IDAHO POWER
An IDACORP Company

DEMAND-SIDE MANAGEMENT ANNUAL REPORT

FOR THE 2004 INTEGRATED RESOURCE PLAN

Providing a foundation for a bright future.

IDAHO POWER
An IDACORP Company

DEMAND-SIDE MANAGEMENT ANNUAL REPORT

FOR THE 2004 INTEGRATED RESOURCE PLAN

July 2004

TABLE OF CONTENTS

DEMAND-SIDE MANAGEMENT OVERVIEW 1

DEMAND-SIDE MANAGEMENT TERMS 3

CUSTOMER PROGRAMS 4

DEMAND RESPONSE PROGRAMS 4

A. Programs for Residential Customers 4

ENERGY EFFICIENCY PROGRAMS 6

A. Programs for Residential Customers 6

B. Programs for Commercial Customers 15

C. Programs for Industrial Customers 17

D. Programs for Irrigation Customers 19

MARKET TRANSFORMATION 21

A. Northwest Energy Efficiency Alliance 21

EDUCATION, SMALL PROJECTS, AND TRAINING PROGRAMS 23

A. Small Project/Education Funds 23

B. Northwest Building Operator Training 24

ENERGY EFFICIENCY ADVISORY GROUP ACTIVITIES 27

A. Energy Efficiency Advisory Group Recommendations 27

LOOKING AHEAD 31

DATA TABLES 32

2003 DSM PROGRAM ACTIVITY 32

HISTORICAL DSM PROGRAM ACTIVITY 33

DSM FINANCIAL FACTORS 35

DEMAND-SIDE MANAGEMENT OVERVIEW

2003 was a year of increasing activity and policy development in demand-side management (DSM) at Idaho Power. Four major DSM programs were initiated: Manufactured Home Energy Check-ups, Energy Efficient Manufactured Home Incentives, Industrial Efficiency and Irrigation Efficiency. Idaho Power conducted four pilot programs: Air Conditioner Cycling Demand Response, the window air conditioner rebate program (Trade In, Trade Up to ENERGY STAR®), AirCare Plus and the quick-start phase of the ENERGY STAR Homes Northwest Program. The Energy Efficiency Advisory Group (EEAG) met four times and provided valuable input to the process. Idaho Power completed a 2003-2005 Demand-side Management Plan that outlines for the first time in many years the management philosophy and direction for DSM. A major effort to develop DSM options for the Idaho Power 2004 Integrated Resource Plan began at the end of 2003. Finally, Idaho Power added two new full-time staff and has established accounting and reporting procedures to facilitate the ongoing growth in DSM activity.

Idaho Power worked closely with the Northwest Energy Efficiency Alliance (Alliance) and will use the research and infrastructure developed by the Alliance in local programs. The ENERGY STAR Homes Northwest Program, the Manufactured Home Energy Check-ups and the Industrial Efficiency Program will rely heavily on the Alliance's work. The Alliance's efforts in the Pacific Northwest impact Idaho Power's customers by providing behind-the-scenes market changes as well as providing leverage to Idaho Power local programs.

2003 is the third year of a five-year agreement between Idaho Power and the Bonneville Power Administration's Conservation and Renewable Discount Program (BPA C&RD). Idaho Power directs the C&RD funds to programs that serve lower-income residential customers.

In 2003, Idaho Power realized savings of 5,912 MWh and 189 kW of summer peak reduction from its energy efficiency and demand response programs. Savings from market transformation efforts are reported by the Alliance and are summarized later in this document.

During the course of the year, Idaho Power spent $2,865,112 promoting energy efficiency, including payments of $1,274,936 to the Alliance, $707,379 for programs funded through the Idaho Tariff Rider (Rider), and $310,652 on BPA C&RD programs. The Rider funding in 2003 totaled $2,629,798, while funding from the BPA for C&RD programs totaled $515,180. Table 1 details DSM expenditures by program.

Table 1. - Expenditures for Energy Efficiency in 2003

Program Category	Utility Cost
Idaho Tariff Rider	
ENERGY STAR New Resid. Const.	$ 13,597
AC Cycling Pilot	234,252
ENERGY STAR Room AC Pilot	6,687
CFL Lighting Coupon Program	305,683
School Building Operator Training	48,853
Air Care+ Pilot	3,364
Industrial Efficiency Program	1,303
Irrigation Efficiency Program	8,975
DSM Peak Reduction Study	39,321
EEAG Meetings	3,099
Small Project/ Education Funds	5,100
DSM Analysis & Accounting	36,105
Misc. Expenditures	1,041
Total	$ 707,380
BPA Conservation & Renewable Discount (C&RD)	
Manufactured Home Energy Check-Ups	$ 183,653
Energy Efficient Manufactured Home Incentive	37,319
Supplemental LIWA	49,895
Other C&RD Administration	39,785
Total	$ 310,652
Northwest Energy Efficiency Alliance (NEEA)	
NEEA Idaho	$ 1,217,590
NEEA Oregon	57,346
Total	$ 1,274,936
Low Income Weatherization Assistance (LIWA)	
LIWA - Idaho	$ 228,834
LIWA - Oregon	22,255
Total	$ 251,089
Oregon Programs	
Oregon Residential Weatherization (Schedule 78)	$ - *
Oregon Commercial Audits (Schedule 82)	4,000
Total	$ 4,000
Other DSM Costs	
Total	$ 317,055
Total DSM Expenditures	$ 2,865,113

* Work completed in 2003 will be paid in 2004.

DEMAND-SIDE MANAGEMENT TERMS

AC—Air Conditioning

Alliance—Northwest Energy Efficiency Alliance

BPA—Bonneville Power Administration

C&RD—Conservation and Renewable Discount Program

CFL—Compact Fluorescent Lamp

DSM—Demand-Side Management

EEAG—Energy Efficiency Advisory Group

HVAC—Heating Ventilation and Air Conditioning

IED—Idaho Energy Division

IPUC—Idaho Public Utilities Commission

LIWA—Low-Income Weatherization Assistance

NWBOA—Northwest Building Operators Association

PTCS—Performance Tested Comfort Systems

Rider—Idaho Tariff Rider

CUSTOMER PROGRAMS

DEMAND RESPONSE PROGRAMS

A. Programs for Residential Customers

➲ ***Air Conditioning Cycling Pilot***

Active Dates:	March 2003—Ongoing
Target Customers:	Homes in Boise and Meridian with air conditioning
Participants:	204
Utility Costs:	Total Actual Pilot Program Costs = $275,645
Savings in kWh:	See discussion below
Savings in kW:	159 kW

DESCRIPTION

In March 2003 the Idaho Public Utilities Commission (IPUC) issued Order No. 29207 and approved a request by Idaho Power to conduct a two-year Air Conditioning Cycling Pilot Program. The Program is a voluntary plan for residential customers that enables Idaho Power to directly address summer peaking requirements by reducing some of the air conditioning load which is one of the primary loads contributing to the summer peak.

Idaho Power's primary goal of the AC Pilot Program is to assess the effectiveness of air conditioning control on reducing peak load. Specific objectives include:

- Assess effect of control on customer satisfaction and comfort and retention
- Develop analysis model for measuring peak load reduction
- Gain operating experience in managing program
- Test equipment

Approximately 200 households were selected from about 750 applications for the first year of the Program. Cycling commenced on June 18, 2003 and continued on a random schedule for 26 events until August 25, 2003. The approximate total cost for the first year of the Program was $275,645 ($234,252 of Rider dollars and $41,393 of Idaho Power labor costs) and the budgeted amount was $389,600.

The single greatest factor that impacted the Program was a thermostat firmware malfunction that was not discovered and diagnosed by the manufacturer until two-thirds of all thermostats had been installed in participants' homes. This equipment malfunction necessitated a thermostat recall and caused a series of issues that delayed installation, inconvenienced participants, and resulted in implementing fewer cycling days than originally planned.

RESULTS

- Based on the results of the first year's data, the Program does produce a substantive and measurable effect of approximately 0.78 kW reduction per participant in AC load during cycling periods, with a larger increase of 1.07 kW reduction per participant during cycling when the outside temperature is 100° or greater. This reduction in AC load during cycling results in participants shifting AC usage to non-cycling periods. In year one of the Program this resulted in a small net increase in kWh usage of 0.4 kWh per participant during a cycling day. These values may change when combined with year two results.
- The participants in year one tended to be older, conservation-conscious, and lived mainly in 4 zip codes in Boise and Meridian. As a group they average less energy consumption in the summer than the average Idaho Power customer with air conditioning.
- About 74% of participants experienced little or no discomfort from cycling, and overall average home temperature increase was 1-2 degrees over the four-hour cycling period.
- Customer surveys taken before and after the cycling season indicate high levels of customer satisfaction on measures including information provided, installation process, customer service and overall program management.

NEXT STEPS

Work is proceeding on participant recruitment, product manufacturing, customer service training, and installation for year two of the Program, which will add an additional 300 participants in 2004. The Program schedule provides for installation to be complete by early May to allow additional time prior to cycling for troubleshooting and final testing.

ENERGY EFFICIENCY PROGRAMS

A. Programs for Residential Customers

➲ *CFL Lighting Coupon Program*

Active Dates:	Through June 2003
Target Customer:	Residential and small commercial customers
Participants:	12,663
Utility Costs:	$314,641
Savings in kWh:	3,596,150 kWh
Savings in kW:	411 kW

DESCRIPTION

In early 2003, Idaho Power initiated a second phase of the Compact Fluorescent Lamp (CFL) Lighting Coupon Program that followed a successful retail-based coupon program conducted in 2002. This second phase leveraged an opportunity to work with a large retailer, Costco, who had not participated in the first phase of the Program. Both the Boise and Twin Falls Costco stores were part of this Program. The contractor for this Program, Ecos Consulting, worked with Costco to make sure a wide range of ENERGY STAR CFL product was available. They arranged an automatic price reduction promotion – in effect, a form of "paperless" coupon. Rebates per bulb ranged from $1 to $2 per bulb depending upon the kind of bulb sold.

The Program kick-off was held during Earth Day weekend. The Program contractors developed a consumer educational brochure that was available to Costco customers during the promotion. Costco marketed the promotion through its own venues, and Idaho Power issued a press release announcing the Program.

RESULTS

In 2003, as part of the second phase of the CFL Lighting Coupon Program, over 48,000 CFLs were sold with incentives through the Costco promotion. This phase of the Program proved to be very cost-effective because a high volume of bulbs was sold with a low coupon value and very little promotion. Idaho Power also completed a component of the Program that provided CFLs free of charge to Community Action Agencies for distribution to low-income customers. 2,000 bulbs were distributed in this manner.

NEXT STEPS

Idaho Power completed the CFL Lighting Coupon Program by late spring 2003. Ecos Consulting presented its final report August 1, 2003. Idaho Power will continue to provide information to our customers periodically in bill stuffers and on the web encouraging the purchase and appropriate placement of ENERGY STAR CFL bulbs.

➲ *ENERGY STAR Homes Northwest "Quick Start"*

Active Dates:	September 2003—Ongoing
Target Customers:	New homebuyers and residential builders
Participants:	N/A
Utility Costs:	$13,597
Savings in kWh:	N/A
Savings in kW:	N/A

DESCRIPTION

The ENERGY STAR Homes Northwest Program is a new, regionally coordinated initiative supported by the Alliance, electric and gas utilities, state energy organizations, builders, trade allies and other related organizations to build and sell energy efficient homes in Oregon, Washington, Idaho and Montana. Leading with the nationally recognized brand of ENERGY STAR, the Program provides significant assistance to builders with increased marketing, ally training, awards, and cash incentives to support the construction of homes that are 30% more energy efficient than current Idaho building codes and standards. Idaho Power is partnering with the Idaho Energy Division (IED) and Alliance to provide consumer marketing, builder incentives, and subcontractor training to expand the existing ENERGY STAR Program.

Idaho Power's primary objective with this Program is to reduce future peak summer demand caused by inefficient residential building envelope construction practices and AC usage, especially in capacity-constrained high-growth service territory in the Treasure Valley.

As this is a new program, a number of issues must be resolved and processes and procedures developed to begin enrolling builders, educating consumers, training subcontractors, and ultimately building new homes. These issues include:

- Final determination of the exact specification in Idaho for r-values, HVAC equipment and installation procedures for ENERGY STAR certification.
- Transition from existing ENERGY STAR specification. The IED currently operates a statewide energy efficient homebuilding program whose specification is different from the Northwest specification included in this regional program. When and how this specification changes for the builders is still under negotiation.
- Verification and quality assurance. The IED contracts with local individuals (Home Performance Specialists) who currently provide technical assistance and independent verification of energy efficient materials and installation methods to builders. How their role will change and how verification will be performed is under discussion among all the partners.
- Amount of dollar incentive to be paid to builders. Idaho Power has contracted with Ecotope to determine the demand savings that can be cost-effectively reimbursed to builders.

Idaho Power has been actively working with IED, the Alliance, local builders and Home Performance Specialists to discuss these issues, propose alternatives and solutions, and move the process forward.

NEXT STEPS

The "Fast Track" timetable anticipates these issues will be resolved over the winter 2004 and a consumer marketing campaign will begin in the spring to coincide with the Ada County Parade of Homes consumer event in April and May.

➲ *Energy Efficient Manufactured Home Incentives*

Active Dates:	January 2003—Ongoing
Target Customers:	New manufactured homebuyers
Participants:	73
Utility Costs:	$37,319
Savings in kWh:	227,434 kWh
Savings in kW:	Not measured in C&RD Programs

DESCRIPTION

In 2003, Idaho Power launched a program to encourage manufactured home buyers to purchase energy-efficient Super Good Cents homes. The BPA's C&RD Program funds this effort. The goal of the Program is to help buyers purchase Super Good Cents homes and to encourage salespeople to discuss energy efficiency. Customers who purchase a Super Good Cents home and site it in Idaho Power's service territory are eligible for a $300 rebate. In addition, the salesperson receives a $75 incentive.

Given that the BPA funds this Program, the EEAG has received updates but has not offered recommendations. To date, there have been no customer or industry concerns about the Program. Idaho Power has partnered with the Northwest Energy Efficiency Manufactured Homes Program and the IED to generate interest in the Program and confirm Super Good Cents certification of each home.

NEXT STEPS

Interest in the Program has been steady. In 2004, Idaho Power will develop a marketing plan for the Program to increase participation. In addition, an extra incentive for an ENERGY STAR-qualified home (using either a heat pump or a heat recovery system) will be introduced. The amount of the incentive to be paid is currently being evaluated.

➲ *Trade In, Trade Up to ENERGY STAR Pilot*

Active Dates:	July 2003
Target Customers:	Residential customers with room air conditioners
Participants:	113/99
Utility Costs:	$6,687 (additional costs paid by the Alliance)
Savings in kWh:	14,454 kWh
Savings in kW:	11.67 kW

DESCRIPTION

The Trade In, Trade Up to ENERGY STAR promotion was offered to Idaho Power by ENERGY STAR Home Products Program as a pilot funded by the Alliance. The pilot program was held on July 12, 2003 at two retailers in the Treasure Valley. Customers were encouraged to bring in their old, inefficient room air conditioner and replace it with an efficient ENERGY STAR unit. As an incentive, customers who both traded-in an old unit and traded-up to an ENERGY STAR unit were eligible for a $30 mail-in rebate from Idaho Power and an in-store $30 discount, $10 of which was underwritten by Idaho Power.

Idaho Power set the following goals for the project:

- Test methods for attracting retailers and reaching customers
- Evaluate cost-effectiveness of promotion
- Reduce summer peak

During the pilot, all of these goals were met. Findings from each area are discussed below. After developing projections for an event held throughout the service territory, a full program was rejected because it cannot be designed in a cost-effective manner.

RESULTS

The ENERGY STAR Home Products Program recruited Nampa Appliance & TV and RC Willey for this project. Other retailers showed considerable interest but were unable to commit due to limited stock on hand, local promotional restrictions or limited advance notice of the promotion. It was clear that retailers are interested in programs of this type.

Newspaper and radio advertisements along with a direct mail piece were used to generate customer interest. Publicity included radio interviews and announcements, television and newspaper coverage and information on Idaho Power's web site. Retailers were supplied with a variety of promotional material to display prior to the event as well. In total, Idaho Power estimated that more than 13,000,000 customer impressions were generated during the course of the promotion. In a survey completed by participating customers, about half of the customers sited a paid advertisement as the way they learned about the promotion.

The promotion generated 113 trade-in units and 99 ENERGY STAR unit purchases. Less than 70% of eligible rebates were requested. Idaho Power issued 67 customer

rebates and 62 retailer rebates. These rates are surprisingly low given that customers and retailers received a reminder call prior to the deadline for submitting rebates.

Idaho Power's expenses were limited because of the Alliance's financial commitment to the promotion. Idaho Power's budget for the project was $15,000. Actual costs were $6,687, including $2,630 for incentives and $3,706 for program management staff. Cost-effectiveness must be based on projected costs of a full program rather than actual costs affiliated with a pilot. A budget for a full program projected a $108 - $135 per unit cost, depending on the number of participating retailers and customers. This per unit cost was then measured against the savings numbers and showed that a future promotion would not be cost-effective.

Savings numbers are based on conservative estimates that assumed a measure life of 15 years, 990 annual operating hours, a coincident factor of 0.8 and lifetime measure impacts rather than only first-year impacts. The following savings were calculated for the pilot:

- Energy savings
  - Annual savings per unit – 146 kWh
  - Total Program savings (over 15 years) – 216,633 kWh
- Summer peak savings
  - Annual savings per unit – .12 kW
  - Program peak reduction – 11.67 kW

Given that new ENERGY STAR units are only 10% more efficient than their non-qualifying counterparts, it is difficult to expect significant savings from this promotion. These limited savings compared to the high per unit cost discussed above render this project not cost-effective.

NEXT STEPS

The pilot promotion results were presented to Idaho Power management and the EEAG. It was agreed that, while a promotion of this nature is appealing for many reasons, it should not be undertaken. Cost-effectiveness is one of the top evaluation criteria and renders this project undesirable at this time. Other learnings from the project, including marketing techniques, partnership opportunities and program evaluation methods can be used in other energy efficiency programs.

➲ *Manufactured Home Energy Checkups*

Active Dates:	October 2002—December 2003
Target Customers:	Manufactured and mobile home residents
Participants:	420 homes
Utility Costs:	$183,653
Savings in kWh:	602,723 kWh
Savings in kW:	Not measured in C&RD Programs

DESCRIPTION

Idaho Power launched a pilot program in October 2002 to provide duct sealing and additional efficiency services to customers living in manufactured homes. The services were free to customers and included the following:

- Duct testing and sealing according to Performance Tested Comfort System (PTCS) specifications endorsed by the BPA
- 2 CFL bulbs
- 2 furnace filters along with replacement instructions
- Hot water temperature test
- Energy efficiency materials.

The Program was managed under contract by Climate Crafters, an Alliance supported non-profit in northern Idaho. Climate Crafters relied on local HVAC dealers in Payette and Pocatello to market and perform the services. Upon completion of the pilot in May 2003, Idaho Power authorized Climate Crafters to continue work in Payette and Pocatello through the end of 2003.

The goal of the pilot was to test the viability of providing duct sealing and energy efficiency services to our customers using an outside contractor. Key elements to evaluate included:

- Customer interest in and satisfaction with the Program
- Contractor acceptance PTCS standards and affiliated technology
- Need for duct sealing in manufactured homes
- Ability to reach customers in a cost-effective manner

The pilot was successful in meeting these goals, laying the foundation for a full rollout of the Program. The goal for the remainder of 2003 was to serve customers in the pilot areas in a professional and efficient manner while developing a program for the entire service area.

RESULTS

- Customer interest in the Program was high once the services offered were understood. Customers found it hard to believe it was free with no future obligation.
- Customer satisfaction with the Program was extremely high. Voluntary survey responses indicated an overwhelming agreement that the services were well performed and appreciated.
- Contractor acceptance of the PTCS standard proved challenging. Only one of the three contractors wanted to continue working in the Program after the pilot. Duct

sealing of this nature proved difficult to make profitable for traditional HVAC businesses that rely heavily on the sales and installation of equipment rather than just the servicing of that equipment. An alternate approach, using insulation and weatherization contractors, will be used in the future.

- The need for duct sealing is apparent. In the homes tested and sealed to PTCS standards, an average of 65% reduction of air leakage was achieved. Of all homes tested, less than 10% met PTCS standards without sealing.
- Reaching customers in manufactured home parks was not difficult. The challenge was effectively reaching other eligible customers and scheduling the work in a cost-effective manner.

	2003
Homes Served	420
Test + Seal Homes	331
CFLs	822
Furnace Filters	766
Costs	$183,653
C&RD Credits	$229,183
Annual kWh Savings	602,753

NEXT STEPS

Approval to expand the Program to the entire service area was received in 2003 and a request for proposal was sent out to prospective program managers. Ecos Consulting, in partnership with Delta-T and Energy Solutions, was selected to run the project. Program expansion is underway and Idaho Power expects to serve an additional 1,500 homes in 2004 and early 2005.

➲ *Low-Income Weatherization Assistance (LIWA)*

Table 2. Low-Income Weatherization Assistance in 2003

Agency	Weatherization Jobs	Utility Cost
Canyon County Organization on Aging, Inc.	71	68,501
Eastern Idaho Special Services Agency, Inc.	4	3,187
El-Ada Community Action Agency, Inc.	91	129,449
South Central Community Action Agency, Inc.	64	45,530
Southeastern Idaho Community Action Agency	35	31,362
Idaho Subtotal	265	$278,029
Malheur Council on Aging (Oregon)	29	22,255
Total	294	$300,284

DESCRIPTION

Since 1989, Low-Income Weatherization Assistance has been a public-purpose program to make energy services more affordable to low-income customers. Idaho Power provides grants to local non-profit agencies participating in state-run weatherization programs in Idaho and Oregon to supplement federal funding of weatherization projects. The agencies recruit candidates and qualify households for the Program using the state's eligibility requirements. The state programs are administered in Idaho by the Department of Health and Welfare, Bureau of Benefit Program Operations, and in Oregon by the Department of Human Resources, State Housing & Community Services Department.

For all weatherization jobs in Oregon and those in Idaho funded by the C&RD, the dwellings must be electrically heated and all measures must provide cost-effective electricity savings. For the remaining jobs in Idaho, the Program is fuel-blind and allows some health and safety measures. Idaho Power typically pays 50% of the cost of qualifying measures plus a $75 administration fee per dwelling.

RESULTS

LIWA activity by agency and state is shown in Table 2. Included in the 265 jobs completed in Idaho, 57 electrically heated homes were weatherized using $49,895 provided through the C&RD from the BPA. The 57 jobs funded through the C&RD save an estimated 230,850 kWh per year. The remaining 208 jobs resulted in an estimated 842,400 kWh savings per year. 29 weatherization jobs were completed in Oregon in 2003 and saved an estimated 117,450 kWh per year.

The Program also funds weatherization of buildings occupied by tax-exempt groups. In 2003, LIWA provided $15,225 to help three nonprofit organizations in Idaho: the Idaho City Senior Center, the Christian Retirement Center in Boise, and the Pregnancy Crisis Center in Twin Falls.

➲ *Oregon Residential Weatherization (Schedule 78)*

DESCRIPTION

This statutory program requires the annual notification of all residential customers in Oregon to inform them how to obtain energy audits and financing for energy conservation measures. To qualify for an Idaho Power audit or financing, customers must have electric space heat. The Program offers loans at 6.5% interest or cash payments of 25% of the cost-effective portion of recommended measures. Loans for measures that are not cost-effective are also available at a higher interest rate, but the maximum total loan amount is $5,000 per dwelling, and loans are subject to credit approval. The maximum cash payment is the installed cost of the measures excluding labor by the owner, up to $1,000 per dwelling.

RESULTS

In 2003, there were 28 inquiries regarding residential audits, and 16 audits were performed. In addition, 4 cash rebates totaling $1,057 were paid in 2004 for work completed in 2003. The total cost of energy conservation measures completed in 2003 was $4,765 and associated annual savings amounted to 31,875 kWh. The Idaho Power also received cash payments totaling $943 on uncollectible accounts. Idaho Power does not record kWh savings from a project until payment is made.

All audits were for single-family homes, and none of the participants were identified as being low-income customers. Idaho Power does not estimate the energy savings resulting from the audits. This year, the company will again notify all residential customers of this Program and honor all requests for audits and financing from qualified customers.

B. Programs for Commercial Customers

➲ *AirCare Plus Pilot*

Active Dates:	May 2003—October 2003
Target Customers:	Small commercial customers with rooftop units
Participants:	31 units
Utility Costs:	$3,364
Savings in kWh:	33,976 kWh
Savings in kW:	NA

DESCRIPTION

Idaho Power joined with the Alliance and its contractor, Portland Energy Conservation, Inc, to operate a pilot designed to save energy and peak through a premium operation and maintenance service of HVAC rooftop units for commercial customers. The AirCare Plus Pilot Program provided operation and maintenance servicing of rooftop heating and cooling units targeting units with economizers. Idaho Power participated in this pilot in order to determine whether this kind of program would help reduce summer peak and provide a desirable service to small and medium commercial customers.

A goal of the Program was to determine if the economizers in the rooftop units were functioning properly and were being serviced routinely. There has been a lack of diagnostic tools and testing equipment in the service industry for the testing and performance of the economizer. Normally, if economizers are setup at all it is by the factory or the original installer and the settings are never checked. The AirCare Plus tool also offers a comprehensive comparison for the customer to decide on further unit servicing, retrofitting economizers and unit replacement along with a detailed inventory of their rooftop units.

RESULTS

Three HVAC vendors were trained, two in Boise and one in Twin Falls. A total of 31 HVAC rooftop units were serviced; 25 in Boise and 6 in Twin Falls. The total cost of the Program for 2003 amounted to $5,764, $3,364 was paid with Rider dollars and $2,400 were Idaho Power labor costs. Energy consumption for past billing periods on select units that were monitored for several weeks before and after the servicing were provided by Idaho Power with the customers' consent.

A typical service would cost approximately three hundred dollars and took about three hours to perform. Idaho Power provided a $100 incentive per unit.

Customer acceptance was varied. Existing service contracts, low energy costs, high replacement and repair costs and extreme temperatures during program months were just some of the issues incurred. In order to insure that summer peak reduction potential was measured, Idaho Power offered to pay for additional units to be monitored as part of the Alliance's evaluation plan. Stellar Processes was hired by the Alliance to do the on-site

monitoring of participating units before and after units were serviced. Some units that were not serviced were also monitored. In Idaho Power's service territory, 11 units were monitored. Stellar Processes reported actual savings of an average of 1096 kWh/unit, which was consistent with estimated savings of 998 kWh/unit. Peak savings data was inconclusive. However, there was a wide variation of savings that rendered predictable savings unreliable at this time.

NEXT STEPS

There may be regional efforts to look at what can be further concluded from this research. Because of the high number of rooftop HVAC units in the Idaho Power service territory and the large impact they have on the summer peak, Idaho Power will monitor developments and may participate with further research in this area.

➲ *Oregon Commercial Audit (Schedule 82)*

DESCRIPTION

This statutory program requires that all commercial customers in Oregon be notified every year that information about energy saving operations and maintenance measures for commercial buildings is available and that commercial energy audit services can be provided, normally at no charge. Customers using more than 4,000 kWh per month may receive a more detailed audit but may be required to pay a portion of the costs.

RESULTS

In 2003, there were 30 inquiries about commercial audits, and 21 audits were performed. Employees conducted 11 audits, and contractors performed 10 audits on behalf of the company at a cost of $4,000. The Idaho Power does not monitor which audit recommendations are implemented and does not estimate energy savings for this Program.

This year, the company will again notify all commercial customers of this Program and provide audit services to qualified customers who request them.

C. Programs for Industrial Customers

➲ *Industrial Efficiency Program*

Active Dates:	October 2003—Ongoing
Target Customers:	Customers with a Basic Load Capacity over 500 kW
Participants:	None
Utility Costs:	$1,303
Savings in kWh:	NA
Savings in kW:	NA

DESCRIPTION

The primary purpose of this Program is to acquire peak kW and kWh savings from projects at industrial customer sites and assist industrial customers to reduce energy costs. The Program was marketed to 280 qualifying customers. Customers are required to identify a project applicable to their own facilities, provide sufficient information to Idaho Power to establish a basis for a viable conservation project and complete an application. The customer also must allow for on-site power monitoring where practical and enter into an incentive agreement. Idaho Power will then review submittals to determine kWh and kW savings and whether the proposal meets other program requirements. It may take up to two years for an industrial customer to select a project, budget for it, assemble the project information, allow Idaho Power to analyze it, execute an agreement and implement the project.

Idaho Power provides engineering analysis of their project, financial assistance, energy audit assistance, demonstration programs, workshops, newsletters and expert advice.

RESULTS

There were six projects submitted in 2003 that are in various stages of processing. Two projects were determined to be viable by the end of the year and formal agreement signing is in progress. One project is estimated to save 184,000 kWh annually and 40 peak kW with a financial incentive of $17,519. The other project is expected to save 832,187 kWh annually and 90 peak kW with a financial incentive of $74,703.

Once the Program is at full capacity, the goals are to obtain approximately 5,625,000 kWh and 640 peak kW savings per year at a cost of $565,000 per year through the participation with a broad cross-section of industrial and large commercial customers.

Customers have indicated wide acceptance of the program design and are working toward providing the necessary information to have a viable project.

➲ *Distribution Efficiency Initiative Pilot*

DESCRIPTION

The Distribution Efficiency Initiative encourages the operation of the distribution system at a lower average voltage, when possible, to reduce consumption of various end-use loads. This research project, developed by the Alliance, involves multiple utilities and technologies to evaluate the cost effectiveness of different approaches. This project will also assess the potential effects of this effort by quantifying the achievable energy savings and demand reduction. This approach also has a direct demand response component.

Beginning in 2004, Idaho Power will assist Alliance in the research and development phase of this pilot. The research and development phase will consist of an extensive load research and benefit study. Idaho Power's contribution to this phase will include:

- Assisting in developing customer selections and making customer contacts.
- Installation of Home Voltage Regulator units.
- Installation of meters.

The Alliance plans to collect meter data for 12 months. At the end of the data collection period the Alliance will evaluate the data as well as conduct a participant survey.

The second phase of this pilot involves the implementation of demonstration projects. Idaho Power's role in this second phase will include:

- Installation of meters.
- Setting voltage regulation line drop compensation settings.
- Procuring and installing capacitors and voltage regulators.
- Supervisory Control and Data Acquisition (SCADA) installations and improvements (optional)

Through this pilot, the Alliance and Idaho Power expect to determine the energy savings and demand reduction potential through improved voltage regulation providing lower average voltages while maintaining or improving service quality.

D. Programs for Irrigation Customers

➲ *Irrigation Efficiency Program*

Active Dates:	September 2003—Ongoing
Target Customers:	New systems and existing systems being modified
Participants:	2
Utility Costs:	$11,190
Savings in kWh:	36,792 kWh
Savings in kW:	18 kW

DESCRIPTION

The Irrigation Efficiency Program is an incentive program for agricultural irrigation customers to install more efficient irrigation systems. The Program is available to both existing and new customers. Modified systems are reviewed by Idaho Power Agriculture Representatives to determine savings. The amount of the incentive to the customer is calculated by multiplying the kWh savings by $.10 or the kW reduced by $200, whichever is greater. The total incentive is limited to a cap of $5,000 or no more than 25% of the total costs for existing systems and $3,000 or no more than 10% of the total costs for a new system.

The Program will provide customers with information and education through annual workshops across our service territory. Idaho Power works with University of Idaho Extension System, the Natural Resource Conservation Service and the IED to provide these workshops to customers. Idaho Power Agriculture Representatives provide analysis, energy audits and expert advice to our irrigation customers. To be a direct participant in this Program the customer must identify a project on their system, provide sufficient information to Idaho Power to establish a basis for a viable conservation project and complete an application. The customer also needs to enter into an incentive agreement with Idaho Power.

This Program was promoted to customers through a direct mailer to irrigation customers. Also, Idaho Power Agriculture Representatives met with all agricultural irrigation equipment dealers and described the Program to them and left them with program brochures. The cost of the brochure and mailing was $3,883. The Program has generated a lot of customer interest. Each of Idaho Powers Agriculture Representatives has spent a great deal of time talking to customers about projects they are thinking of doing.

RESULTS

Two payments were made prior to the end of 2003. An additional nine contracts were signed but not paid by the end of 2003. Total expenditures for the Program in 2003 is $11,190 including $8,975 from Rider funding and $2,215 from Idaho Power labor.

This is an energy efficiency program for irrigation customers, therefore the savings from this Program will occur during the summer. Most projects that will make an irrigation system more efficient will also reduce the demand of the irrigation system. Idaho Power calculates energy savings for this Program by looking at each project specifically. The systems can range from very big to very small. Savings are calculated at each metered service point.

MARKET TRANSFORMATION

A. Northwest Energy Efficiency Alliance

Idaho Power accomplishes market transformation programs in its service territory by being a member of the Northwest Energy Efficiency Alliance (Alliance) and working to coordinate Alliance activities in Idaho. The Alliance is a regional group whose mission is to catalyze the Northwest marketplace to embrace energy-efficient products and services.

In 2003, after six years of existence, the Alliance initiated a retrospective evaluation to determine whether it had transformed enough markets to justify the costs of the Alliance. An ad hoc committee, that included members both internal and external to the organization, led the retrospective. Two primary finding of the study were that the Alliance has been successful at transforming, or contributing to the transformation of markets and that the benefits of the Alliance have exceeded costs. The study concluded that the regional approach of the Alliance is an asset and even greater leverage in program implementation can be gained in the future.

In 2003, Idaho Power paid $1,274,936 to the Alliance on a system basis. Idaho's share of the payments was $1,217,590 (95.5%) and Oregon's was $57,346 (4.5%). These amounts do not include other costs to participate in the Alliance, such as employees' time and travel that were absorbed by the company in its general operating expenses.

In Idaho, funding for the Idaho Power's participation in the Alliance was authorized through 2004 by Order No. 28333 in Case No. IPC-E-99-13. The Oregon Public Utility Commission has also approved the company's expenditures for the Alliance for 2003.

Preliminary estimates reported by the Alliance indicate that Idaho Power's share of regional market transformation kWh savings for 2003 is between 1.9 and 2.5 MWa. Idaho Power relies on the Alliance to report the energy savings and other benefits of the Alliance's regional portfolio of initiatives. Highlights of the Alliance's activities in Idaho in 2003 include:

- The Alliance partnered with Idaho Power for the Trade In, Trade Up to ENERGY STAR Pilot Program where more than 100 Idaho Power customers turned in their old room air conditioners.
- The Alliance conducted the AirCare Plus pilot with assistance from Idaho Power where 31 commercial HVAC rooftop units were provided a premium operating and maintenance service in order to determine savings and marketability of the service.
- The Alliance's ENERGY STAR Residential Lighting Program provided the backbone for Idaho Power's CFL Lighting Coupon Program.
- The BetterBricks day lighting advisors worked with the design team of Albertson's and succeeded convincing their to include energy savings features in all future stores.

- The Alliance co-funded a study with University of Idaho, Idaho Potato Growers Association and Cascade Engineering to study the effect of using variable speed drives on potato storage facilities. Preliminary results show energy savings and reduced potato mass loss.

The breadth of the Alliance portfolio can be found at www.nwalliance.org.

EDUCATION, SMALL PROJECTS, AND TRAINING PROGRAMS

A. Small Project/Education Funds

In order to be able to respond to research requests, educational opportunities and worthy small projects that are not eligible under other programs, Idaho Power, with support of the EEAG, set aside two funds: the Small Project Fund and the Education Fund. Each was initially funded with 2% of the Rider funding which results in approximately $54,000 available for each fund. In 2003, $2,400 was spent from the Small Project fund and $2,700 from the Education Fund. There are several projects that were obligated but not funded.

➲ ***Small Project Fund—Projects paid in 2003***

Envinta, One-2-five Energy Diagnostic, joint assessment with the Alliance
As part of industrial market research, Alliance offered to partially fund 20 Envinta audits in the Pacific Northwest. Idaho Power agreed to co-fund audits on two of their customers. Findings of all 20 audits will be used by Alliance to structure their final Industrial Sector Strategy. The two companies who agreed to participate were Swift & Company in Nampa and Tyson Foods in Boise. Both companies have been audited and final reports have been returned.

Total Cost: $2,400 ($1,200 per audit)
Sector: Industrial

➲ ***Small Project Fund—Projects obligated but not paid in 2003***

Solar for Schools, Castleford School District
Idaho Power agreed to contribute money from this fund to upgrade the energy efficiency of the Castleford School so that it could qualify to participate in the Solar for Schools project. The two measures identified were upgrading lighting in the cafeteria and installing vending misers in campus vending machines. Idaho Power agreed to pay $1,106 for these measures.

Total Cost: $1,106
Sector: Commercial

Foothills Environmental Education Center
Idaho Power has agreed to contribute money to the Foothills Environmental Education Facility for the installation of day lighting building features and other energy efficiency measures. Idaho Power agreed to contribute $5,000 toward this project. In addition, Idaho Power has provided approximately $10,000 worth of photovoltaic panels to be used at the site.

Total Cost: $5,000
Sector: Commercial

New Head Start Building
Idaho Power agreed to pay $2,698 for the installation of a high-efficient, SEER 13 air conditioner at the new Heat Start building in Garden City.

Total Cost: $2,698
Sector: Commercial

➲ ***Education Fund—Projects paid in 2003***

Integrated Design Workshop
Idaho Power sponsored with the Alliance an Integrated Design Workshop held in Boise on September 22, 2003. This workshop focused on strategies for high performance buildings and featured Tom Paladino and Mark Frankel. Idaho Power provided a $50 scholarship to any Idaho Power customer who wished to attend. There were 54 attendees.

Total Cost: $2,700
Sector: Commercial

➲ ***Education Fund—Projects obligated but not paid in 2003***

Pump System Assessment Workshop
Idaho Power sponsored with Alliance a Pump System Assessment Workshop held in Twin Falls on September 30, 2003. This workshop focused on improving the efficiency of pumping systems both on the farm and in industrial settings. Idaho Power provided a $70 scholarship to any Idaho Power customer who wished to attend. There were 30 attendees.

Total Cost: $2,240
Sector: Agricultural and Industrial

Scholarship for Energy Management Certification at Northwest Energy Education Institute
Idaho Power offered to provide two $500 scholarships to any Idaho Power customer seeking an Energy Management Certification from the Northwest Energy Education Institute, University of Oregon. The Energy Management Certification is an advanced certification program that requires the student to implement an energy saving project and measure the results. This offer was for the class session held in the summer of 2003. There was no one interested in this training.

B. Northwest Building Operator Training

DESCRIPTION
For the second year in a row, Idaho Power has teamed up with IED and the Northwest Building Operators Association (NWBOA) to provide energy efficiency training for building operators from public and private schools, universities, and colleges within Idaho Power's service territory. In 2002, Idaho Power sponsored Level I training for 26 Idaho school building operators.

The 2002 NWBOA Training was determined to be very successful based on the School Building Operator Training Survey Results prepared by McFain & Associates Research, Inc. in May 2003. The survey revealed several very positive responses.

- 100% of the participants reported that they were satisfied with the course.
- 83% of respondents indicated that they would likely attend additional training.
- 83% reported that their schools are now more energy efficient than they were one year ago.
- 66% reported their schools are more comfortable in terms of heating and cooling than they were one year ago.

Annual energy savings resulting from the 2002 training were conservatively estimated to be 750 MWh based on billing data and regional savings data reported by the Alliance. Estimated savings associated with the training show the effort to be cost effective. Members of the EEAG recommended that Idaho Power attempt to more accurately quantify the energy savings that results from the 2003 NWBOA Training.

RESULTS

In 2003 Idaho Power again sponsored the Level I training and based on the response from 2002 attendees, added a Level II training option. Building operators must hold a Level I certification, or take a challenge test, in order to enroll in the Level II certification course. The Level I Training covers energy conservation techniques, HVAC and Air Systems, introduces automatic controls fundamentals, and covers energy efficient lighting fundamentals. Level II training covers energy efficient operation of HVAC systems at an advanced level as well as energy management strategies and conservation methods.

Idaho Power paid training registration fees ($400 for Level I and $550 for Level II) as well as lodging and meals for Level I and Level II training using Rider funds. The total cost of the 2003 training is expected to be $50,250, with $11,768.66 paid in 2003 and the remaining balance of the 2003 training costs will be paid in 2004. The participating school districts were required to cover any other costs associated with attending the training.

Both levels of training were held at the Red Lion Hotel Downtowner in Boise. Level I training was conducted November 12,13,14 and 18, 19. Thirty students registered for the Level I training and twenty-eight actually attended the course. Level II training was held December 10, 11, 12 and 16, 17, 18. Due to the overwhelming interest for the Level II training, the course had to be split into two separate sessions. Twenty-seven building operators registered for Level II training, fifteen operators attended Level II training in December of 2003 and 12 attendees are scheduled to attend training in January of 2004.

In response to the EEAG recommendation that Idaho Power more accurately quantify the energy savings, each attendee at the 2003 Level I and II training was asked to fill out a questionnaire. Each attendee was provided a list of all their Idaho Power metered service points and asked to provide square footage estimates, energy fuels used, and months of operation for each associated building that they operate. As a result of this information, it is estimated the average attendee will save approximately 25 MWh annually for a total of 1,075 MWh annual savings for the 2003 attendees. Very few schools districts that were

represented at the training hold school year round. As a result, the summer peak reduction resulting from this training is expected to be low relative to the non-summer demand reduction that the training will provide.

In addition to the energy savings resulting in bill reductions, the school districts are expected to receive additional benefits from the training in the form of increased comfort in the heating and cooling months. Idaho Power expects that this training will continue to provide a high level of customer satisfaction among this customer segment while providing cost-effective energy savings.

ENERGY EFFICIENCY ADVISORY GROUP ACTIVITIES

In 2003 the Energy Efficiency Advisory Group (EEAG) met January 9, April 2, July 9, and October 22. In the meetings, Idaho Power provided a review of the Rider funding and expenses, provided updates on on-going programs and projects, requested recommendations on new program proposals and provided contextual information to the group on DSM issues.

Three new members were added to the group in 2003, these include: an IPUC staff member, an Idaho Power employee from Power Supply department and a regional technical efficiency expert. These new members were added in anticipation of the EEAG providing guidance in integrating DSM in the 2004 Idaho Power Integrated Resource Plan. Meeting minutes and other meeting materials are provided to all EEAG members, including IPUC staff, and are available upon request.

A. Energy Efficiency Advisory Group Recommendations

Following is a review of the direction provided to Idaho Power by EEAG for major program or research expenditures and general policy or operational issues. General recommendations or those not involving Rider expenditures are covered in the meeting minutes. (Note: January 9, 2003 meeting activities were reported in the January 30, 2003 Annual Demand-Side Management Report and will not be repeated here.)

IRRIGATION EFFICIENCY PROGRAM

Idaho Power presented a proposal for an Irrigation Efficiency Program to the EEAG during the April 2, 2003 meeting. Idaho Power received the following recommendations:

- The general consensus of the EEAG was that Idaho Power should implement the Irrigation Efficiency Program.
  Idaho Power kicked off this Program September 1, 2003
- EEAG members generally supported a higher budget in the first year of the Program.
  In the event that program funding is a limiting factor, Idaho Power will revisit the issue again with the EEAG.
- The EEAG recommended that Idaho Power proactively market this Program.
  Idaho Power has sent a tailored brochure to all irrigation customers and through it's Agriculture Field Representatives are proactively working with customers on this Program.
- The EEAG suggested an independent evaluation be completed on this Program after a couple of years of operation.
  Idaho Power, when developing it's overall evaluation plan, will determine an evaluation scheme for this Program.
- The EEAG was concerned that the Program was available to only agricultural irrigation systems not all irrigation systems.

Idaho Power is keeping this agricultural requirement because other types of systems (golf courses, cemetery, etc) are substantially different and may need to be dealt with in a different program.

- There was a comment not to limit customer size to those who have at least 5 Hp.
  Idaho Power modified the minimum size requirement in the Program. In order to participate a customer must save at least 200 kWhs.

AIRCARE PLUS PILOT PROGRAM

Idaho Power presented a proposal for the AirCare Plus Pilot Program to the EEAG during the April 2, 2003 meeting. This pilot was proposed and managed by the Alliance, with Idaho Power being a local utility sponsor. Idaho Power received the following recommendations:

- The general consensus of the EEAG was that Idaho Power should go forward with the Program.
  Idaho Power participated in the Program summer and fall of 2003.

TRADE IN, TRADE UP TO ENERGY STAR

In a May 10, 2003 email to each EEAG member, Idaho Power distributed information about an opportunity to participate with the Alliance in a room air conditioner rebate pilot. The email requested comments on whether the Company should participate in the pilot.

- A few EEAG members sent responses and they all encouraged Idaho Power to participate in the Program.
  Idaho Power proceeded with the Program.

INDUSTRIAL EFFICIENCY PROGRAM

On July 9, 2003, Idaho Power presented to the EEAG a proposal for the Industrial Efficiency Program and received the following recommendations:

- Allow both new and existing customers in the Program
  Idaho Power will allow both new and existing customers into the Program.
- Examine whether to spend more of the budget on education, and to make money available for audits and education.
  Idaho Power will explore education, audit and incentives available from other agencies, particularly IED's Industries of the Future and the Alliance
- Provide a sign-up bonus to customers that could accelerate their projects or provide a bonus to customers whose projects are designed to reduce summer peak
  Idaho Power does not feel there is an advantage to providing a "quick sign-up" bonus to customers. Given that the Program at this time is on a fast track to be implemented it would be difficult to provide the resources to administer this option. Additionally, it is not felt the customers would respond to the amount of money that would be available for a bonus. Alternatively, Idaho Power will explore ways to incent projects that demonstrate peak reduction
- A couple of suggestions were made to ensure that Idaho Power spread the money across both large and small customers.
  Idaho Power, through its marketing of the Program, will be sure that all eligible customers get information about their opportunity to participate in this Program.

- EEAG members provided mixed a recommendation on whether to not pay an incentive for savings under one year payback.
  Idaho Power feels that customers should be willing to fund projects under a one-year payback on their own. Lowering that criterion may increase free ridership. Idaho Power will keep the one-year payback criteria.
- Don't provide incentives required by Idaho code
  Idaho Power will explore the current requirements of the new commercial code and how our incentives will work around the code
- Recommend to go ahead with the Program
  Idaho Power implemented this Program in the fall of 2003.

NWBOA TRAINING SURVEY

On July 9, 2003, Idaho Power presented the results of a survey given to participants of last year's NWBOA training. During the discussion the EEAG provided the following recommendation:

- The EEAG recommended that Idaho Power consider repeating the NWBOA training in 2003.
  Idaho Power sponsored a second round of NWBOA training in 2003 that included both Level 1 and Level II training.
- The EEAG suggested Idaho Power expand the offering of training to include all schools: K-12, colleges and universities.
  Idaho Power offered this training to building operators of colleges and universities.

DISTRIBUTION EFFICIENCY INITIATIVE PROGRAM

On October 22, 2003, Idaho Power presented a proposal for both Phase I and Phase II of the Distribution Efficiency Initiative Program. The EEAG made the following recommendations:

- The EEAG expressed a general consensus for moving forward with Phase I.
  Idaho Power is working with the Alliance to complete Phase I.
- The EEAG requested an update of the project status after Phase I was complete before proceeding with Phase II.
  Although both phases are intertwined, Idaho Power will provide information as it becomes available as to the results of Phase I.

AC CYCLING PROGRAM

Presentations were made to this group in January, April, July and October 2003 regarding the Program. During the October meeting, Idaho Power made a proposal to include switches as well as thermostats in the program design of the second year of the Program. The EEAG had the following guidance:

- A preference to review 2003 findings before deciding on 2004 configuration was made.
  Because of the fast timeline needed for 2004 decisions, 2003 findings will not be complete before the need to make a decision.
- EEAG expressed a general consensus to move ahead with this Program.
  Idaho Power is proceeding with implementation of this Program.

ENERGY STAR HOMES NORTHWEST

The EEAG has received presentations regarding this Program in July and October 2003 and has provided the following recommendations to proceed with the "Fast Track" timetable of activities.

- It was suggested that the Community Action Partnership Association could help with this Program in the various jurisdictions.
  Idaho Power will explore this option.
- It was also suggested that Idaho Power look at the desirability of providing incentives for both a Seasonal Energy Efficiency Rating (SEER) of 12 and 13.
  As Idaho Power works with the regional partners on this Program this option will be evaluated.
- EEAG expressed a general consensus to move ahead with this Program.
  Idaho Power is proceeding with implementation of this option.

GENERAL POLICY ISSUES

- The EEAG indicated that they generally support a "soft goal" of sector equity, meaning that money coming in from a particular sector should mostly be spent on programs in that sector.
  Idaho Power has generally followed this recommendation in setting goals and budgets for new programs. Idaho Power provides information to the EEAG with this information.

LOOKING AHEAD

2004 will be another year of increasing DSM activity at Idaho Power. With existing programs and pilots planned, the company estimates MWh savings of 6,155 and summer peak reduction of at least 1.3 MW in 2004. Summer peak reduction continues to be a primary target. The company also anticipates that through DSM design and delivery that customer satisfaction will increase.

It is anticipated that this summer will be the second year of the AC Cycling Pilot and the first year of an Irrigation Peak Clipping Pilot Program. Both of these demand response pilots will produce a final report and recommendations at the end of the year. In addition, a major body of work in 2004 will be the evaluation of DSM options in the 2004 Integrated Resource Plan.

Idaho Power has established specific action items to accomplish in 2004. These, as outlined in the 2003-2005 DSM Plan, include:

- Complete Peak Demand Reduction study
- Estimate summer peak value for all programs
- Develop evaluation approach
- Explore the renewal of the Alliance
- Develop and document policies and procedures
- Continue to fill staffing needs
- Explore the calculation of environmental benefits of DSM on Idaho Power's system
- Effectively conduct quarterly EEAG meetings.

Idaho Power is committed to implementing cost-effective DSM programs as part of its resource portfolio to improve customer efficiency and satisfaction, to pursue stewardship of our natural resources, and to provide balanced value to all stakeholders. Through focused implementation practices, DSM will allow Idaho Power to capture indirect benefits such as improved system utilization and better relationships with our customers and regulators.

DATA TABLES

2003 DSM Program Activity

Programs	State	ID Rider	BPA C&RD	Number of Partici-pants	Costs: Utility Costs (dollars)	Costs: Total Resource Cost (dollars)	Savings: Annual Energy (kWh)	Savings: Average Demand* (kWa)	Savings: Summer Peak Demand** (kW)	Measure Life (years)	Nominal Levelized Costs: Utility ($/kWh)	Nominal Levelized Costs: Total Resource ($/kWh)	Notes
Residential Demand Response													
Air Conditioning Cycling Pilot	ID	X		204	275,645	269,680			159.1	10			(a)
Residential Efficiency													
CFL Lighting Coupon Program	ID	X		12,663	314,641	464,059	3,596,150	410.5		7	0.014	0.021	(b)
Energy Efficient Manufactured Home Incentives	ID/OR		X	73	37,319	79,399	27,434	26.0		45	0.011	0.023	
ENERGY STAR Homes Northwest	ID	X			13,597	13,597				30			(c)
Trade In, Trade Up to ENERGY STAR	ID	X		99	6,687	10,492	14,454	1.7	11.7	12	0.051	0.080	(d)
Manufactured Home Energy Checkups	ID/OR		X	420	183,653	183,653	602,723	68.8		20	0.025	0.025	
Oregon Residential Weatherization (Schedule 78)	OR									25			(e)
Low-Income													
Low-Income Weatherization Assistance (LIWA)	ID			208	228,134	483,369				25			(f)
Low-Income Weatherization Assistance (LIWA)	OR			29	22,255	42,335	102,643	11.72		25	0.016	0.031	
BPA Supplemental LIWA	ID/OR		X	57	49,895	106,915	223,591	25.52		25	0.017	0.036	
Commercial													
Air Care Plus Pilot	ID	X		4	5,764	9,061	33,976	3.9		10	0.021	0.033	(g)
Industrial													
Industrial Efficiency Program	ID	X			1,303	1,303				12			(c)
Irrigation													
Irrigation Efficiency Program	ID	X		2	11,190	24,710	36,792	4.2	18.4	15	0.029	0.065	
Education and Audits													
Oregon Commercial Audits (Schedule 82)	OR			21	4,000	4,000							(h)
School Building Operator Training	ID	X		43	48,853	48,853	1,075,000	122.7		5	0.010	0.010	(I)
Small Project/ Education Funds	ID	X		56	5,100	5,100							(j)
Total		9	3	13,879	1,208,036	1,746,527	5,912,763	675.0	189.2				

Notes:

(a) According to the 2003 Summit Blue Idaho Power A/C Cycling study, the average summer peak reduction was .78 kW/participant and an increase in energy consumption of .4 kWh per cycling event.

(b) Ecos Consulting Final Report on Idaho Power Energy Star Residential Lighting Program reported 4 bulbs per participant for a total of 50,650 bulbs. (71 kWh/yr savings per bulb)

(c) 2003 expenditures were for program start-up only. No incentives were paid in 2003.

(d) Portland Energy Conservation Inc. Final Report on the pilot assumes 990 cooling hours.

(e) This Oregon statutory program resulted in 4 jobs totaling $1056.92 that were completed in 2003 and will be paid in 2004.

(f) Energy savings is not estimated for the Idaho LIWA program. This program is fuel-blind and allows some health and safety measures.

(g) Idaho Power rebates covered approximately 1/2 the total cost to service 31 units. Participant savings is calculated as 1096 kWh/year per unit. ($2500 will be paid in 2004 for work done in 2003)

(h) Oregon statutory program. The company does not monitor which audit recommendations are implemented and does not estimate savings for this program.

(I) Northwest Energy Efficiency Alliance estimates energy savings at .5 kWh/Sq.Ft. of building operation per participant with a cap at 50,000 Sq.Ft.

(j) Includes training for 54 participants and 2 audits.

HISTORICAL DSM PROGRAM ACTIVITY
2001 - 2003

PROGRAMS	Year	Number of Partici-pants	Costs: Utility Costs (dollars)	Costs: Total Resource Cost (dollars)	Savings: Annual Energy (kWh)	Savings: Average Demand* (kWa)	Savings: Summer Peak Demand** (kW)	Measure Life (years)	Nominal Levelized Costs: Utility ($/kWh)	Nominal Levelized Costs: Total Resource ($/kWh)	End-notes
B. Residential Demand Response											
Air Conditioning Cycling Pilot	2003	204	275,645	269,680			159.1	10			(a)
	Total	**204**	**275,645**	**269,680**			**159.1**	**10**			
Residential Efficiency											
CFL Lighting Coupon Program	2002	11,619	243,054	310,643	3,299,654	376.7		7	0.012	0.015	
	2003	12,663	314,641	464,059	3,596,150	410.5		7	0.014	0.021	
	Total	**24,281**	**557,695**	**774,702**	**6,895,804**	**787.2**		**7**	**0.013**	**0.018**	(b)
Energy Efficiency Packets	2001	7,608	87,175	87,175	405,125	46.2		7	0.035	0.035	
	2002	2,925	4,910	4,910	155,757	17.8		7	0.005	0.005	
	Total	**10,533**	**92,085**	**92,085**	**560,882**	**64.0**		**7**	**0.027**	**0.027**	
Energy Efficient Manufactured Home Incentives	2003	73	37,319	79,399	227,434	26.0		45	0.011	0.023	
	Total	**73**	**37,319**	**79,399**	**227,434**	**26.0**		**45**	**0.011**	**0.023**	
ENERGY STAR Homes Northwest	2003		13,597	13,597				30			
	Total		**13,597**	**13,597**				**30**			(c)
Trade In, Trade Up to ENERGY STAR	2003	99	6,687	10,492	14,454	1.7	11.7	12	0.051	0.080	
	Total	**99**	**6,687**	**10,492**	**14,454**	**1.7**	**11.7**	**12**	**0.051**	**0.080**	(d)
Manufactured Home Energy Checkups	2002	17	26,135	26,135	25,989	3.0		20	0.084	0.084	
	2003	420	183,653	183,653	602,723	68.8		20	0.025	0.025	
	Total	**437**	**209,788**	**209,788**	**628,712**	**71.8**		**20**	**0.028**	**0.028**	
Oregon Residential Weatherization (Schedule 78)	2001	27	7,517	6,709	7,073			25	0.081	0.072	
	2002	24	2,116	23,971	4,580			25	0.035	0.398	
	2003							25			(e)
	Total	**51**	**9,633**	**30,680**	**11,653**			**25**	**0.063**	**0.200**	

*Average Demand = Annual Energy / 8760 Annual Hours

**Summer Peak Demand is reported for programs that target summer peak reduction.

➲ *Historical DSM Program Activity*

2001 - 2003

PROGRAMS	Year	Number of Partici-pants	Costs: Utility Costs (dollars)	Costs: Total Resource Cost (dollars)	Savings: Annual Energy (kWh)	Savings: Average Demand* (kWa)	Savings: Summer Peak Demand** (kW)	Measure Life (years)	Nominal Levelized Costs: Utility ($/kWh)	Nominal Levelized Costs: Total Resource ($/kWh)	End-notes
Low-Income											
Low-Income Weatherization Assistance – Idaho	2001	266	331,126	692,048				25			
	2002	197	231,352	492,139				25			
	2003	208	228,134	483,369				25			
	Total	**671**	**790,612**	**1,667,557**				**25**			(f)
Low-Income Weatherization Assistance – Oregon	2001	21	23,678	44,179	[illegible]	6.90		25	0.030	0.056	
	2002	31	24,773	47,221	[illegible]	7.80		25	0.028	0.053	
	2003	29	22,255	42,335	[illegible]	11.72		25	0.016	0.031	
	Total	**81**	**70,706**	**133,735**	[illegible]	**26.4**		**25**	**0.023**	**0.044**	
BPA Supplemental LIWA	2002	75	55,966	118,255	[illegible]	35.54		25	0.014	0.029	
	2003	57	49,895	106,915	[illegible]	25.52		25	0.017	0.036	
	Total	**132**	**105,861**	**225,170**	[illegible]	**61.1**		**25**	**0.015**	**0.032**	
Commercial											
Air Care Plus Pilot	2003	4	5,764	9,061	[illegible]	3.9		10	0.021	0.033	
	Total	**4**	**5,764**	**9,061**	[illegible]	**3.9**		**10**	**0.021**	**0.033**	(g)
Industrial											
Industrial Efficiency Program	2003		1,303	1,303				12			
	Total		**1,303**	**1,303**				**12**			(c)
Irrigation											
Irrigation Efficiency Program	2003	2	11,190	24,710	[illegible]	4.2	18.4	15	0.029	0.065	
	Total	**2**	**11,190**	**24,710**	[illegible]	**4.2**	**18.4**	**15**	**0.029**	**0.065**	
Education and Audits											
Oregon Commercial Audits (Schedule 82)	2001										(h)
	2002	24	5,200	5,200							
	2003	21	4,000	4,000							
	Total	**45**	**9,200**	**9,200**							(i)

*Average Demand = Annual Energy / 8760 Annual Hours

**Summer Peak Demand is reported for programs that target summer peak. reduction.

➲ *Historical DSM Program Activity*

2001 - 2003

PROGRAMS	Year	Number of Partici-pants	Costs: Utility Costs (dollars)	Costs: Total Resource Cost (dollars)	Savings: Annual Energy (kWh)	Savings: Average Demand* (kWa)	Savings: Summer Peak Demand** (kW)	Measure Life (years)	Nominal Levelized Costs: Utility ($/kWh	Nominal Levelized Costs: Total Resource ($/kWh)	End-notes
School Building Operator Training	2002	28	36,084	36,084	750,000	85.6		5	0.010	0.010	
	2003	43	48,853	48,853	1,075,000	122.7		5	0.010	0.010	(j)
	Total	**71**	**84,937**	**84,937**	**1,825,000**	**208.3**		**5**	**0.010**	**0.010**	
Small Project / Education Funds	2003	56	5,100	5,100							(k)
	Total	**56**	**5,100**	**5,100**							
Total	**2001**	**8,072**	**561,428**	**1,066,621**	**1,095,304**	**124.2**					
Total	**2002**	**14,940**	**629,590**	**1,064,558**	**4,615,650**	**526.4**					
Total	**2003**	**13,879**	**1,208,036**	**1,746,527**	**5,912,763**	**675.0**	**189.2**				
GRAND TOTAL		**36,723**	**2,287,122**	**3,641,196**	**11,001,023**	**1,254.5**	**189.2**				

Endnotes:

(a) According to the 2003 Summit Blue Idaho Power A/C Cycling study, the average summer peak reduction was .78 kW/participant and an increase in energy consumption of .4 kWh per cycling event.

(b) Ecos Consulting Final Report on Idaho Power Energy Star Residential Lighting Program reported 4 bulbs per participant (71 kWh/yr savings per bulb).

(c) 2003 expenditures were for program start-up only. No incentives were paid in 2003.

(d) Portland Energy Conservation Inc. Final Report on the pilot assumes 990 cooling hours.

(e) In 2003 this Oregon statutory program resulted in 4 jobs totaling $1056.92 completed in 2003 that will be paid in 2004.

(f) Energy savings is not estimated for the Idaho program. This program is fuel-blind and allows some health and safety measures.

(g) Idaho Power rebates covered approximately 1/2 the total cost to service 31 units. Participant savings is calculated as 1096 kWh/year per unit ($2500 will be paid in 2004 for work done in 2003).

(h) Eight audits totaling $3200 were performed in 2001 and paid in 2002.

(i) Oregon statutory program. The company does not monitor which audit recommendations are implemented and does not estimate savings for this program.

(j) Northwest Energy Efficiency Alliance estimates energy savings at .5 kWh/Sq.Ft. of building operation per participant with a cap at 50,000 Sq.Ft.

(k) 2003 includes training for 54 participants and 2 audits.

*Average Demand = Annual Energy / 8760 Annual Hours

**Summer Peak Demand is reported for programs that target summer peak reduction.

Financial Factors for Demand-Side Management

Initial Data									
	Weight	Cost		Weighted Cost				Timing	Adjust-ment
Capital		Pre-tax	Post-tax	Pre-tax	Post-tax	Discounting	Rate	Factor	Factor
Debt	51.060%	5.973%	3.638%	3.050%	1.857%	Nominal	7.200%	0.5	1.03538
Preferred	2.969%	6.539%	6.539%	0.194%	0.194%	Escalation	2.520%	1.0	1.02520
Common	45.971%	11.200%	11.200%	5.149%	5.149%	Real	4.565%		1.00993
	100.000%			8.393%	7.200%	Revenue Requirement	7.200%	0.5	
Tax Factors						Deferred tax rate		35%	
	Composite income tax rate			39.10%		Tax life (yrs)		1	
	Property tax %			0.00%		Declining balance rate (DBR)		100%	
	Deferred tax switch (true/false)			TRUE		Tax timing (months in 1st yr)		12	
					Inputs in white				

A	B	C	D	E	F	G
Number of Years	Present Value Factor (PVF) Present Value of $1 per Year		Capital Recovery Factor (CRF) Amount per Year with Present Value of $1		Conversion Factor Nominal to Real	Nominal to 30-yr Nominal
	Nominal	Real	Nominal	Real		
(n)			*(1 ÷ B)*	*(1 ÷ C)*	*(E ÷ D)*	*(F ÷ F(30))*
1	0.96583	0.96583	1.035375	1.035375	1.000000	1.296288
2	1.86680	1.88950	.535677	.529241	.987984	1.280711
3	2.70724	2.77284	.369380	.360641	.976343	1.265621
4	3.49124	3.61761	.286431	.276425	.965067	1.251005
5	4.22258	4.42551	.236822	.225963	.954146	1.236848
6	4.90480	5.19813	.203882	.192377	.943570	1.223139
7	5.54120	5.93702	.180466	.168435	.933330	1.209864
8	6.13485	6.64365	.163003	.150520	.923416	1.197012
9	6.68863	7.31943	.149508	.136623	.913818	1.184571
10	7.20521	7.96570	.138788	.125538	.904529	1.172530
11	7.68710	8.58376	.130088	.116499	.895539	1.160876
12	8.13662	9.17484	.122901	.108994	.886840	1.149600
13	8.55594	9.74011	.116878	.102668	.878424	1.138690
14	8.94711	10.28070	.111768	.097270	.870282	1.128135
15	9.31200	10.79769	.107388	.092612	.862406	1.117926
16	9.65238	11.29211	.103601	.088557	.854790	1.108053
17	9.96990	11.76495	.100302	.084998	.847424	1.098505
18	10.26609	12.21714	.097408	.081852	.840303	1.089274
19	10.54239	12.64958	.094855	.079054	.833418	1.080349
20	10.80013	13.06315	.092591	.076551	.826763	1.071723
22	11.26484	13.83691	.088772	.072270	.814116	1.055328
24	11.66922	14.54458	.085696	.068754	.802308	1.040021
25	11.85128	14.87541	.084379	.067225	.796703	1.032756
26	12.02111	15.19180	.083187	.065825	.791289	1.025738
28	12.32731	15.78375	.081121	.063356	.781013	1.012417
30	12.59376	16.32513	.079404	.061255	.771434	1.000000
32	12.82562	16.82028	.077969	.059452	.762509	0.988431
35	13.11821	17.48484	.076230	.057192	.750262	0.972555
38	13.35572	18.06611	.074874	.055352	.739269	0.958306
40	13.48866	18.41256	.074136	.054311	.732579	0.949634
42	13.60434	18.72941	.073506	.053392	.726363	0.941575
45	13.75033	19.15468	.072726	.052207	.717857	0.930549
48	13.86883	19.52665	.072104	.051212	.710251	0.920690
50	13.93516	19.74835	.071761	.050637	.705637	0.914708

Present Value Factor (PVF) for *n* years = Adjustment Factor × (1 - ((1 + Rate) ^ -n)) ÷ Rate
Real Discount Rate = ((1 + Nominal Rate) ÷ (1 + Escalation Rate)) - 1
Nominal Adjustment Factor = (1 + Nominal Rate) ^ Nominal Timing Factor
Escalation Adjustment Factor = (1 + Escalation Rate) ^ Escalation Timing Factor
Real Adjustment Factor = Nominal Adjustment Factor ÷ Escalation Adjustment Factor
For timing factors, use 0 for end of period (ordinary annuity), 1 for beginning of period (annuity due), and 0.5 for midpoint.