrange for repair or replacement of failed  
29               equipment; and  
30               • pay for repair or replacement of the installed equipment if the customer  
31               damages it.  
32  
33          h. Enter into agency relationships with customers and customers’ contractors to  
34          provide basic consumer assurances for all PAYS product purchases including  
35          certifying that measures are cost effective for installation at the specified  
36          locations and that measure specifications and installation standards are clear  
37          before any work begins; and  
38          i. Receive allowable shareholder/member incentives for approved PAYS pilot  
39          budgets.  
40  
41

## 1 II. Background and Design Overview

### 2 3 A. The PAYS Concept

4  
5 PAYS was first described in a December 1999 paper by the Energy Efficiency Institute (EEI)  
6 commissioned by the National Association of Regulatory Utility Commissioners (NARUC)  
7 Energy Resources and the Environment Committee (c.f., Appendix B for a comparison of PAYS  
8 as described in EEI's paper and the structure proposed for this pilot). Pay-As-You-Save  
9 products offer consumers the most hassle and risk-free way to use energy efficiently and save  
10 money immediately. PAYS products are hassle free because consumers can purchase them in  
11 one simple transaction with no up-front payment. Since these products are guaranteed by a  
12 consumer-trusted organization and there is no obligation to pay if for any reason the energy  
13 saving measure stops working, PAYS products also relieve consumers of the major risks of  
14 investing in energy efficient technologies.

15  
16 There are long-term public benefits from investment in cost effective energy efficient  
17 technologies. Lower usage means less pollution and a smaller (and therefore less costly)  
18 transmission and distribution infrastructure. Using energy efficiently extends our limited  
19 energy resources. Eliminating energy waste also lowers energy costs. Lower costs improve  
20 the competitiveness of businesses and increase customers' discretionary income, thereby  
21 raising their standard of living.

22  
23 While these benefits may seem sufficient to justify investment in energy efficiency, individuals  
24 typically do not use societal criteria when making personal or business decisions. Consequently,  
25 if policy makers want individuals to invest in energy efficient technologies so that society can  
26 realize the benefits, the obstacles that inhibit individuals from purchasing them must be  
27 addressed.

28  
29 PAYS involves packaging energy efficient technologies as products that consumers want to buy  
30 and are willing to pay for. PAYS products are packages of one or more cost-effective energy  
31 efficiency measures billed as part of the monthly electric bills of the customers who receive the  
32 savings. Only technologies that customers are confident will produce savings will be packaged  
33 as PAYS products. Unlike traditional energy service contracts, specific savings are not  
34 guaranteed. Instead, payments are structured so that for both the short and long-term, customers'  
35 savings are estimated to exceed their payments. In effect, PAYS allows customers to pay for  
36 energy efficient measures using a portion of their expected savings.

37  
38 In its November 1, 2000 order, the NHPUC wrote: "A properly designed Pay As You Save  
39 (PAYS) program, as described in *Public Service Company of New Hampshire*, 84 NHPUC 185,  
40 191 (1999), could potentially unleash pent-up consumer demand for efficiency measures." If  
41 proven successful, PAYS products will help to remove significant and persistent market barriers  
42 to the installation of cost-effective energy efficiency measures, and significantly increase the  
43 penetration of measures.

## 1 **B. How PAYS Addresses a Key Market Barrier**

2  
3 Market barriers are often cited as major obstacles to widespread consumer investment in cost-  
4 effective energy efficiency. Over the past twenty years, development of new more consumer-  
5 responsive energy efficiency products and programs has overcome many of these market  
6 barriers. Quality energy efficiency products along with information about their proper use and  
7 application are more readily available. Financing offered by utilities, banks and innovative  
8 lending organizations make paying for energy efficiency measures easier and subsidies often  
9 provide further incentives for consumers to purchase these products.

10  
11 Despite these efforts, many consumers still have not implemented the majority of cost-effective  
12 energy efficiency measures. A major barrier remains as long as consumers are required to accept  
13 all of the risks that savings from their energy efficiency investments may not materialize. PAYS  
14 eliminates this market barrier in the three most likely situations where consumers worry that they  
15 will have to pay for the measures, yet not receive the savings.

16  
17 1. Customer terminates occupancy at premises where measures were installed. Assigning  
18 charges to the meter location and requiring the electric delivery service company to bill and  
19 collect charges as part of their regular billing ensures that the person who benefits from the  
20 savings at a location (the person who pays the bill) pays the charges that produce those savings.  
21 With PAYS, when a customer terminates occupancy at a location, the obligation to pay for  
22 measures is disclosed then either paid in full or transferred to the next customer at that location  
23 (at the option of the customer or building owner). The next occupant gets the savings and  
24 assumes any remaining payment obligation. The delivery service company has a key role as the  
25 only entity that bills for energy at each location and is capable of transferring energy charges to  
26 successive occupants.

27  
28 2. Measure costs exceed savings. PAYS ensures savings exceed measure costs in three ways.  
29 First, PAYS incorporates a certification process to assure customers that measures will be  
30 installed only when independent analysis indicates that estimated savings will exceed measure  
31 costs. Secondly, measures will only be certified when they are projected to function for at least  
32 as long as the payment term. Lastly, customers with PAYS measures are permitted to stop  
33 payments when measures fail if they notify their utility and their utility does not repair or replace  
34 the measures.

35  
36 3. Developers and landlords don't get the savings from their investment. PAYS products  
37 eliminate any disincentive to invest in energy efficiency for developers and landlords who do not  
38 pay the energy bills. With PAYS products, these decision makers can approve installation of  
39 measures they know improve the value of their buildings and that will reduce occupants' energy  
40 bills without incurring any financial obligation themselves.

41  
42 Additionally, PAYS products can eliminate difficulties for federal agencies, state and municipal  
43 building operators, non-profits, and other organizations that cannot easily incur long-term debt  
44 obligations. Because these charges are part of the monthly utility bills, they will be treated as  
45 energy charges by funding sources. Additionally, the term of the obligation is only as long as the  
46 customer occupies the building and consumes energy, so if the organization relocates or ceases

1 operations, the charges will be paid in full or disclosed and then transferred to the next occupant.  
2 These organizations are obligated to pay only what they already pay -- their monthly utility bills.

### 3 4 **C. Pilot Design Overview**

5  
6 PSNH and NHEC retained EEI to work with their staff and the ECS to develop this program  
7 design. The design is the result of a cooperative effort over the past three months involving  
8 meetings between ECS, PSNH and NHEC staff, and EEI; comments at a public hearing in  
9 Concord; numerous meetings with representatives of banks, other financial institutions and the  
10 state economic development office; and two customer focus groups.

11  
12 The proposed pilot builds on PSNH's and NHEC's existing energy efficiency programs and will  
13 complement these programs. PAYS products may be offered to all customers as a stand-alone  
14 program, or as a component of the companies' energy efficiency programs. PSNH and NHEC  
15 will certify as PAYS products only those cost-effective energy efficient technologies that will  
16 produce reliable savings and provide the quality of service customers expect from their energy-  
17 using equipment. By packaging energy efficient technologies as risk-free and hassle-free PAYS  
18 products, the companies hope to stimulate more energy efficiency investment by their customers.  
19 At the end of this pilot effort, PSNH and NHEC will submit a report to the NHPUC summarizing  
20 their conclusions and any recommendations for continuation, expansion or modification of the  
21 PAYS effort.

22  
23 Initially, the companies propose to make only a limited number of PAYS products available to a  
24 limited number of customers. PSNH and NHEC will comply with the Commission's order that  
25 the PAYS pilot cost no more than 10% of their approved energy efficiency program budgets. It  
26 should be noted that although the pilot will operate through 2003, customers will be fulfilling  
27 their PAYS responsibilities from the pilot until the last payment period has ended (i.e., perhaps  
28 as long as 10 years after the end of the pilot).

29  
30 In order to maximize limited pilot funds, PSNH will target most of its funds to municipalities  
31 and schools. PSNH already has Account Executives (AEs) serving the needs of these customers.  
32 Initially focusing on these larger customers will also limit the scope of the billing system  
33 changes required for a pilot. NHEC will target most of its pilot funds to its small commercial  
34 and residential customers because it has Energy Services Staff (ESS) working with these  
35 customers. However, to ensure that the companies have maximum flexibility trying out this new  
36 approach and can quickly respond to market needs, the companies are seeking approval to  
37 introduce PAYS products into all customer sectors at this time.

38  
39 The companies propose to market and arrange for the sale of selected PAYS products primarily  
40 using their current energy efficiency program delivery infrastructure. PAYS consumer  
41 assurances such as extended warranties, product specification, disclosure of charges, and agency  
42 relationships ensure that customers pay only for measures that function and produce savings.  
43 Since both PSNH and NHEC customers trust their utility and the expertise of their energy  
44 efficiency program delivery staff, the companies will also fulfill these roles during the pilot.

45  
46 To ensure that customers do not have to pay for measures up front or apply for a loan, which  
47 may prevent them from installing measures, customers who buy PAYS products will be allowed

1 to pay for them with a PDC on their monthly bill. If the product fails, the PDC will cease unless  
2 the product is fixed or replaced. If the customer no longer occupies the premises where a PAYS  
3 product has been installed, that customer's obligation to pay also ends.

#### 4 5 **D. PAYS Product Benefits**

6  
7 A pilot program offering PAYS products to customers participating in selected PSNH and  
8 NHEC programs provides a new opportunity for customers to purchase energy efficient  
9 technologies. PAYS eliminates market barriers and program obstacles that have impeded  
10 customer acceptance of energy efficiency for years, including:

11  
12 1. Eliminating Split Incentives. When developers, property owners and managers make  
13 equipment decisions for premises for which they do not pay energy costs, there is a split  
14 incentive. The developer, property owner or manager has an interest in keeping his or her costs  
15 as low as possible and energy efficiency or life-cycle cost impacts are often not considered,  
16 despite the fact that more efficient equipment can result in lower energy costs to the occupants.  
17 Since occupants who do not own the property do not make the installation decisions without  
18 outside intervention, they (and society) are almost always forced to accept the owner's  
19 installation of less efficient equipment.

20  
21 PAYS changes the traditional relationships among developers, building owners, building  
22 managers, occupants, and energy efficient measures. PAYS creates an incentive for developers,  
23 building owners and building managers to invest in energy efficiency by allowing them to  
24 improve the value of their property at no cost to them. PAYS also provides occupants with a  
25 mechanism for buying energy efficiency and realizing the cost savings while occupying property  
26 that they do not own. This pilot program will offer opportunities to test PAYS' ability to  
27 overcome this barrier.

28  
29 2. Reducing Risk for Customers Uncertain of Future Occupancy. Some customers have  
30 reported to PSNH and NHEC that they have not undertaken energy efficiency projects because  
31 they are unsure of how long they will own or occupy their premises. PAYS eliminates this  
32 problem because customers only have to pay for measures as long as they realize savings. When  
33 their occupancy ends, their obligation to pay ends.

34  
35 3. Capturing Non-Electric Savings with Electric Utility Programs. Most utilities restrict their  
36 incentives and their programs to electricity-saving measures, reasoning that electric customers  
37 should not be required to pay for efficiency measures that do not save electricity. Since  
38 electricity accounts for less than 14% percent of the total energy consumed in buildings in New  
39 Hampshire (US Department of Energy, State Energy Data Report 1997, "Consumption  
40 Estimates"), the current emphasis on electricity-saving energy efficiency measures results in  
41 missed opportunities, as the bulk of energy use and likely the majority of energy efficiency  
42 opportunities involve other fuels.

43  
44 Since PAYS seeks to collect the costs of installing energy efficient technologies at a customer  
45 location from the customer(s) who own or occupy that location, PAYS offers the opportunity for  
46 the companies to meet their customers' desires for energy efficiency program services related to  
47 all fuels without shifting significant program costs to other electric delivery service customers.

1  
2 In this pilot, specifically in the Residential Weatherization component, NHEC will test the  
3 impacts of a fuel-blind effort and offer PAYS products that address energy saving opportunities,  
4 regardless of fuel source.

### 6 **III. Pilot Infrastructure Design**

7  
8 PAYS products require an infrastructure that includes special consumer assurances; the  
9 integration of PDCs into the electric delivery service company's regular billing system; one or  
10 more financing entities supplying capital; uniform, simplified contracts; and manufacturers and  
11 vendors certified to package and market their energy efficiency products as PAYS products.

12  
13 PSNH and NHEC will fulfill all PAYS responsibilities during this pilot. They will provide  
14 PAYS product marketing, consumer assurances, financing and billing and collection services.

15  
16 Three of the components of the PAYS infrastructure are new to the energy efficiency  
17 marketplace and are key to the success of PAYS products:

- 18
- 19 • billing with a PDC assigned to a location,
- 20 • special consumer assurances arranged by a certifying agency, and
- 21 • risk management mechanisms that eliminate or reduce risks for purchasers of PAYS
- 22 products.
- 23

24 PAYS products use these three features to remove barriers to customers purchasing energy  
25 efficient measures. A detailed explanation of these components and how they will work in this  
26 pilot program follows.

#### 27 28 **A. PAYS Delivery Charge (PDC)**

29  
30 1. How the PDC Works. Customers will be billed for measures in this pilot with a PAYS  
31 Delivery Charge. The PAYS approach relies on the PDC being treated under NHPUC 1202.02  
32 as a "basic utility service" like any other utility delivery service charge. The provider of the  
33 capital who is accepting PAYS program risks (see "Risk Analysis") is required to forego  
34 traditional loan security, such as access to a defined borrower subject to credit checks or liens on  
35 property. The reliability of the utility delivery service charge system, including the threat of  
36 disconnection, is envisioned as providing capital providers with a comparable level of security.

37  
38 The companies will arrange for contractors to be paid for installation of PAYS products that  
39 customers purchase, so that customers have no up-front costs and contractors are assured of full  
40 payment. PSNH and NHEC may use their own capital (especially for small projects), a  
41 revolving loan fund, or other funding methods (see "Sources of Capital" below). The companies  
42 will seek the source of capital with the best combination of low cost to participants and low or  
43 no risk to PSNH and NHEC .

44  
45 Customers who purchase PAYS products will pay for them with new charges on their monthly  
46 utility bill. PDCs will be structured so that they are less than the expected savings, and the  
47 duration of the payments is less than the measure's anticipated life.

1  
2 For PAYS measures that are permanently installed (e.g., heating and ventilating systems), the  
3 customer will pay the PDC until all product costs (materials, installation, repairs, administration,  
4 and financing) have been collected, the customer terminates his/her account, or the measure  
5 stops working. If the customer terminates the account, the next customer at that location will be  
6 required to assume the same monthly payment obligation until all PAYS costs are collected, that  
7 customer terminates the account, or the measure stops working. A customer may elect to pay the  
8 entire PAYS obligation in full at any time without penalty (e.g., when a facility is sold).

9  
10 When a customer reports that a PAYS measure is not working, PSNH or NHEC will verify the  
11 situation. The companies will then either arrange for the measure(s) to be repaired or replaced or  
12 permanently terminate the PDC payment obligation. Once measures are repaired or replaced,  
13 PSNH and NHEC may extend the total number of payments to recover any additional measure-  
14 related costs (e.g., repair or replacement, additional financing, administration).

15  
16 For portable PAYS products that customers are likely to take with them when they relocate (e.g.,  
17 compact fluorescent lights), if the customer terminates his/her account, (s)he will be required to  
18 pay off any balance.

19  
20 2. Calculating the PDC. The companies will determine the PDC amount for each measure. No  
21 measure will be approved as a PAYS product unless the measure's total cost (measure cost,  
22 installation, and financing) can be recovered with payments equal to no more than two-thirds of  
23 the estimated savings paid over three-fourths of the estimated measure life (or the entire warranty  
24 period). This formula ensures that as long as the savings estimates do not exceed the actual  
25 customers' savings by more than 50%, the customer will be assured of net savings.

26  
27 Each specific charge will be established to create the best situation for the customer. Two  
28 opposites must be balanced: short payment periods and low payment amounts. For the most  
29 cost-effective measures, the PDC will be structured so that the customer gets a significant  
30 percentage of the savings in the shortest possible payment period. For measures with longer  
31 paybacks, the payments will be spread over the entire three-fourths of the estimated measure life  
32 in order to maximize near-term customer savings. Examples of calculated PDCs appear in  
33 Appendix A.

34  
35 PSNH and NHEC will administer the pilot to allow significant flexibility for their customers.  
36 Customers may be permitted to negotiate shorter payment periods by increasing the monthly  
37 charge and accepting a smaller percentage of the savings. However, such customers will not  
38 have the opportunity to assign charges at these payment levels to the meter. If such customers  
39 terminate their accounts they will have to satisfy the remaining PAYS obligations (as with  
40 portable PAYS products). By reducing the amount of savings realized by the customer, (s)he has  
41 reduced the assurance of savings for subsequent customers who did not purchase the measure.

42  
43 The companies will incur new costs from bad debt and administration associated with the PAYS  
44 pilot. Additionally, if a PAYS customer misses payments or portions of payments for any  
45 reason, the companies will incur additional financing and administrative costs. Similarly, the  
46 companies may incur costs for measure repair or replacement at a location if a measure fails after  
47 the warranty period. PSNH and NHEC may extend the number of PDC payments for a location

1 in order to recover the costs for repairs and missed payments. The companies may also increase  
2 the PDCs for all PAYS products to help cover costs for PAYS bad debt and administration.

3  
4 Finally, while designing a specific PAYS product, a fully paid service contract may be required  
5 as part of the product design to ensure that desired regular maintenance is performed. The cost  
6 of any required service contract will be included in the calculation used to determine whether the  
7 measure qualifies as a PAYS product (i.e., the total annual PDCs do not exceed two-thirds of the  
8 estimated annual savings).

9  
10 3. Billing Protocols. The billing systems of both PSNH and NHEC will be modified for the pilot  
11 so that PAYS charges can be added to customers' monthly bills. The PDC will appear on the  
12 customer's next monthly bill after installation of PAYS products has been approved.

13  
14 Other important PAYS information will be sent to PAYS customers in a letter. This letter will  
15 note each specific measure, its cost, the number of remaining payments, and the estimated  
16 savings. It will also remind customers to call their utility if the measure fails and to disclose the  
17 PAYS PDC to the next customer. At a minimum, the letter will be sent annually to customers at  
18 locations with outstanding PDC obligations.

19  
20 4. Unpaid PDCs. Any unpaid PDCs will be treated as all other unpaid delivery service charges.  
21 The companies' billing systems currently will not track these receivables separately. To the  
22 extent possible, the companies will note PAYS bad debt to ensure that program funds are  
23 appropriately charged.

## 24 25 **B. Consumer Assurances**

26  
27 1. Basic Consumer Assurance. The most important PAYS assurance is that customers pay for  
28 cost-effective energy efficient measures only while they occupy the premises where the measures  
29 were installed. Customers also need to know that if measures fail during the payment term, their  
30 PDC ceases if the measures are not repaired or replaced.

31  
32 The ESS or AE will explain projects to customers considering the purchase of a PAYS product  
33 and be prepared to review detailed savings estimates with each customer. Most customers  
34 understand that fewer watts, fewer fixtures, more efficient motors, or more efficient heating and  
35 ventilation equipment reduce their energy costs. Only the most cost-effective projects, those that  
36 the ESS or AE estimate can pay for themselves with two-thirds of their savings over three-  
37 quarters of their useful life, will be offered as PAYS products.

38  
39 PSNH and NHEC will offer other assurances that inspire consumer confidence in the purchase of  
40 PAYS products. The companies' willingness to act as the customer's agent and work with the  
41 customer's contractor will assure the customer that the PAYS product will be installed by  
42 someone they trust. When customers do not have a contractor who can install the product,  
43 PSNH's and NHEC's offer to arrange for qualified contractor bids and installation inspections  
44 will also create assurance that PAYS products will be installed properly and create savings.

45  
46 Other consumer benefits specific to PAYS products that will be tested in this pilot include the  
47 use of simple contract forms, one-stop shopping, and the simplicity of making one monthly

1 payment for both utility delivery services and energy efficiency. Proper disclosure of PDCs to  
2 subsequent customers prior to their taking occupancy assures that they will only take occupancy  
3 with full knowledge of their PAYS obligations and benefits.

4  
5 The costs PSNH or NHEC may incur by assuming the PAYS consumer assurance role will  
6 include any costs to back up warranties (beyond those provided by manufacturers or vendors) for  
7 measures that fail to produce savings (e.g., a measure ceases to function during the payment  
8 period). The companies' funds would also be at risk if a building burns down and PAYS  
9 measures are destroyed, if there is prolonged vacancy at a location, or bad debt associated with  
10 premises with installed PAYS products. Additionally, PSNH or NHEC may determine that it  
11 cannot justify collecting PDCs from a new customer for a PAYS measure that offers no savings  
12 to the customer based on a new use for the premises (see "Risk Analysis" for a more complete  
13 list of program risks and how they will be addressed).

14  
15 2. Agency Relationship & Agreements. PSNH and NHEC do not propose to interfere in the  
16 legal relationships between customers and energy efficiency vendors. There is a well-established  
17 body of law protecting both parties. However, to simplify their customers' decision-making  
18 process (a key PAYS element), the companies may enter into an agency relationship with  
19 customers purchasing PAYS products and their customers' contractors, especially residential and  
20 small commercial customers. Customers who choose to enter into the agency relationship will  
21 be required to sign a Purchase Agreement with PSNH or NHEC that establishes this relationship.  
22 Once a Purchase Agreement has been signed the utility will act as the customer's agent with a  
23 specific contractor approved by the customer, providing that contractor signs the Contractor  
24 Installation Agreement (and if the customer is not the building owner if the landlord signs the  
25 Landlord Agreement). As part of this agency relationship, the companies will:

- 26  
27 a. Be the customer's exclusive agent to coordinate and facilitate the installation of the  
28 PAYS measure(s) including arranging for servicing or replacement if any PAYS  
29 measures fail prior to the customer making final payment;  
30  
31 b. Enter into the PAYS Contractor Installation Agreement with the contractor on behalf of  
32 the customer for the purpose of installing the PAYS measure(s) and related work,  
33 creating an Independent Contractor-Customer relationship. The PAYS Purchase  
34 Agreement between the utility and the customer will make it clear to customers that the  
35 contractor is not an employee or agent of the utility and is solely responsible for all work  
36 and installed measures. PSNH and NHEC are not guarantors of measures or of work  
37 performed by contractors. PSNH or NHEC will also not be liable for personal injury or  
38 property damage caused by a contractor or its agents or employees;  
39  
40 c. Enter into change orders with the contractor on behalf of the customer so long as the  
41 change orders do not increase the customer's monthly payment amount or payment term.  
42 Any change order that increases a customer's monthly payment amount or changes the  
43 term must be agreed to in writing by the customer, the utility, and the contractor;  
44  
45 d. issue checks on behalf of the customer (or arrange for them to be issued) as payment to  
46 the contractor upon satisfactory progress and/or completion of the work pursuant to the

1 terms of the PAYS Contractor Installation Agreement. The agency relationship does not  
2 limit a customer's rights regarding manufacturers, vendors or contractors; and  
3

- 4 e. To ensure proper disclosure of the PAYS PDC obligation, the companies may place a  
5 mechanics lien on the property. Satisfaction of this lien will not require any payment by  
6 the customer. The mechanics lien is only intended to facilitate disclosure of the PAYS  
7 obligation to purchasers of premises with PAYS products with outstanding PDCs. The  
8 contract will stipulate that the lien will be removed by PSNH or NHEC when all PDCs  
9 have been paid. (NOTE: Liens will only be placed on properties where the cost of  
10 measures exceeds \$1,000 and the companies determine that placing of the lien does not  
11 prohibit participation. For example, if it is determined that these disclosure liens require  
12 schools and municipalities to obtain voter approval, they will not be required for these  
13 customers. The cost to install and remove the mechanics lien will be included in the PDC  
14 calculation.)  
15

16 The agency relationship will enable PSNH and NHEC to ensure that PAYS products are  
17 correctly installed, give them some recourse if they are not, and give them recourse to  
18 manufacturer warranties on behalf of their customers without changing either the customers' or  
19 contractors' normal responsibilities.  
20

21 As further protection for the companies and their customers during the pilot, the companies will  
22 require contractors signing the Contractor Installation Agreement to agree to:  
23

- 24 • Install the work for a customer in accordance with local, state and federal codes,  
25 permits, regulations and standards as well as manufacturers' installation requirements;
- 26 • Be solely responsible for the work and work site;
- 27 • Warranty work for a minimum of one year for materials and labor;
- 28 • Provide customers with copies of any manufacturers' warranties;
- 29 • Provide bonding or an irrevocable letter of credit (equal to the cost of work or up to  
30 \$10,000) to ensure compliance with agreed upon responsibilities;
- 31 • Provide proof of reasonable levels of insurance (e.g., \$1,000,000 per occurrence for  
32 property damage and automotive liability and worker's compensation);
- 33 • Agree to binding arbitration for settling disputes; and
- 34 • Agree to indemnify the customer and utility against claims of liability or loss of work  
35 performed in accordance with the agreement.  
36

37 For permanent PAYS products, once all PDCs have been paid, the customer retains ownership of  
38 the measure (unless the customer is a renter, in which case the building owner retains  
39 ownership). All traditional responsibilities of customers (e.g., accepting and paying for the  
40 work) and contractors (installing the specified measures responsibly and correctly) remain the  
41 same. However, as noted above, PSNH and NHEC agree to assume specific responsibilities,  
42 including arranging for payment of the contractor for the work.  
43

44 Customers who choose not to take advantage of the agency relationship will be required to sign a  
45 PAYS payment agreement. This agreement will be similar to the Purchase Agreement except  
46 that the companies' only relationship with the contractor will be to inspect the completed work  
47 and make payment.

1  
2 Landlords that approve the installation of PAYS products in their building will be required to  
3 sign a Landlord Agreement. They must agree to retain ownership of the measure once all PDCs  
4 have been paid (unless the tenant owned the equipment in which case the tenant will maintain  
5 ownership). Landlords will not be permitted to remove PAYS measures without PSNH's or  
6 NHEC's permission before all PDC payments have been paid. Landlords must also agree to  
7 disclose any PAYS PDC obligations to prospective tenants or purchasers of the premises.  
8

9 New customers establishing service at a location with a remaining PAYS obligation will be sent  
10 a PAYS Customer Responsibilities form that outlines their PAYS benefits and responsibilities.  
11 These customers will be instructed to pay the specific PDC (the PDC and the number of  
12 remaining payments will be noted on this form). They will also be instructed not to damage the  
13 equipment, to notify PSNH or NHEC if the equipment stops working, and to allow PSNH or  
14 NHEC to arrange for repair or replacement if necessary. The form will explain that the number  
15 of payments may be increased to allow PSNH and NHEC to recover all their costs (e.g., repair  
16 costs, increased financing costs resulting from missed payments, or administrative costs).  
17

18 3. Measures Verification. Before final payment is made to any installation contractor, PSNH or  
19 NHEC will inspect the installation (or arrange for an inspection of the installation) to verify that  
20 the measures are properly installed and working. Additionally, ESS or AEs will be notified if a  
21 customer reports that a PAYS product for which PDCs are being billed stops working. All such  
22 reports will be verified. If a PAYS product (or any measure comprising a PAYS product) is not  
23 working, the companies will evaluate whether the measure(s) should be repaired or replaced or  
24 the PDC should be stopped (e.g., it may not be cost effective to make a costly repair to a PAYS  
25 product during the last few months of the payment term). When the companies verify that all  
26 measures are again functioning, they will determine, using a simple formula, whether the number  
27 of payments needs to be increased so that all PSNH or NHEC costs are recovered.  
28

29 4. Disclosure. When customers who purchased portable PAYS products close their account,  
30 they must satisfy any remaining PDC obligations for those measures. For PAYS products linked  
31 to a meter, any customer or building owner may opt to pay off the remaining PDC obligation at  
32 any time and without penalty.  
33

34 However, when a building owner or landlord wants a PAYS obligation to transfer to the next  
35 customer at that location, disclosure of the PAYS obligation is the responsibility of the building  
36 owner or landlord. All contracts and forms will make this clear. A mechanics lien requiring  
37 disclosure that the occupant of the referenced premises with installed PAYS products is  
38 obligated to pay a PDC should ensure adequate disclosure to potential purchasers. Such liens  
39 may be used for premises with installed PAYS products costing at least \$1,000.  
40

41 Before any PAYS measures are installed, building owners and landlords must first agree to  
42 disclose any PAYS PDC obligations to prospective tenants or purchasers of the premises. A  
43 simple disclosure form with a place for the new owner or occupant's signature will be provided  
44 to help with this obligation. Each new tenant must be provided with a copy of this disclosure  
45 form by the owner or landlord. In the event a new owner or tenant claims they were not notified  
46 of their PAYS' obligation by the owner or landlord of the premises and the owner or landlord

1 cannot prove otherwise, agreements will stipulate that customers establishing new accounts with  
2 the companies may terminate their lease or purchase agreement.

3  
4 As an additional consumer assurance mechanism, the companies will make every effort to verify  
5 that disclosure has occurred whenever a new customer takes occupancy at a location with a PDC  
6 assigned for PAYS products before establishing the new account. The companies' Customer  
7 Service Representatives (CSRs) may ask if the prospective customer knows that there is a PDC  
8 obligation (i.e., if the property manager or former owner has disclosed it). The CSR may ask if  
9 the prospective customer has a copy of the disclosure form provided by the building owner. The  
10 CSR will describe the PAYS products, the monthly payment obligation, the estimated savings,  
11 the remaining term, and customer rights (e.g., what to do if a measure fails). The CSR will be  
12 careful to explain that even with the PDC, installation of the PAYS product(s) was designed to  
13 result in lower bills than this account would have had without the PAYS product(s). The  
14 Customer Responsibility form will be sent to the new customer within a few days.

15  
16 Requiring the landlord to disclose the PAYS obligation to tenants and/or new owners and then  
17 having PSNH and NHEC review this again with each new tenant or owner ensures that all parties  
18 will be well informed about the PAYS charge. These simple disclosure forms should not create  
19 a burden for owners or tenants. In the unlikely event that a customer does not receive the  
20 required prior notice, they are unlikely to protest payment once they understand that the PDC  
21 pays for measures designed to produce savings in excess of the payment.

22  
23 5. Unwanted Measures. PSNH's and NHEC's agreements and the proposed Tariff in Appendix  
24 E will stipulate that customers who take occupancy at premises with a PAYS obligation must  
25 accept the use of any installed PAYS measures and make PDC payments while occupying those  
26 premises or until the payment term has ended. However, PSNH and NHEC may in certain  
27 circumstances find themselves unwilling to insist that a new customer accept a PAYS measure  
28 and payment obligation. A customer may plan to change the use of the premises and the  
29 measure may not be compatible with the new use (e.g., a building could be converted from an  
30 assembly plant to a warehouse and efficient motors would no longer be required). The  
31 companies will retain their option to permit new customers to remove PAYS measures and end  
32 payment obligations. However, PSNH or NHEC will require that these customers allow PSNH  
33 or NHEC to remove the measures for resale in order to recover a portion of its cost and minimize  
34 program costs to other customers. PSNH and NHEC intend to minimize this potential problem  
35 by limiting the PAYS products offered to measures (e.g., cooling) and locations (e.g., office  
36 buildings) where the use has been and is likely to remain the same.

### 37 38 **C. Risk Analysis**

39  
40 Risk is the potential for an investor to lose all or part of the value of an investment and typically  
41 reduces the willingness of people to invest. Anyone investing in the installation of energy  
42 efficient technologies seeking to recoup their investment with energy savings faces risk.  
43 Whether it's a homeowner who is insulating a home, an industrial customer installing more  
44 efficient motors, or a school replacing its HVAC equipment; the individuals, businesses or  
45 organizations who implement these projects face risks. The nature of these risks vary for each  
46 individual situation, but they generally involve risk that the investor will fail to recoup the

1 investment with an appropriate and timely return. This can happen in one or more of several  
2 ways:

- 3
- 4 • the customer goes out of business, leaves the location or otherwise is not present to get
- 5 the investment back through expected energy savings;
- 6 • the customer wants or needs to sell the property and cannot recoup the unrealized
- 7 portion of the investment with a higher sale price;
- 8 • the equipment fails in the period between the end of the warranty and the date when
- 9 the investment will be paid off by the energy savings;
- 10 • the installed equipment is obsolete before it pays for itself;
- 11 • the installed equipment is no longer wanted by the current occupant;
- 12 • the occupant's needs change resulting in either increased or reduced usage and a
- 13 corresponding change in the anticipated savings;
- 14 • energy prices go down so it takes longer to recoup the investment;
- 15 • the building is destroyed and the measures are not insured.
- 16

17 PAYS was designed to minimize these risks and break down the traditional market barriers to  
18 investments in energy efficiency. However, PAYS does not make risk disappear. PAYS simply  
19 shifts risk to others who are better positioned to evaluate and manage it.

20

21 1. Traditional Risk Management. Individuals or businesses that borrow money to invest in an  
22 energy efficient technology based on anticipated savings face the risk of having to repay the loan  
23 regardless of whether or not the savings materialize. In the most extreme cases, borrowers can  
24 also lose their collateral. Most financial institutions manage the risk related to providing capital  
25 for installations or building renovations by identifying a borrower, performing a credit check,  
26 evaluating the risk, determining the maximum loan amount it will make, making a loan and then  
27 holding that borrower accountable for repayment of the loan. If the borrower fails to repay by  
28 the time specified, the financial institution can take aggressive steps to collect the money,  
29 including foreclosure on real estate and garnering wages. In short, these institutions manage risk  
30 by putting most of the risk back on the customer.

31

32 Traditional energy efficiency programs offering subsidies generally require an up-front  
33 investment by the customer. Unless the incentive is equal to 100% of the cost of a measure, the  
34 customer has to recover a portion of the measure cost through future energy savings, and faces  
35 the risks noted above that these savings may not materialize.

36

37 2. PAYS Removes Risk for Customers. In an effort to stimulate investment in energy efficient  
38 building technology, PAYS turns energy efficient technologies into products that customers want  
39 to buy and are willing to pay for. One of the ways that PAYS does this is by removing risk from  
40 the individuals, businesses or other organizations who want to install these technologies in the  
41 buildings they own or occupy. The customer has no up-front costs and saves immediately. If the  
42 customer moves from the premises, their obligation to pay for the measure ends. If the measure  
43 stops working and is not repaired, their obligation to pay also ends. To the extent that building  
44 owners or occupants perceive the risk of investing in energy efficient technologies as greater  
45 than the actual risk, PAYS also eliminates the dampening effect on investment from this  
46 misperception.

1 3. Managing Risk with PAYS. PAYS requires no upfront payment from the customer, so  
2 capital must be provided by someone else. Since PAYS does not involve loans to a specific  
3 borrower (which would inhibit participation of landlords, renters, the elderly, those with limited  
4 credit, etc.), capital providers need a new mechanism for managing this risk. This is one of the  
5 key PAYS infrastructure development issues that must be resolved for PAYS to enjoy  
6 widespread acceptance and use.

7  
8 The mechanism proposed is the PDC. There are decades of experience regarding the reliability  
9 of the regulated utility billing collection system. The entire utility industry in this country has  
10 depended upon it. The PAYS approach is based on the assumption that this same reliable system  
11 can provide the “new mechanism” needed to repay capital providers. If this mechanism is  
12 successful, the companies will be able to repay the PAYS products capital providers using the  
13 same collection system they have used to pay other suppliers for years.

14  
15 The PAYS promise is that if the product no longer works, the customer does not have to pay. As  
16 a result, for measures that fail after the warranty period, someone needs to cover the unpaid  
17 costs. Additionally, if the premises are unoccupied, there will be no payment stream for as long  
18 as the premises remain unoccupied. One relevant experience is that of the Burlington Electric  
19 Department (BED) in Vermont which oversaw installations similar to those being proposed for  
20 this pilot and had bad debt of approximately 3%. Since there is no track record in New  
21 Hampshire, PSNH and NHEC will budget bad debt at 5% and 10% respectively.

22  
23 The companies are pursuing three different ways to manage risk for this pilot. The first option is  
24 to have a capital provider assume all risk at a reasonable cost. The companies would sign  
25 agreements with one or more capital providers and collect and forward all payments from PAYS  
26 customers to the capital provider(s) in accordance with this proposed pilot design. Since the  
27 payment term can be extended for any missed payments, under ordinary circumstances, the  
28 capital providers would eventually be able to collect their money and any accrued interest.  
29 Using this approach, the capital provider would be responsible for managing risks associated  
30 with PAYS and would build any projected expenses into its cost for capital. However, because  
31 of their lack of experience with this new approach, capital providers have been unable to  
32 quantify their uncertainty about prolonged vacancy, interruptions in the payment stream,  
33 compliance with their existing obligations, and the reliability of the regulated utility payment  
34 system compared to traditional financial mechanisms.

35  
36 The second option is to find an insurer willing to assign a cost to underwrite the risk. The  
37 companies have pursued a number of options for obtaining this insurance. However, inasmuch  
38 as PAYS is new and has no track record, the cost for such insurance may be too costly. Insurers  
39 are more likely to offer such insurance at a reasonable cost if they can trust the regulated utility  
40 collection system to bill and collect the funds, that there will not be sustained and numerous  
41 periods of vacancy, and that on average most measures will last at least three quarters of their  
42 useful life. Insurers concerns about measure life may be mitigated since measures can be  
43 repaired and the repair costs can also be collected from occupants in the form of additional  
44 payments.

45  
46 The third and most likely option for managing risk in this pilot is for the companies to manage it  
47 themselves. Either they would provide capital or borrow from one or more traditional lending

1 institutions. The lending institutions would treat the utility as the borrower and extend a line of  
2 credit to be drawn down as projects are completed. In either case the utility would be at risk for  
3 any bad debt. The companies would plan to cover the majority of this bad debt with a portion  
4 the approved program funds designated for the PAYS pilot. However, were the bad debt to  
5 exceed the companies' estimates, the companies would need to recover any excess bad debt from  
6 all their customers ideally through the System Benefits Charge (SBC).

7  
8 One of the possible solutions to address these risks would be to add a bad debt charge onto the  
9 financing rate charged to each participant. Adding such a charge to all PAYS products assures  
10 whoever assumes the risk that there will be some funds to help cover their costs.

11  
12 4. How Specific Risks are Addressed. Eight different types of risk are noted in the bullets at the  
13 beginning of this section. The companies have designed this pilot, regardless of who assumes  
14 the risk, to mitigate these risks to the greatest extent possible. The goals are to:

- 15
- 16 • remove as many of these risks as possible from customers purchasing PAYS products;
- 17 • responsibly manage SBC dollars; and
- 18 • minimize the possibility that bad debt from the PAYS program would need to be  
19 recovered from sources other than the PAYS budget.
- 20

21 How the companies propose to address these eight risks during the pilot is described in  
22 Appendix G.

## 23 24 **IV. Pilot Implementation Plan**

25  
26 Upon receiving NHPUC approval to implement the proposed pilot, the companies will take steps  
27 that they expect will enable them to begin implementation within four to six months of the  
28 approval. They include:

- 29
- 30 • NHPUC approval of compliance tariffs;
- 31 • Securing capital for measures;
- 32 • Marketing PAYS as appropriate;
- 33 • Making billing system modifications;
- 34 • Establishing utility-specific PAYS implementation budgets;
- 35 • Training staff affected by the PAYS pilot (CSRs, AEs, ESS, billing);
- 36 • Making PAYS offers; and
- 37 • Setting up a process evaluation.
- 38

### 39 **A. NHPUC Approval**

40  
41 PSNH and NHEC are submitting this design pursuant to the NHPUC's November 1, 2000 Order  
42 No. 23,574. While PAYS offers a wide variety of potential benefits to the companies and their  
43 customers, it is a largely untested approach. The PAYS approach seeks to stimulate customer  
44 investment in energy efficiency by relieving customers of much of the risk of making those  
45 investments. Doing so requires others to absorb that risk. In this pilot, PSNH and NHEC will  
46 absorb much of this risk by certifying PAYS products will save more than they cost or by taking  
47 on loans that may not be paid back by customers for a variety of reasons (see "Risk Analysis").

1 The companies believe that successful implementation of the proposed pilot requires that PSNH  
2 and NHEC be authorized to:

- 3
- 4 1. Arrange for the sale of PAYS products to customers from vendors that agree to comply with  
5 program rules;
- 6
- 7 2. Bill customers for PAYS products using PDCs that are treated under NHPUC 1202.02 as a  
8 “basic utility service” like any other utility delivery service charge, thereby allowing  
9 disconnection for non-payment (a proposed PSNH tariff is attached as Appendix E and NHEC  
10 will submit a tariff upon NHPUC approval of this pilot);
- 11
- 12 3. Assign the PDC for a permanent PAYS product to a meter location, so that succeeding  
13 customers at that location are required to pay the PDC until PSNH or NHEC have recovered  
14 all costs for the product installed at that location (including installation, financing,  
15 administration, and repairs);
- 16
- 17 4. Increase the number of PDC payments when necessary to allow PSNH or NHEC to recover  
18 additional financing costs resulting from missed payments or any repair costs as long as the  
19 measure is functioning through the period of the final payment;
- 20
- 21 5. Account for and manage PDC accounts receivable the same as any other unpaid delivery  
22 service charges;
- 23
- 24 6. Recover from all customers or members any program expenses not recovered from customers  
25 who purchase PAYS products;
- 26
- 27 7. Require any customer who takes occupancy of premises with a PAYS product installed to:  
28
  - 29 • make PDC payments assigned to that location for the time the customer occupies the  
30 premises and the measure works,
  - 31 • pay the PDC even if the measure is not working if the customer does not allow PSNH  
32 or NHEC to arrange for repair or replacement of failed equipment; and
  - 33 • pay for repair or replacement of the installed equipment if the customer damages it;
- 34
- 35 8. Enter into agency relationships with customers and customers’ contractors to provide basic  
36 consumer assurances for all PAYS product purchases including certifying that measures are  
37 cost effective for installation at the specified locations and that measure specifications and  
38 installation standards are clear before any work begins; and
- 39
- 40 9. Receive allowable shareholder incentives for approved PAYS pilot budgets.

41  
42 Since the companies will have PAYS obligations until the last PDC payment is collected, they  
43 request the above NHPUC authority be in effect until all of their obligations resulting from this  
44 pilot have been fulfilled.

1 **B. Capital**

2  
3 When PAYS was originally conceived, the hope was that vendors, manufacturers and capital  
4 providers would all seek to take advantage of this new system and would be willing to finance  
5 measures and assume the risk for non-payment. PAYS should open up new markets and,  
6 although liens and other traditional measures for securing investments are not part of PAYS, the  
7 threat of disconnection for non-payment and the ability to charge subsequent customers for  
8 measure costs until all costs have been recovered was thought to offer a sufficiently secure  
9 payment stream. However, no manufacturer has yet offered to provide low cost capital or  
10 assume risk.

11  
12 Similarly, when PAYS was developed, it was hoped that capital providers would want to have  
13 access to this new payment stream. While this payment stream is unlike any other (assigning  
14 charges to the meter creates a loan without a physical borrower), electric delivery service  
15 companies have some of the highest repayment rates of any collection system. However, no  
16 capital provider has agreed to assume the risks since there is no track record with this new type  
17 of financing. To this point, traditional financing institutions have required that loans be assigned  
18 to a person or a corporation, not a meter location.

19  
20 Conversations with the Geoexchange Finance Company indicate there is some possibility of such  
21 financing being available for the pilot. If, prior to starting up their pilot, the companies believe  
22 one or more capital providers may offer reasonable rates and be willing to absorb whatever risks  
23 there are for non-payment to access new markets and a new payment stream, the companies will  
24 submit a request for proposals (RFP) for funding for specific measures (e.g., geothermal  
25 installations), generic PAYS measures, or for PAYS products for specific types of customers  
26 (e.g., municipalities and schools).

27  
28 (NOTE: Based on preliminary conversations, a manufacturer may offer to finance installations  
29 and assume all liability for non-payment providing it has some control over the selection of  
30 contractors. In order to protect customers, PSNH stockholders, and NHEC members from risks  
31 associated with operating this pilot, the companies will allow manufacturers to exert such  
32 control, providing their selection is part of an open bidding process with the terms for limiting  
33 contractor participation made clear to everyone as part of the RFP.)

34  
35 At the same time, PSNH and NHEC may continue negotiations with local banks (Meredith  
36 Village Savings Bank, Bank North, Citizens Bank, and Bank of New Hampshire). NHEC has  
37 also initiated conversations with its principal lender, the National Rural Utility Cooperative  
38 Finance Corporation. The companies have had conversations with the Director of New  
39 Hampshire's Resources & Economic Development Department about a source of capital and risk  
40 management for these utilities' largest customers and with staff of Fannie Mae for their  
41 residential customers. They have discussed the possibility with these parties of negotiating a  
42 fixed amount to prepay the capital provider for insuring risk associated with PAYS measures.

43  
44 During implementation, PSNH and NHEC may test different approaches to providing capital for  
45 funding PAYS measures. The companies will use the four to six months after NHPUC approval  
46 to finalize their funding plans.

1 **C. PAYS Public Information**  
2

3 All PAYS product “marketing” will be handled by the companies’ staff. No customer will be  
4 sold a PAYS product until (s)he has talked with an ESS or AE about PAYS, the measure, and the  
5 specific offer to ensure clear understanding of the PAYS program.  
6

7 To ensure that when customers receive a PAYS offer it will not be the first time that they have  
8 heard about PAYS, upon NHPUC approval, the companies will implement a targeted  
9 information campaign. The key element of this campaign will be contacts with prospective  
10 participants.  
11

12 **D. Billing System Modifications**  
13

14 As noted in the section “Billing Protocols” above, the companies will modify their billing  
15 systems to accommodate the pilot program. NHEC will work to simplify the connection  
16 between billing information and customer data. PSNH will make every effort to allow PAYS  
17 notices to be included on the bills of customers with PAYS charges linked to the meter.  
18

19 However, creating easy access for CSRs to PAYS information will be problematic for the  
20 companies. After NHPUC approval, the companies will set up and fine tune these systems.  
21

22 **E. PAYS Implementation Budgets**  
23

24 The companies have a clear NHPUC guideline regarding their PAYS pilot budgets. PAYS  
25 expenses will not exceed 10% of each company’s approved energy efficiency program budget.  
26

27 Some costs, such as the public information effort and billing system modifications, are relatively  
28 easy to budget. These costs are identified in Appendices C and D. However, the bulk of PAYS  
29 expenses will be determined by the actual “cost” of the risk resulting from customer non-  
30 payment. It is not practical to compute the dollar volume for PAYS activity at PSNH and NHEC  
31 until the source of capital and the actual risk associated with it are identified.  
32

33 If negotiations result in a capital provider willing to charge affordable rates and absorb all of the  
34 risk (e.g., from measure failure, homes or businesses burning down, periods of non-occupancy,  
35 etc.) then the amount of PAYS activity during the pilot program will be limited only by the  
36 market and the ability of AEs and ESS to service customers.  
37

38 If, on the other hand, the utilities have to guarantee the loans made on behalf of their customers,  
39 during the pilot, PSNH and NHEC will make available to customers up to \$1,000,000 and  
40 \$500,000 respectively for PAYS products during the pilot. During each year of the pilot  
41 program, once the annual budget limit has been met, PSNH and NHEC will stop offering PAYS  
42 products to their customers unless other sources of program funding become available.  
43

44 **F. Staff Training**  
45

46 Upon receipt of NHPUC approval of this proposal, selection of a source of capital, completion of  
47 the PAYS public information campaign, and billing system modifications and NHPUC approval

1 of revised PAYS pilot program budgets, PSNH and NHEC will train AEs and ESS, CSRs and  
2 billing staff. The companies will work with trainers to develop appropriate responses to typical  
3 questions and customer issues. They will also work to develop approaches for explaining:

- 4
- 5 • PAYS products and the new offer;
- 6 • Why PSNH and NHEC are trying this new approach;
- 7 • Why customers should accept the new offer; and
- 8 • Customer risks for accepting PAYS measures.
- 9

10 As part of the staff training, the companies will review the market barriers discussed in this  
11 submission, especially in “PAYS Product Benefits” and discuss how the PAYS offer is designed  
12 to overcome these barriers. The companies’ CSRs will also develop approaches that enable their  
13 interactions with customers to facilitate a successful pilot.

## 14 **G. PAYS Offers**

15  
16  
17 While providing usual services to customers, AEs and ESS analyze cost effective energy  
18 efficiency projects and recommend them to customers. Many offers now include an offer of a  
19 financial incentive to make a project more attractive to the customer.

20  
21 Often, customers accept these offers. For these customers, there will be no change as a result of  
22 this pilot. However, should these customers prefer to purchase measures as PAYS products, they  
23 may be permitted to do so.

24  
25 Other customers, many because of the market barriers noted elsewhere in this proposal, reject  
26 cost effective projects. If these projects can be packaged as PAYS products (i.e., they meet the  
27 cost, savings, and measure life thresholds), these customers will be offered the opportunity to  
28 buy them. NHEC and PSNH may allow AEs and ESS to include up to half of normally available  
29 subsidies to enable projects to qualify as PAYS products, depending on demand for PAYS  
30 products compared to PAYS funding constraints (see Residential Weatherization example in  
31 Appendix A).

32  
33 Additionally, because the total value of subsidies any customer may receive each year is limited,  
34 some customers, especially large commercial and industrial customers (C&I), limit the amount  
35 of work they do each year, contracting for work to the extent it is subsidized. Instead of  
36 deferring projects, these customers will be offered the opportunity to implement the entire  
37 project, receive the one-year subsidy, and pay for the balance of the project as a PAYS product.  
38 Customer confidence in the future availability of subsidies, the attractiveness of not increasing  
39 their debt, and the value of using their capital for other purposes, versus the magnitude of  
40 delayed savings will likely determine customer responses to these PAYS offers.

## 41 **H. Evaluation**

42  
43  
44 As the NHPUC is aware, the companies already conduct evaluation of their energy efficiency  
45 programs and are experienced with the evaluation process. Since this pilot program will use only  
46 the most cost-effective energy efficient technologies (those that can pay for themselves using  
47 only two thirds of the estimated savings over three quarters of their estimated life), it is virtually

1 certain that PAYS measures will meet all of the traditional cost-effectiveness tests. The key  
2 issues that this pilot needs to test have to do with whether PAYS can be made operational and  
3 effectively offer customers an option that they want. At this time, PSNH and NHEC anticipate a  
4 simple process evaluation for this pilot.

5  
6 The process evaluation will use focus groups and interviews. Staff and participant focus groups  
7 will help answer key program questions. Additional information will be collected through  
8 interviews with staff and participants as well as capital providers, and vendors. Some key  
9 questions that will be considered are:

- 10  
11
- 12 • Do more customers accept installation of more measures?
  - 13 • Are there sources of capital for PAYS products?
  - 14 • Does PAYS overcome the key market barriers discussed in “PAYS Product Benefits”?
  - 15 • What are the losses associated with PAYS products and have the companies been  
16 forced to disconnect any customers because of PAYS bad debt?
  - 17 • What comments, if any, have the companies received from PAYS participants?
  - 18 • What improvements should be made to the PAYS infrastructure?

19 PSNH and NHEC anticipate using the first six months of the pilot as start-up. They anticipate  
20 that minor adjustments will have to be made during implementation. Waiting until the  
21 eighteenth month to evaluate the program will ensure the fairest assessment by the companies,  
22 customers, and capital providers of this new approach. It will also leave four months for PSNH  
23 and NHEC to prepare their respective evaluations of this pilot for the NHPUC.

1 **APPENDIX A**

2 **PAYS Products Examples**

3  
4 On the following pages, actual PSNH or NHEC projects are used to illustrate how repackaging  
5 energy efficiency measures as PAYS projects will work in the proposed pilot program and how  
6 the PAYS Delivery Charges will be calculated. In most of these examples, savings are  
7 sufficiently robust to set payment terms at less than three-quarters of the estimated measure life  
8 and to pay for all measure costs with less than two-thirds of the estimated savings. Two other  
9 examples are included. One is a school project where the desire to reduce taxpayers' costs  
10 would likely result in stretching both thresholds (i.e., the amount of savings to repay project costs  
11 and the estimated measure life) to qualify the project. The other example illustrates how  
12 subsidies can be combined with the PAYS approach to make a PAYS project sufficiently cost  
13 effective to qualify as a PAYS product.

14  
15 The key thing to remember about these examples is that they represent cost-effective projects  
16 that so far have been refused by PSNH or NHEC customers. (The exception is a project taken  
17 from BED in order to illustrate split incentives.) PSNH and NHEC hope that by repackaging  
18 these projects as PAYS products, market barriers that inhibited implementation will be overcome  
19 (e.g., lack of capital, uncertainty about occupancy, doubts about the value of future savings  
20 compared to the requirement for up-front cost sharing, etc.). The fact that program costs may be  
21 lower is viewed as an ancillary benefit.

1 **Large C&I Program**

2  
3 An AE reviewed the plant of a manufacturer in southwestern New Hampshire. The AE proposed  
4 an energy efficient lighting retrofit, replacing approximately 500 T12 fixtures with T8  
5 replacements. The cost for the recommended lighting retrofit was \$37,876. The estimated  
6 annual savings was \$13,862. PSNH considered a subsidy of \$5,000 to make the project more  
7 attractive.

8  
9 The typical life expectancy of a lighting retrofit in this type of application is at least ten years.  
10 Savings over this length of time (or longer) would have paid for the project many times over.  
11 However, the customer did not install the retrofit measure because management determined it  
12 needed to spend available capital in making manufacturing process improvements.

13  
14 If the PAYS pilot had been in effect, this customer would have been offered this project as a  
15 PAYS product. There would have been no subsidy offer but there would also have been no up-  
16 front, out of pocket expense or competition for available capital. The payments would have been  
17 structured so that the customer began getting savings immediately.

18  
19 Because the savings from this project are sufficiently robust, the PDC would have been spread  
20 out over only 6 years (as opposed to 7.5 years) and the customer would still have received  
21 approximately 40% of the savings after making payments. (NOTE: The actual interest rate and  
22 monthly payment amount will be determined by the source of capital selected and market rates).

23

24 PSNH Up-Front Payment	\$37,876.00
25 Monthly PDC (6 years @ 9.5% APR)	\$ 692.17
26	
27 Annual Lighting Cost Reduction	\$ 13,862.00
28 Annual PDC	\$ 8,306.04
29 Net Annual Customer Savings	\$ 5,555.96 (40% of gross savings)

30

31 Assuming PSNH had to guarantee the cost of any non-payments and assuming an overall PAYS  
32 program average bad debt of 5%, PSNH's cost would be \$1,893.80.

1 **Municipal, Schools, Hospital Buildings**  
2

3 PSNH performed an audit for a middle school in a small city in central New Hampshire this past  
4 December. The audit recommended a simple lighting retrofit that that would have reduced  
5 demand by 33.8 kW and annual energy consumption by 90,225 kWh for an estimated annual  
6 savings of \$11,407. The cost for the project was \$50,210 (resulting in a simple payback of 4.4  
7 years). PSNH offered the maximum subsidy of \$3,000 to make the project more attractive.  
8

9 Like most school districts, this one must get approval for funding capital improvements through  
10 the school board, a lengthy and often fruitless effort. There is not much likelihood this project  
11 will happen absent a PAYS product offer.  
12

13 Additionally, this example was selected because it shows a societally beneficial project that  
14 would otherwise not be implemented that barely scrapes by as a PAYS project if interest rates  
15 are as high as 9.5%. This example indicates how sensitive borderline projects are to financing  
16 costs. At an interest rate of 8.5% and still assuming a 10 year payment term, this project  
17 qualifies offering the customer 35% of the savings.  
18

19	PSNH Up-Front Payment	\$50,210.00
20	Monthly PDC (10 years @ 9.5% APR)	\$ 649.71
21		
22	Annual Lighting Cost Reduction	\$ 11,407.00
23	Annual PDC	\$ 7,796.52
24	Net Annual Customer Savings	\$ 3,610.48 (32% of gross savings)
25		

26 Assuming PSNH had to guarantee the cost of any non-payments and assuming an overall PAYS  
27 program average bad debt of 5%, PSNH's cost would be \$2,510.50.

1 **Small C&I Retrofit**

2  
3 NHEC's Co-op Business Services program analyzed the energy efficiency opportunities for a  
4 small franchised retail store in Plymouth. The owner has occupied the approximately 2,000  
5 square foot space for two years and has eight years remaining on a ten-year lease. From October  
6 1998 through September 1999, the store used 3,342 kWh with an average demand of 13.25 kW  
7 (peak demand was in July at 16.49 kW). The NHEC ESS recommended a complete lighting  
8 retrofit.

9  
10 The cost for converting 32 fluorescent fixtures with magnetic ballasts to an equal number of  
11 fixtures with electronic ballasts was \$1,862.02. The annual savings were estimated to be  
12 \$1,525.90. In order to make the project more attractive, NHEC offered to do the work and  
13 provide a subsidy of \$372.40 (making the simple payback less than one year).

14  
15 The offer was made near the holiday season. The owner noted he was too busy and cash was too  
16 tight. After the holidays, he turned down the project again, alluding to the fact that his landlord  
17 would not help him with the cost (i.e., the ESS assumed he was still short of cash).

18  
19 If the PAYS pilot had been in effect, the owner would have been offered this project as a PAYS  
20 product (providing the landlord gave him permission to change out the lights at no cost to the  
21 landlord). There would have been no subsidy but there would also have been no up-front, out of  
22 pocket expense. The payments would have been structured so that the customer received savings  
23 immediately.

24  
25 The fixtures are likely to last for more than ten years. However, given the robust savings, this  
26 project would have been financed over only three years.

27

28	NHEC Up-Front Payment	\$1,862.02
29	Monthly PDC (3 years @ 9.5% APR)	\$ 59.65
30		
31	Annual Lighting Cost Reduction	\$ 1,525.90
32	Annual PDC	\$ 715.80
33	Net Annual Customer Savings	\$ 810.10 (53% of gross savings)

34

35 Assuming NHEC had to guarantee the cost of any non-payments and assuming an overall PAYS  
36 program average bad debt of 5%, NHEC's cost would be \$93.10.

## Residential Weatherization Program

NHEC's Co-op Home Services Program offered a free home analysis to a Derry homeowner. The customer lived in a twenty-five year old, electrically heated 1,440 square foot home with two other family members. During the past three years, the homeowner's electric bill averaged more than 15,000 kWh a year. At today's rates, this represents almost a \$2,000 annual electric bill.

The ESS performed a complete analysis. During the visit he left a consumer guide (informing the customer about wise energy choices) and installed an 18 watt compact fluorescent bulb designed to save the customer about \$9 per year on her electric bill (for approximately 6 years).

The ESS offered to install a package of measures including air sealing, weatherstripping, window quilts, additional cellulose insulation, fluorescent fixtures, pipe insulation and an energy efficient thermostat. The package of measures would have cost \$1,828.35 to install. NHEC offered a rebate of \$1,103.78, reducing the homeowner's out of pocket cost for the measures to only \$724.58. The estimated annual savings for the measures was \$499.46. The homeowner refused the offer.

If NHEC's PAYS pilot had been operational, this homeowner would have been offered this package of measures as a PAYS product. The insulation is likely to last more than 20 years. The air sealing is estimated to last more than seven years. The other measures have life expectancies between the two. Three quarters of seven years (the shortest measure life of the package of measures) is five and one quarter years.

This is an example of a project that if all recommended measures were to be included would still have required a subsidy to qualify as a PAYS product (i.e., offering the customer one-third of the savings over no more than three quarter of the measures' useful life). However, even assuming an interest rate of 9.5%, if the subsidy were reduced in half, and the package were paid off over five years, the homeowner would receive positive cash flow and more than one third of the savings.

NHEC Up-Front Payment	\$1,828.35
NHEC Subsidy	\$ 551.89
Balance Financed as PAYS	\$ 1,276.46
Monthly PDC (5 years @ 9.5% APR)	\$ 26.81
Annual Energy Cost Reduction	\$ 499.46
Annual PDC	\$ 321.72
Net Annual Customer Savings	\$ 177.74 (36% of gross savings)
NHEC Subsidy Cost Reduction	\$551.89

Assuming NHEC had to guarantee the cost of any non-payments and assuming an overall PAYS program average bad debt of 5%, in addition to the subsidy of \$551.89, NHEC should estimate an additional cost of \$63.82.

1 **New Construction Residential**  
2

3 NHEC currently offers Home Energy Rating System (HERS) ratings to residential customers  
4 selling, buying or building a home upon request. HERS ratings involve a survey of the existing  
5 energy efficiency of homes, a detailed analysis, and offer a system for comparing the relative  
6 energy efficiency of different homes.  
7

8 As part of each HERS report, the ESS prepares a series of recommendations that can improve the  
9 efficiency of a home. This information includes both cost and savings estimates.  
10

11 At this time the offer of HERS ratings is not widely marketed and no subsidies for work are  
12 offered. However, NHEC is considering using the PAYS approach to facilitate investment in  
13 more efficient buildings. Residential builders and developers could be contacted through local  
14 planning commissions (or planning staff where there are any) in order to establish contact before  
15 projects are so far along there is no chance to improve their energy efficiency.  
16

17 The HERS cost and savings estimates could be used to package the recommended improvements  
18 (or the incremental cost) as a PAYS product.  
19

20 For example, as part of a rating done for a customer near the central part of NHEC's service  
21 territory on his 1998 cape, the ESS indicated that the home did not qualify as an Energy Star  
22 Home and could benefit from installation of a number of energy efficiency measures. On the last  
23 page of the report, those measures, all with 30 year measure lives, were itemized. They  
24 including increasing attic insulation in sloped ceilings, reducing infiltration, installing a more  
25 efficient hot water heater, increasing the number of fluorescent fixtures, and insulating the floor.  
26

27 Only the first two measures (i.e., increasing attic insulation in sloped ceilings and reducing  
28 infiltration) meet the threshold (at an assumed 9.5% interest rate) of no more than two-thirds of  
29 the estimated savings paying for the measure over no more than three-quarters of the estimated  
30 measure life. If PAYS were fully operational, NHEC might offer to install those measures as  
31 PAYS products and finance their installation over 12 years.  
32

33	NHEC Up-Front Payment	\$358.00
34	Monthly PDC (12 years @ 9.5% APR)	\$ 4.18
35		
36	Annual Savings Total	\$96.00
37	Annual PDC	\$50.16
38	Net Annual Customer Savings	\$ 45.84 (48% of gross savings)
39		

40 Assuming NHEC had to guarantee the cost of any non-payments and assuming an overall PAYS  
41 program average bad debt of 5%, NHEC's cost would be \$17.90.

1 **New Construction Commercial**

2  
3 NHEC offers subsidies to builders of C&I buildings. However, historically, NHEC has  
4 contacted developers and builders too late in the construction process to be able to analyze  
5 recommendations and incorporate them into the building process.

6  
7 NHEC may contact planning commissions (or staff where available) letting them know of their  
8 offer to treat measures that improve the energy efficiency of a building as PAYS products.

9  
10 Inasmuch as no recent offer has been made and turned down, to illustrate how PAYS might be  
11 used for a commercial new construction project, an example has been taken from an actual new  
12 construction project offered by another New England public power utility, the Burlington  
13 Electric Department (BED) of Burlington, Vermont. This example illustrates how PAYS might  
14 overcome the split incentive market barrier. In this actual offer, the building owner did the work  
15 that reduced his bill but turned down the work that would have reduced tenants' bills. BED has  
16 recently developed a PAYS pilot and used this example to explain their PAYS pilot program.

17  
18 An office project was built on lower College Street. BED recommended installing a more  
19 efficient cooling tower and higher efficiency heat pumps.

20  
21 The cooling tower directly benefited the building owner. The 48 higher efficiency heat pumps  
22 would have benefited the building's tenants. BED offered to subsidize both installations. The  
23 building owner installed the more efficient cooling tower at a cost of \$2,496 with BED  
24 subsidizing \$960 of the cost. Estimated annual savings for the project were \$873.

25  
26 The building owner did not install the more efficient heat pumps that were estimated to cost  
27 \$22,040, even though BED agreed to pay \$9,980 (more than 45% of the total cost). The heat  
28 pumps would have saved tenants at least \$5,931 annually.

29  
30 If BED's PAYS pilot had been operational, and this building had been selected for the pilot, the  
31 heat pumps and the cooling tower would have been offered as PAYS products. Both the heat  
32 pumps and cooling tower are estimated to last more than 12 years but the savings are sufficient  
33 to finance this work over 8 years.

34  
35 The allocation of the PDC among tenants would be based on the number of heat pumps each  
36 used. Since BED does not know how many tenants will occupy the space, only totals are shown  
37 for this analysis. The building owner would pay the PDC for the cooling tower.

38  
39 **Cooling Tower Analysis**

40		
41	Utility Up-Front Payment	\$2,496.00
42	Monthly PDC (8 years @ 9.5% APR)	\$ 37.22
43		
44	Annual HVAC Cost Reduction	\$ 873.00
45	Annual PDC	\$ 446.64
46	Net Annual Customer Savings	\$ 426.36 (49% of gross savings)
47	Utility Program Cost Reduction	\$960.00

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

### Heat Pump Analysis

Utility Up-Front Payment	\$22,040.00
Monthly PDC (8 years @ 9.5% APR)	\$ 328.64
Annual HVAC Cost Reduction	\$ 5,931.00
Annual PDC	\$ 3,943.68
Net Annual Customer Savings	\$ 1,987.32 (34% of gross savings)
Utility Program Cost Reduction	\$9,980.00

1 **APPENDIX B**  
2 **Comparison of PAYS Infrastructure**  
3 **to PSNH & NHEC Pilot**  
4

5 The NHPUC has ordered the companies to design and implement a PAYS pilot program. It is  
6 not realistic for the companies to construct a PAYS infrastructure as envisioned in EEI's paper  
7 for a pilot. Changes to the PAYS approach needed to be made for this pilot. However, the  
8 companies, ECS, and EEI believe that the spirit of the PAYS approach has been maintained in  
9 the proposed PAYS pilot design.

10  
11 The PAYS approach as described in EEI's paper encourages that a PAYS market infrastructure  
12 be constructed. With such an infrastructure in place, the authors posit that consumers would  
13 more aggressively seek to install energy efficient technologies that would be available with no  
14 up-front cost, payable on the monthly electric bill and with little risk to consumers.

15  
16 The proposed pilot provides the opportunity to develop and refine the myriad details of making  
17 the PAYS approach operational. In the course of developing this pilot design, the companies'  
18 work to resolve PAYS operational problems has resulted in solutions, not originally envisioned  
19 by the authors, that may turn out to be improvements to the original thinking.

20  
21 For example, one of the principal components of the original PAYS concept was to avoid liens.  
22 They were perceived as a barrier to customers purchasing energy efficient technologies. During  
23 development of this pilot design, focus groups revealed that customers would not object to  
24 mechanics liens on their properties for the sole purpose of facilitating disclosure of PAYS PDC  
25 obligations. C&I customers, municipal and school customers, small commercial customers and  
26 homeowners all indicated that as long as they did not have to pay off the PAYS PDC obligation,  
27 the lien would not be a barrier to their purchase of PAYS products.

28  
29 The companies and EEI believe that changes of this type have enhanced the original PAYS  
30 approach. Significant improvements to the original PAYS approach have also occurred in risk  
31 management and in calculating PDCs. The companies' commitment to implement a successful  
32 PAYS pilot has resulted in improvements to the PAYS concept that will benefit other states and  
33 utilities that follow the companies' lead.

34  
35 Some changes have been made because of the need to adjust for the scale of the pilot. For  
36 example, a PAYS PDC was envisioned as being shown on a two-page bill. The first page of the  
37 bill would list the PAYS PDC with all of a customer's other charges and the total amount for that  
38 bill. The second page would show additional information (e.g., itemizing each specific measure,  
39 the cost for each measure, the number of remaining payments, and the estimated savings updated  
40 for current energy market prices). This page would also include notes requesting that customers  
41 call if PAYS products fail and reminding them to disclose the PAYS PDC to the next customer  
42 at that location. However, early in development of this pilot, it became evident that it would not  
43 be possible to implement the PAYS billing system as originally envisioned at either utility.

44  
45 Other changes for the pilot include a more targeted public information campaign and marketing  
46 effort than were anticipated for a PAYS effort. Due to the limited size and budget of the pilot, a

1 utility wide publicity campaign and the opportunity for vendors to market certified PAYS  
2 products directly to customers are not practical. Both might unleash too much demand, creating  
3 a multitude of operational and budgetary problems for the pilot.  
4

5 However, the most significant changes to the original PAYS concept are that the companies will  
6 fulfill both the billing and collection functions and the consumer assurance functions and that  
7 PAYS product offers will be combined with the companies' existing subsidized offers. As  
8 originally envisioned, an electric utility's role in a PAYS effort would only be to bill and collect  
9 the PDCs and to forward funds to vendors or other capital providers. Either the vendors or a  
10 consumer assurance entity would provide marketing and financing. The consumer assurance  
11 entity would provide product and vendor certification and oversight.  
12

13 For the proposed pilot, the companies will take on the additional roles as the consumer assurance  
14 entity and product marketer. PSNH and NHEC are well suited for this role as they have in-house  
15 staff that already provide consumer assurance services for their customers.  
16

17 PAYS was also premised on the belief that utility funds are not needed for subsidies. In fact,  
18 focus groups in Vermont have indicated that PAYS offers could not compete against significant  
19 subsidy offers. However, the companies already implement approved energy efficiency  
20 programs based on the subsidy approach. The challenge has been to find a way to offer PAYS  
21 products in a complementary rather than competitive way.  
22

23 The chart on the next page illustrates who is responsible for providing key infrastructure  
24 elements for the PAYS infrastructure as originally envisioned and for the companies' proposed  
25 pilot program.

<b>Infrastructure Elements</b>	<b>PAYS Infrastructure</b>	<b>PSNH/NHEC PAYS Pilot</b>
1. Billing and collection of PDC (formerly called ESC)	Provided by electric delivery service company	Same
2. Capital for measures	Provided by vendors, manufacturers, banks or other financial institutions	Provided by PSNH & NHEC using and/or leveraging SBC funds
3. Product certification	Provided by a credible consumer assurance entity	Same (PSNH & NHEC)
4. Disclosure of PDC to next customer	Provided by existing customer or property owner and delivery service company	Same
5. Product warranties and loan guarantees	Negotiated between manufacturers, vendors, and consumer assurance entity	Same for basic manufacturer and vendor warranties (supplemented by PSNH & NHEC, except for Geo Thermal Heat Pump)
6. Marketing	Provided by vendors and manufacturers with initial widespread public education program by consumer assurance entity	Provided by PSNH & NHEC on a targeted basis

## APPENDIX C

### PSNH Preliminary PAYS Budget Annual Budget & Activity Projections

PSNH Program Budget	2001 *1		2002	2003
	Jan-Apr	May-Dec	Jan-Dec	Jan-Dec
<b>Funding</b>				
C&LM Funding	\$ 100,000	\$ -	\$ -	\$ -
System Benefits Charge Funding	\$ -	\$ 400,000	\$ 600,000	\$ 600,000
*2 Previous Balance Carried Forward	\$ -	\$ -	\$ 27,360	\$ 70,874
*3 Loan Repayments (Principle+Interest)	\$ -	\$ -	\$ 21,600	\$ 77,553
Interest on Unspent Funds (8%)	\$ -	\$ -	\$ 2,189	\$ 5,670
<b>Total Funding</b>	<b>\$ 100,000</b>	<b>\$ 400,000</b>	<b>\$ 651,149</b>	<b>\$ 754,097</b>
<b>Direct Utility Costs</b>				
Administration (15%)	\$ 15,000	\$ 60,000	\$ 97,672	\$ 113,115
Contract Labor Support	\$ 85,000	\$ 50,000	\$ 50,000	\$ 50,000
Billing System Modifications	\$ -	\$ 100,000	\$ 20,000	\$ 10,000
General Marketing Campaign	\$ -	\$ 10,000	\$ 10,000	\$ 10,000
*4 Bad Debt Allowance	\$ -	\$ -	\$ 7,200	\$ 18,651
Evaluation	\$ -	\$ -	\$ -	\$ 50,000
<b>Total Direct Costs</b>	<b>\$ 100,000</b>	<b>\$ 220,000</b>	<b>\$ 184,872</b>	<b>\$ 251,766</b>
<b>Revolving Loan Fund</b>				
Balance Available	\$ -	\$ 180,000	\$ 466,276	\$ 502,331
Assume 80% loaned out		\$ 144,000	\$ 373,021	\$ 401,865
*5 PSNH Shareholder Incentive (6%)		\$ 8,640	\$ 22,381	\$ 24,112
Unspent Balance to be carried over	\$ -	\$ 27,360	\$ 70,874	\$ 76,354
<b>Annual Loan Fund Increase</b>	\$ -	\$ 171,360	\$ 443,895	\$ 478,220
<b>Cumulative Loan Fund Value</b>	\$ -	\$ 171,360	\$ 615,255	\$ 1,093,475

- \*1 Funding switches from traditional Conservation & Load Management to System Benefits Charge funding on May 1, 2001 for PSNH (Customer Choice Start Date.)
- \*2 Assumes that PSNH will loan out 80% of the fund and the remaining 20% will be carried over into the following year.
- \*3 Principal and Interest (Bad Debt Allowance) returned from previous PAYS Loans. Calculated for 2002 using  $((\$144,000 \times 5\% \times 10 \text{ years}) + \$144,000) / 10 = \$21,600$ .
- \*4 Assumes a 5% Bad Debt Allowance of total previous year's available loan funds. (For example, 2002 value is calculated as follows...  $\$144,000 \times 5\% = \$7,200$ .)
- \*5 Propose that PSNH earn a 6% Shareholder Incentive on PAYS loans issued.

If the PAYS Program is not continued after the pilot program, all funds, as they are repaid, would be transferred back into the Core Programs. If PAYS offers are not being accepted by customers, PSNH may either transfer "non-performing funds" back to Core Programs, or reduce the SBC percentage earmarked for the PAYS Pilot Program.

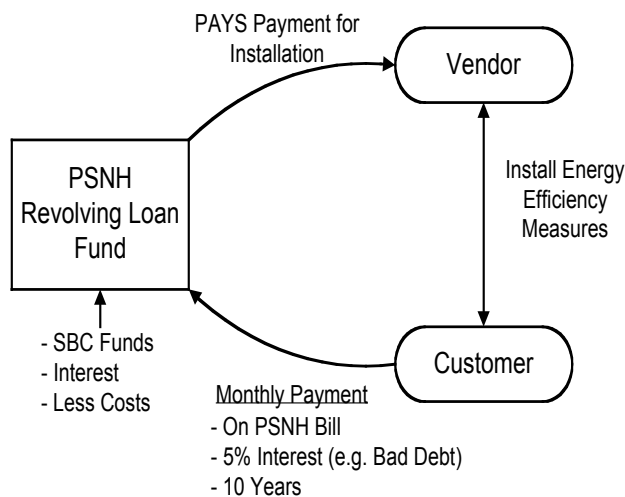
## Capital

PSNH plans to test the use of the PAYS budget to set up a Revolving Loan Fund. Other funding methods required higher interest rates and would have required PSNH to get insurance on installed measures. The Revolving loan fund will offer lower interest rates to customers and will be self-insured.

After initial startup costs, the PAYS budget will be used to fund this Revolving Loan Fund. Loans to customers will be made at 5% interest rate, with the 5% used as a Bad Debt Allowance. All PAYS payments will go back into the Revolving Loan Fund to be loaned out again. Most loans will be limited to 10% of the revolving loan fund pool.

This Revolving Loan Fund will allow PSNH to test the PAYS pilot program in a way that is easy to manage, at less cost than borrowing from a bank, and will eliminate the need to insure the risks associated with PAYS. This may limit the amount of funds that can be used by PAYS, but it also eliminates the added risk to PSNH and its customers.

The following chart depicts how the Revolving Loan Fund will work.



## Shareholder Incentive

Delivery Service companies are allowed to earn an incentive on the funds used for Energy Efficiency Projects. Because PSNH wants to do all they can to make sure the PAYS Pilot Program is a success, PSNH proposes that the incentive be based on 6% of the funds loaned out in any given year. This will encourage the company to certify and provide financing for as many PAYS projects as possible. It will also encourage PSNH to keep administration costs low so that more of the funds are used for loans.

1 **APPENDIX D**  
2 **NHEC Preliminary PAYS Budget**  
3 **Budget & Activity Projections**  
4

5  
6 **PROGRAM COSTS**

	<b>2001</b>
7	
8 Direct NHEC Costs	
9     Administration	\$ 35,000
10     Billing Modifications	\$ 10,000
11     Marketing, Education, Misc	\$ 10,000
12     Evaluation	<u>\$ 20,000</u>
13	
14     Total Direct NHEC Costs	\$ 75,000
15	
16 Estimated Indirect NHEC Costs	
17     Total (Based on high estimate of 10% bad debt)	<u>\$ 50,000</u>
18	
19 Total Estimated NHEC Costs	\$125,000

**APPENDIX E**  
**Proposed Tariff**

NHPUC No. 2 - ELECTRICITY DELIVERY  
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SUPPLEMENT NO. 1  
ENERGY EFFICIENCY PROGRAM  
PAY AS YOU SAVE  
RATE PAYS

TARIFF  
For  
ELECTRIC DELIVERY SERVICE  
Applicable  
In  
Various towns and cities in New Hampshire,  
served in whole or in part.

(For detailed description, see Service Area)

Issued: \_\_\_\_\_

Issued by: /s/ Gary A. Long

Effective: Customer Choice Date

Title: President and Chief Operating Officer







## APPENDIX F

### Focus Group Summaries

#### Milford Focus Group Summary

On March 7<sup>th</sup> at 2:00 PM, the Energy Efficiency Institute, Inc. (EEI) facilitated a focus group of Public Service Company of New Hampshire (PSNH) customers. PSNH arranged for five customers to attend. The focus group used a round-table format and the discussion lasted two hours. Paul Cillo from EEI facilitated the meeting and refreshments were provided for participants. Staff from PSNH and EEI sat at a separate table and took notes. The focus group was not taped.

Although small, this was a balanced group of customers with some similar needs but who represented differences between large commercial and industrial (C&I) customers, municipal and school customers. All of the participants, were well informed about their facilities, energy efficiency issues and how decisions were made in their organizations.

- Two participants were facilities managers for large C&I customers.
- Two participants were representatives from municipalities.
- The fifth participant was the principal of a private school that is planning a renovation.

For the most part, participants substantiated that PAYS as envisioned may help overcome some barriers to measure implementation and may help them to complete some specific projects when and if PAYS is implemented. One participant explicitly stated PAYS was more credible than an ESCO (Energy Service Company) offer. However, all made it clear that the key issue would be their ability to convince key decision makers in their organizations that a PAYS product would save more than it cost and as one participant stated produced “positive cash flow.” They quickly understood that it was not appropriate for unproven measures.

Participants also mentioned that energy efficiency projects are now done piecemeal over a number of years because of budget constraints for capital investments. They indicated that PAYS might be helpful as a way to capitalize projects in their effort to get energy efficiency projects done all at once and thus reap the additional savings.

There were a number of unexpected findings that should be considered for incorporation into PSNH’s submission to the New Hampshire Public Utilities Commission:

- One participant suggested that his firm might only accept measures with shorter terms in order to reduce interest costs, even if it meant reducing the threshold that a PAYS measure must return a minimum of 33% of the savings to the customer during the payment period. Eliminating this threshold would increase risk for subsequent occupants. Eliminating the threshold should be an option, but only if the customer is willing to accept full responsibility for paying off all measure costs when that customer terminates occupancy (e.g., as with portable measures).

1 When later asked if the minimum threshold of 33% savings to the customer during the  
2 payment period would address concerns about the accuracy of savings estimates, this  
3 participant and others who indicated preference for shorter terms, agreed. Retaining the  
4 minimum savings threshold for affixing charges to the meter may facilitate customers  
5 thinking about what is most important to them.

- 6
- 7 • One participant stated that there was no need to interrupt payments for brief measure outages.  
8 Others agreed. It was clear that there was no reason to offer the difficult to implement  
9 suspension of payments for measure failure. For most measures, repairs will be made quickly.  
10 There should be only two options. If a measure fails, it is fixed and payments continue or it is  
11 not fixed and payments cease.
- 12
- 13 • Participants discussed the value of being able to negotiate making the annual payments over  
14 fewer months (e.g., during the school year). This might be helpful for customers with  
15 seasonal operations or for measures that have seasonal savings.
- 16
- 17 • All participants repeated the need for the “numbers to work,” suggesting that there needed to  
18 be a clear indication of how savings numbers were developed. One participant noted the  
19 importance of citing proven standards (e.g., Department of Energy ratings) when available in  
20 the course of making offers so that customers had more assurance the savings would be  
21 realized.
- 22
- 23 • Participants discussed how PAYS might be blended with other offers to create an ideal offer.  
24 PSNH should be prepared to have these sophisticated customers work with Account  
25 Executives to craft offers combining subsidies, PAYS and existing funds.
- 26
- 27 • None of these participants thought liens regarding disclosure of charges would interfere with  
28 their purchase of PAYS products, however, there was some discussion as to whether liens  
29 might prevent schools and municipalities from purchasing PAYS products without a public  
30 vote.
- 31
- 32 • Another participant noted that this might be a good program to address energy efficiency in  
33 residential, especially multi-family, buildings. However, there was some discussion of the  
34 increased risk of non-occupancy with residential customers. Based on those discussions, it  
35 might make sense to limit residential customers’ payment streams to only half the life of the  
36 measures.

### 37 38 **Plymouth Focus Group Summary**

39  
40 On March 7<sup>th</sup> at 7:00 PM, the Energy Efficiency Institute, Inc. (EEI) facilitated a focus group of  
41 New Hampshire Electric Cooperative (NHEC) customers. NHEC arranged for nine customers to  
42 attend. The focus group used a round-table format and the discussion lasted two hours. Paul  
43 Cillo from EEI facilitated the meeting and refreshments were provided for participants. Staff  
44 from NHEC and EEI were seated away from the table and took notes. The focus group was  
45 video taped.

1  
2 The focus group participants represented a good mixture of residential and small commercial  
3 customers.

- 4
- 5 • Four of the participants were homeowners: one with a large old house, one with a modular
  - 6 home, one with a renovated camp and one with a newer home.
  - 7 • One was a homeowner with an in-house day care business.
  - 8 • Two participants were landlords: one owns 25 housing units and two commercial properties,
  - 9 the other owns two electrically-heated condominiums.
  - 10 • Two were small business owners: one with a printing business and bed and breakfast, the
  - 11 other with a local hardware store.
- 12

13 The focus group consisted of an almost equal mix of residential and small commercial customers  
14 and the difference in the thinking of the two groups was striking. Although all the small  
15 commercial customers were also homeowners, there was clearly a difference in how business  
16 people viewed the PAYS offer compared to how it was perceived by homeowners.

17

18 All participants were concerned about their energy costs. The homeowners were much less  
19 concerned about what measures were appropriate and how savings were calculated and much  
20 more concerned about having projects identified and managed for them. The small business  
21 participants indicated their need to be confident that the solution they chose was the best one.  
22 They were concerned with not making a mistake, particularly one involving money. The  
23 dramatic difference between the approach of the homeowners and the small business owners  
24 made managing this group more difficult than anticipated. EEI would recommend not  
25 combining these two types of customers for future focus groups.

26

27 For the most part, participants substantiated that PAYS could help them overcome barriers that  
28 have prevented implementation of specific projects when and if PAYS is implemented. One  
29 participant explicitly stated she could not afford to implement needed measures and PAYS  
30 would be perfect for her. A small business owner acknowledged that she might use PAYS to  
31 implement a lighting project she had turned down because the 3.5 year payback was too long. A  
32 landlord, who initially claimed that PAYS would not help him to implement measures since he  
33 would do the work on his own without assistance, later said it might help with major  
34 investments.

35

36 There were a number of unexpected findings that should be considered for incorporation into  
37 NHEC's submission to the New Hampshire Public Utilities Commission:

38

- 39 • One participant, a residential customer, suggested that it would be important to have one
- 40 person to call throughout the process. This same person emphasized that the process needed
- 41 to be as easy as possible. During implementation, as problems arise, it will be important to try
- 42 to ensure, especially for residential customers, that they only have to deal with one person and
- 43 that NHEC does not solve program administrative problems by transferring burdens to its
- 44 customers.

- 1 • One participant asked about backlogs. This customer was concerned the offer might be so  
2 attractive there would be too many applicants for services. NHEC might want to consider  
3 backlogs a good thing. If they really get too large, an administrative fee could be added to all  
4 projects to offset the cost of hiring new staff.  
5
- 6 • A number of participants discussed the issue of disclosure of the PAYS Delivery Charge to  
7 succeeding customers. Some thought realtors will complain (based on conversations we have  
8 heard in Vermont, they will). Some thought they might just pay off the charges rather than  
9 get involved with explaining them to the next owner or tenant. All agreed a disclosure lien  
10 would not be a disincentive to participate. (Note: While some participants will undoubtedly  
11 decide to pay off the charges rather than disclose to the next customer, PAYS relieves the  
12 customer of the obligation to pay it off which removes a barrier at the time the customer is  
13 deciding whether or not to purchase a PAYS product.)  
14
- 15 • One participant indicated possible interest in a PAYS retail option (e.g., for compact  
16 fluorescent lights). This, and perhaps other portable measures, is something NHEC might  
17 want to pursue, especially given its initial focus on residential customers.  
18
- 19 • The small business customers were concerned with long payment terms and the associated  
20 interest costs. They had a hard time understanding that the longer payment period afforded  
21 them greater immediate savings, even with high interest rates. Even when the customer who  
22 had turned down the lighting project saw that by extending the project to 8 years she could get  
23 half the savings and cut her electric bill by \$360 a year, she was hesitant. It will be interesting  
24 to see how small business customers actually respond to PAYS offers. NHEC should think  
25 about how to market to this customer group to address these concerns and should be prepared  
26 for this class of customers to refuse great deals out of fear that there is some better deal  
27 available to them. NHEC might then have to target other customers.

1 **APPENDIX G**  
2 **PSNH & NHEC Proposed Risk Management Plan**

3  
4 Eight different types of risk are noted in Section III.C, “Risk Analysis”. The companies have  
5 designed this pilot, regardless of who assumes the risk, to mitigate these risks to the greatest  
6 extent possible. The goals are to:

- 7  
8 • remove as many of these risks as possible from customers purchasing PAYS products;  
9 • responsibly manage the SBC dollars; and  
10 • minimize the possibility that bad debt from the PAYS program would need to be recovered  
11 from sources other than the PAYS budget.

12  
13 The companies propose to address these eight risks as follows:

14  
15 *1. The investor goes out of business, leaves the location or otherwise is not around long enough*  
16 *to get the investment back through expected energy savings.*

17  
18 The companies propose to remove this risk from the purchasing customer and address it by  
19 requiring subsequent customers at a location where permanent PAYS measures have been  
20 installed to pay their share of the PDCs. Subsequent customers will be required to pay PDCs  
21 during their occupancy until all costs associated with the measure(s) are recovered (i.e., as long  
22 as the measure functions).

23  
24 *2. The investor wants or needs to sell the property and cannot recoup the unrealized portion of*  
25 *the investment with a higher sale price.*

26  
27 Since the PDC obligation ends for a customer when that customer’s occupancy ends, customers  
28 are relieved of this risk. There is a risk, however, to the capital provider that there might not be a  
29 future customer and, therefore, no one to pay the PDC. This risk is mitigated by setting the PDC  
30 term initially at two thirds of the estimated measure life. This approach allows for significant  
31 periods of vacancy since the payment term will simply be extended to permit the capital provider  
32 to recover its costs (including additional financing costs). The companies also propose to  
33 address this risk by working to avoid offering PAYS products in areas where they believe there  
34 may be concerns about prolonged periods of non-occupancy.

35  
36 *3. The equipment fails in the period between the end of the warranty and the date when the*  
37 *investment will be paid off by the energy savings.*

38  
39 Since customers do not pay the PDC if the equipment fails, customers are relieved of this risk  
40 with PAYS. The companies plan to minimize this risk by ensuring that reliable equipment is  
41 properly installed. Using the agency relationship described in this plan, the companies will  
42 oversee proper installation of quality measures. Additionally, the companies will retain the right  
43 to repair or replace equipment and extend the payment period as necessary to recover all costs.  
44 Only catastrophic failure of many expensive measures early in the PDC term could cause a  
45 significant problem. This risk would need to be insured, if possible.

1 *4. The installed equipment is obsolete before it pays for itself.*  
2

3 The customer will retain some of this risk. This risk will be mitigated in the pilot by installing  
4 high quality reliable products that save more than they cost and by structuring the payments so  
5 that the customer experiences significantly better cash flow having installed the PAYS product.  
6 Even if more attractive technologies or better offers come along, the customer will still have  
7 benefited from their choice.  
8

9 *5. The installed equipment is no longer wanted by the current occupant.*  
10

11 There are many reasons why a building occupant might not want the installed equipment.  
12 Lighting, for example, that was appropriate for an office, might not be appropriate for retail. The  
13 companies will work to avoid installations in buildings that are likely to experience this type of  
14 change of use. However, to some extent, customers will retain this risk if they want to  
15 significantly change their usage. Disclosure of the PDC and installed measures to subsequent  
16 occupants and/or purchasers and the option of the current occupant to pay off all PDCs ensures  
17 that if the measure is actually not wanted by subsequent occupants, they will take occupancy  
18 knowing they need to pay this charge or simply not take occupancy of that space.  
19

20 *6. The occupant's needs change resulting in either increased or reduced usage and a*  
21 *corresponding change in the anticipated savings.*  
22

23 To a limited extent, the customer will retain this risk. This risk will be mitigated in the pilot  
24 because savings estimates are based on customers' projections and customers will be informed  
25 by the companies that if their usage changes, savings will vary. Additionally, ensuring that  
26 measures are only packaged as PAYS products if two thirds of their savings can cover their  
27 annual costs ensures that even if the estimate is fifty percent off, the customer will not pay more  
28 than they save. Careful disclosure of the PDC should ensure that subsequent customers will not  
29 take occupancy if they do not believe they can benefit from the measure(s).  
30

31 *7. Energy prices go down so it takes longer to recoup the investment.*  
32

33 Again, customers will retain some of this risk. Historically, this has not been a significant  
34 problem. However, ensuring that measures are only packaged as PAYS products if two thirds of  
35 their savings can cover their annual costs ensures that even with significant reductions in energy  
36 costs, the customer will not pay more than they save. Additionally, customers typically do not  
37 complain when energy prices go down.  
38

39 *8. The building is destroyed and the measures are not insured.*  
40

41 The customer will be relieved of this risk. The companies may insure all projects with a third  
42 party insurer. A number of capital providers have indicated such insurance is available and  
43 affordable.