

**Wisconsin
Public Benefits Programs**

**Focus on Energy
and
Home Energy Assistance**

**Annual Report
Fiscal Year 2003**

**Department of Administration
Division of Energy**

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Public Benefits Program Summary

Pursuant to Section 16.957 (2)(d) 4, the Wisconsin Department of Administration (DOA) submits to the Wisconsin Legislature the annual report of Wisconsin's Public Benefits Fund programs for Fiscal year 2002-2003.

Wisconsin's public benefits programs are administered by the DOA Division of Energy and encompass two distinct delivery areas:

The *Focus on Energy* program provides energy efficiency information, technical assistance and other services to residents, businesses and local governments.

The *Home Energy Assistance* program provides weatherization and bill payment assistance to resident households with incomes at or below 150% of the federal poverty level.

A brief description of these programs is included in this report. Additional information is available from the Division of Energy and on the following websites:

www.focusonenergy.com
www.homeenergyplus.wi.gov

Wisconsin's Public Benefits Fund

The segregated Public Benefits Fund, which supports the Focus on Energy and Home Energy Assistance programs, is funded by electric and natural gas utility ratepayers. Wisconsin's investor-owned utilities are required by law to participate. Municipal electric utilities and electric cooperatives have the ability to participate in the state program or operate their own "commitment to community" programs.

Revenue for the Public Benefits Fund primarily comes from five sources: (1) funds that investor-owned utilities collect through PSC established rates to pay for public benefits programs; (2) a fee added to electric bills starting in October 2000 that participating utilities collect and remit to the state; (3) funds contributed by participating municipal electric utilities and electric cooperatives; (4) federal funds provided for low-income energy assistance and weatherization programs and (5) voluntary contributions. Interest earned on the segregated state funds is retained by the Public Benefits Fund. The amount of federal revenues received by the state for limited-income programs is part of the formula used to set the fee.

Investor-owned utilities, participating municipals and participating cooperatives serve about 84 percent of the state's electricity customers.

In FY03, the Public Benefits fund received \$97,654,724 in ratepayer funds collected by the participating utilities, voluntary contributions and interest earned. \$54,650,402 was collected for the energy efficiency program and \$43,004,332 was collected for the home energy assistance programs. Expenditures totaled \$92,039,642. The energy efficiency program spent \$53,078,245 and the low-income programs spent \$38,961,397. From the energy efficiency, \$8,365,600 was lapsed to the general fund for budget stabilization. The unexpended balance of \$21,235,900 is in part contractually obligated to continuing program activity. When adjusted to reflect these contractual obligations, the unobligated fund balance is \$5,862,386.

**Focus on Energy Report Statement
July 1, 2002 - June 30, 2003**

FY03

Revenues

LIMITED-INCOME	
New Fees (Public Utilities)	\$ 29,239,318.23
Fees - Participating Municipal Electric Utilities & Electric Cooperatives	\$ 809,039.21
Transition Funds [DOA & PSC]	\$ 12,953,699.72
Voluntary Contributions	\$ 2,274.92
Total Earnings on Investment Pool	\$ -
Total Limited-Income	\$ 43,004,332.08
ENERGY EFFICIENCY	
New Fees (Public Utilities)	\$ 16,752,843.89
Fees - Participating Municipal Electric Utilities & Cooperatives	\$ 168,924.91
Transition Funds [DOA & PSC]	\$ 37,403,326.96
Voluntary Contributions	\$ 2,274.92
Total Earnings on Investment Pool	\$ 323,031.62
Total Energy Efficiency	\$ 54,650,402.30
FY03 Lapse to to the General Fund	\$ (8,365,600.00)
Total Energy Efficiency less lapsed funds	\$ 46,284,802.30
Total Revenues	\$ 97,654,734.38
FY03 Lapse to to the General Fund	\$ (8,365,600.00)
Total Revenues Less Lapsed Funds	\$ 89,289,134.38

Expenses

LIMITED-INCOME PROGRAMS	
Weatherization Aids	\$ 24,657,150.18
WHEAP County Operations	\$ 878,918.82
WHEAP Direct Benefits	\$ 11,070,489.57
WHEAP Crisis Programs	\$ 2,130,338.42
General Program Operations	\$ 224,500.00
Total Limited-Income	\$ 38,961,396.99
ENERGY EFFICIENCY PROGRAMS	
Business Programs	\$ 21,035,077.36
Renewable	\$ 2,513,949.77
Energy	\$ 402,874.39
Environmental Research	\$ 22,077,382.65
Residential Programs	\$ 7,048,960.75
General Program Operations	\$ 7,048,960.75
Total Energy Efficiency	\$ 53,078,244.92
Total Expenditures	\$ 92,039,641.91

Fund Balance

LIMITED-INCOME	
Revenues	43,004,332.08
Expenditures	38,961,396.99
Total Limited-Income	4,042,935.09
ENERGY EFFICIENCY	
Revenues	54,650,402.30
Expenditures	53,078,244.92
Total Energy Efficiency	1,572,157.38
TOTAL	
Beginning Fund Balance	\$ 23,986,407.64
FY03 Revenues	\$ 97,654,734.38
FY03 Lapse to to the General Fund	\$ (8,365,600.00)
Total Revenues Less Lapsed Funds	\$ 113,275,542.02
Expenditures	\$ 92,039,641.91
Total Fund Balance	\$ 21,235,900.11
Energy Efficiency Contractual Obligations	\$ 15,373,514.20
Remaining Fund Balance	\$ 5,862,385.91

Fiscal Year 2003 Highlights

Focus on Energy

Evaluation results for FY2003 report that the Focus on Energy program:

- Improves energy efficiency and reliability in Wisconsin.
- Expands the ability of markets to deliver energy efficiency goods and services.
- Delivers quantified financial returns on investments in energy improvements.
- Reduces the environmental impact of energy use.
- Enhances economic development and makes Wisconsin firms more competitive.

Total lifetime energy savings achieved during the year reached \$159.5 million for a cost benefit ratio of 1:3.16.

Electric energy savings achieved by the Focus on Energy program reached 214.8 million kWh, with an annual value of \$14.7 million, and lifetime savings of \$93.4 million.

Electric demand was reduced by 36.5 megawatts, about 10 percent of the growth in demand during the year.

Savings measured in avoided MW capacity have a lifetime value of \$30.2 million.

Savings from natural gas efficiency efforts reached 7.2 million therms, with an annual value of \$6.2 million and lifetime savings of \$35.8 million.

Total energy savings in FY 2003, the second full year of the program, increased fourfold over the prior year.

Reductions in environmental pollutants were significant: avoiding 1.8 million pounds of nitrogen oxides, 2.9 million pounds of sulfur oxides, 750 million pounds of carbon dioxide and ten pounds of mercury.

Economic benefits include the creation of 630 full-time equivalent job years, a figure that will total nearly 19,000 job years at the end of the ten years.

Wisconsin businesses saved over \$11.1 million and increased sales by \$87.1 million.

Wisconsin residents saved over \$13.2 million and increased their personal income by \$20.8 million.

For every dollar invested in Focus on Energy, the program returned over \$3.00 in direct energy savings. Environmental and economic benefits added another \$2.70

Energy Savings FY 2003

Program Area	First-year Value of Energy Savings (kWh and therms)	Gross Verified kWh Savings	Gross Verified Therm Savings	MW Demand Savings
BUSINESS PROGRAMS	\$10,132,029	108,394,183	5,058,035	18.986
RESIDENTIAL PROGRAMS	\$10,535,371	102,660,901	2,155,316	16.916
Renewable Energy Programs	\$239,353	3,710,892	N/A	.603
Total	\$20,906,753	214,765,976	7,213,351	36.505

Energy savings result when customers install new energy efficient equipment, replace old equipment with energy efficient units, or reduce energy usage through their actions. In addition, energy can be considered saved when customers employ renewable energy technologies on their own property. In this report, energy savings are “verified gross savings” measured by an independent evaluation contractor, PA Consulting. Annual energy savings are realized each year that the energy conservation measure remains in place, which typically ranges from seven to 20 years.

Home Energy Assistance

Energy assistance was provided to 131,676 households in the 2002-03 heating season, an increase of 12 percent over the prior year.

Weatherization services were provided to 6,726 low-income households, an increase of 37 percent over the prior year.

Focus on Energy Program Summaries

The Wisconsin Focus on Energy program is an innovative public-private partnership that delivers energy efficiency information, solutions and services to the residents and businesses of Wisconsin. The program is delivered primarily by the private sector. The overall goal of the program is to assist the marketplace provision of energy efficient goods, services and practices that become market-based solutions to Wisconsin's energy needs.

The Focus on Energy program concentrates its efforts among four diverse delivery categories – business, residential, renewable energy, and environmental research programs. These programs are administered through contracts with nonprofit, non-stock, public-private organizations that are industry leaders and experts in their fields. All Focus on Energy program administrators were selected through an open, competitive bidding process.

Business Programs

Administered by the Milwaukee School of Engineering (MSOE), Business Programs work to expand energy efficiency initiatives and opportunities in the commercial, industrial, institutional, and agricultural sectors. The programs provide an array of energy efficiency services to help organizations achieve energy savings that exceed the program cost. Programs are designed to include specific energy savings targets and to build a foundation for long-term sustainable energy efficient markets in Wisconsin.

Residential Programs

The Wisconsin Energy Conservation Corporation (WECC) administers the Residential Program. Residential programs include: ENERGY STAR products; Wisconsin ENERGY STAR Homes; Residential Education and Information; Home Performance with ENERGY STAR; Targeted Home Performance with ENERGY STAR; and Apartment and Condo Energy Services.

Renewable Energy

The Wisconsin Renewable Energy Network (WREN), a coalition of renewable energy interests, administers the Renewable Energy Program under contract to WECC. The Renewable Energy Program strives to make renewable energy a mainstream energy option in Wisconsin by providing education, information, training, facilitation, research and financial incentives to residents, businesses and local governments. Funding is set by statute at 4.5 percent of annual Public Benefits energy efficiency revenue.

Environmental Research

This program, administered by the Energy Center of Wisconsin (ECW), explores how electrical energy use impacts Wisconsin's natural environment. Funding for this program supports research projects that study the environmental effects of electrical generation and transmission. Funding is set by statute at 1.75 percent of annual Public Benefits energy efficiency revenue.

Home Energy Assistance Program Summary

Home Energy Assistance programs (weatherization, emergency furnace repair or replacement and bill payment assistance) are based on long-standing federally-funded services to limited-income households.

Wisconsin administers these programs through existing county, tribal and nonprofit human services offices. These programs receive significant financial contributions from the federal government through the Low Income Home Energy Assistance Program (LIHEAP) block grant and the Low Income Weatherization Assistance Program (LIWAP).

Public Benefits funds have made it possible to increase the number of limited-income households that receive weatherization, conservation, emergency, heating cost, and electricity services. By integrating these funds with LIHEAP and LIWAP, Wisconsin has developed a comprehensive assistance program to serve limited-income households—one that deals with whole home energy needs.

In FY2003, 131,676 Wisconsin households received heating bill payment assistance from federal funds. Of those 119,686 households received electric bill payment assistance from the Public Benefits fund and 6,726 households received weatherization services.

All Wisconsin residents with income at or below 150 percent of the federal poverty level (\$27,600 per year for a family of four) are eligible for benefits and services under the federally funded portion of the programs. In addition, low-income residents served by the 12 investor-owned utilities, 26 participating municipal utilities and nine participating electric cooperatives receive services under the expanded effort.

Non-participating utilities and cooperatives provide services through their “commitment to community” programs. These utilities serve about 16 percent of the state population. Their results are not included in this report.

As a service to non-participating utilities, the department provides on-line benefit calculations for their customers who are receiving federal benefits. Access to these customer reports saves the municipal and cooperative utilities the cost of maintaining a separate intake process and allows for equitable benefit levels across the state. No charge is made for this service.

Quality Control, Evaluation and Customer Communications

Focus on Energy programs must demonstrate a commitment to a strong return on the ratepayers’ investment. The Division of Energy has implemented independent compliance and evaluation programs to ensure that all applicable state laws, accounting practices, and

program guidelines are strictly followed. Through these evaluation processes, the DOA can monitor the success of programs by reconciling all reported program impacts and expenditure data. DOA is committed to delivering efficient, cost effective, quality, and successful public benefits programs.

Virchow Krause & Co. provides an independent fiscal audit of each contracted program administrator.

PA Government Services leads a team of evaluation experts to quantify the impacts of the energy efficiency and energy assistance programs. The evaluators are charged with independently verifying the program administrators reported impacts. This includes energy savings, environmental and economic impacts. This report relies heavily on PA Government Services reports. All current detailed evaluation reports are available on-line at:

www.doa.state.wi.us

Click on the left for “Reference Center” and then on “Focus on Energy Evaluation Reports.”

Marketing and customer communications services, including the Focus on Energy web site, are provided by **Hoffman York**. The website is at:

www.focusonenergy.com

Focus On Energy Vision, Mission, Guidelines and Participation

Vision

The people of Wisconsin will make sound energy efficiency and renewable energy investments that result in sustained economic growth and a healthy environment for current and future generations.

Mission

Focus on Energy develops and operates a broad range of sustainable energy efficiency and renewable energy programs. In partnership with consumers, utilities, businesses, nonprofit organizations and government at all levels, this portfolio of programs:

- Enhances economic development and makes Wisconsin firms more competitive.
- Expands the ability of markets to deliver energy efficient and renewable goods and services to consumers and businesses.
- Reduces the amount of energy used per unit of production in Wisconsin while improving energy reliability.
- Delivers quantified financial returns on public investments in energy improvements.
- Reduces the environmental impact of energy use.

Program Guidelines

To accomplish the program vision and mission, Focus on Energy strives to:

- Help create the infrastructure and knowledge base necessary to enable competitive, profit-oriented firms to deliver increased levels of energy efficiency and renewable energy.
- Recognize the inseparable link between energy, the environment, and the economy.
- Initiate energy efficiency and renewable energy policies that make significant contributions to the reliability of Wisconsin's energy supply.
- Benefit the development of Wisconsin's rural economy, especially in the area of renewable energy.

The Focus on Energy program attempts to identify and communicate the full, long-term value of energy efficiency and renewable energy to manufacturers, retailers and consumers. The program encourages an appropriate response and expects that market

actors eventually will make their own judgement about participating in a developing market for energy efficiency products and services.

Utility Participation

Wisconsin's 12 investor-owned utilities are required by law to participate in the Focus on Energy program. Municipal electric utilities and electric cooperatives were given the choice of opting in to the program or initiating local "commitment to community" programs. In FY03 all 12 Wisconsin investor-owned, 25 municipal electric utilities and nine electric cooperatives participated in the program. These utilities serve about 84 percent of the state's electricity customers.

Focus on Energy Business Programs

Program Administration

The Milwaukee School of Engineering (MSOE) administers Focus on Energy Business Programs. In FY2003, these programs included:

- Industries of the Future
- General Industrial
- Existing Buildings
- New Construction
- Government Buildings and Operations
- Water and Wastewater
- Schools
- Small Business
- Energy Efficiency Goods and Services
- Production Agriculture
- Rural Communities and
- Renewable Energy.

The MSOE is a private, nonprofit, Wisconsin-based educational institution. The school provides undergraduate and graduate degrees in engineering, business and health-related disciplines. It has more than 400 faculty and staff, and 75 extensive laboratories, research facilities, and research libraries.

MSOE has assembled an administrative team representing a diverse set of professional service organizations chosen for their experience and expertise on a wide array of energy topics. In FY03, these included Aspen Systems, GDS Associates, Energy Center of Wisconsin, Franklin Energy Services, Johnson Controls, Inc., L.K. Goldfarb Associates., Science Applications International Corp., CESA #10, and Nexant.

At the start of FY2004, the number of individual program offerings and the number of contracted firms were reduced in order to streamline delivery. This report follows the FY2003 structure.

Program Summary

The Business Programs help businesses and industries find ways to improve energy efficiency in their facilities and operations. The program also works with providers of energy services to help them make their services economically viable to businesses. The program's aim is to help the marketplace work more effectively.

Business Programs work with commercial and industrial businesses, local governments, schools and agricultural consumers of energy, as well as architects, engineers, contractors,

distributors and others who provide energy efficiency services. The programs provide an array of energy efficiency services to help organizations achieve energy savings that exceed the program cost. Programs are designed to include specific energy savings targets and to build a foundation for long-term sustainable energy efficient markets in Wisconsin. Cost effectiveness is also a basic program criterion.

Table 1 - Business Programs Energy Savings

The following table shows the adjusted Business Programs verified gross energy savings developed by applying adjustment factors to the program-reported totals.

Program	Sector	kWh	kW	Therms
		Evaluation Verified Gross	Evaluation Verified Gross	Verified Gross
Production Agriculture	Agriculture	5,861,313	1,429	47,926
Existing Buildings	Commercial	10,054,177	1,694	501,951
Government Buildings	Commercial	4,824,158	1,063	91,576
New Buildings	Commercial	395,131	156	173,389
Schools	Commercial	6,429,981	1,018	1,068,997
Small Retail and Services	Commercial	18,436,857	4,972	205,727
General Industrial	Industrial	40,034,032	5,667	1,376,264
Industries of the Future	Industrial	12,396,037	1,294	964,061
Water and Waste- water	Industrial	5,099,699	673	2,418
Renewable	Renewable	0	0	478,992
Pilot C&I	Industrial	2,185,752	317	32,318
Other	Unassigned	2,877,046	704	46,386
Total	All	108,394,183	18,986	5,058,035

Industries of the Future

The Industries of the Future program helps create public-private partnerships with industry leaders to research, develop and adopt advanced technologies that improve overall industry competitiveness.

The Wisconsin Industries of the Future program builds on a federal program of the same name. The intent of the program is to assist in the design and implementation of a truly industry-led program to identify industry needs and develop industry-based action plans to satisfy those needs and ultimately transform the market. Wisconsin adds services and financial incentives focused on Wisconsin-based industry needs.

The program has targeted the following eight industry sectors:

- Forest Products
- Metalcasting
- Food Processing
- Agricultural Biotechnology
- Printing
- Plastics and Chemicals
- Glass
- Water and Wastewater Systems

These industries play an important role in Wisconsin's energy use and economy – they not only use large amounts of energy, they also face intense competition and are among the state's largest employers. Wisconsin's economic vitality relies heavily on the strength of these industries.

Examples of the types of assistance available to industry groups include:

- Project design and technical assistance to identify process improvement opportunities
- Assistance with state and federal grant applications
- Research, development and demonstration projects
- Financial assistance

Program Goal

The goals of the Industries of the Future program are: 1) to accelerate the research, development and adoption of emerging energy efficiency, renewable energy and pollution prevention technologies that improve the competitiveness of Wisconsin industry; and 2) foster partnerships among industry, trade groups, government, supporting laboratories, universities, and non-governmental organizations.

General Industrial Program

Wisconsin has a large industrial base comprised of over 10,000 manufacturing companies of all sizes. These companies consumed about 35 percent of the electricity used in the state in 2002 and represent a great opportunity to save significant amounts of energy.

The General Industrial Program is designed to build an industry-led program that strengthens industrial energy management practices, develops alliances between the industries and service providers, reduces energy use, and improves environmental performance. Focus on Energy staff work with existing service and supply chains to provide specific services and financial mechanisms to encourage the adoption of energy efficient technologies and practices into the standard operation and management of the participating industries

Program Goal

The goal of the program is to establish a Wisconsin-based industrial program that permanently transforms industrial energy practices, improves industrial energy efficiency, and prevents pollution.

Case Study: Linatex Wausau facility

This independent architectural finishing firm took advantage of the Focus on Energy industrial program to analyze the costs and benefits of an incinerator project. The company looked to the program for an independent review of an engineering study. Relatively simple changes will result in a project that will save 480,500 kWh a year and reduce natural gas use by 106,080 therms.

Existing Buildings Program

The Existing Buildings program promotes energy efficiency in larger commercial businesses. Typically, these businesses employ 50 or more people and occupy 30,000 square feet or more. They include offices, retail businesses, restaurants, hospitals, and other non-industrial businesses. Trade allies provide technical assistance, including preliminary and detailed energy analyses, project implementation assistance, and facility benchmarking (comparisons with similar facilities).

Program Goal

The goal of this program is to establish an infrastructure that can improve and sustain energy efficient practices, and realize the energy and non-energy benefits of improved energy efficiency in existing commercial buildings.

Case Study: Bellin Hospital

Bellin Hospital was originally constructed in the 1920s. Focus on Energy completed a study of the facility, including previous energy saving measures. The study reported that additional measures in the water heating and ventilation system would provide \$21,000 in annual energy cost savings.

New Construction Program

New commercial buildings--schools, retail office space, restaurants, warehouses, health care buildings, and others--represent one of the largest sources of energy use growth in Wisconsin, outpacing the per capita growth of residential and industrial energy use over the last three decades.

In new construction and in major renovations, there is an opportunity to affect the way buildings function and perform as a whole, not just one system at a time. A building is an integrated, complex system; all of the component systems (envelope, lighting, HVAC, controls, etc.) are linked. By using a “whole building” design approach it is possible to create a high performance building that is comfortable, energy efficient and economical to operate.

Schlitz Audubon Center

Focus on Energy assisted the center’s staff during the design of the project. The center received a \$100,000 grant to incorporate energy efficient measures into the building design. These initiatives are projected to produce 18 percent electric use savings and 78 percent fuel savings. Annual operating costs will be \$10,600 lower as a result.

Program Goal

High performance buildings lower energy use, reduce negative environmental impacts, improve productivity, and cost less to operate and maintain. The goal is for high performance buildings to become the mainstream practice for the design, construction and operation of commercial buildings in Wisconsin.

Government Buildings and Operations Program

The Government Buildings and Operations program targets the estimated 6,000 municipal government buildings and related operations (including municipal services) in Wisconsin. The program also targets energy intensive government operations, such as public works, street and traffic lighting, and emergency services (back-up power). The program seeks to increase integration of energy efficiency into decision-making criteria as it pertains to government buildings and operations.

Program Goal

The goal is to establish an infrastructure that can improve and sustain energy efficient practices in government buildings and operations throughout Wisconsin, and help the sector realize the energy and non-energy benefits from improved energy efficiency.

Water and Wastewater Program

The Water and Wastewater Program is designed to help water and wastewater treatment facilities in Wisconsin improve the equipment and operational practices of their systems.

Many of the approximately 1,800 individual water and wastewater systems in Wisconsin are in the government sector. This allows for direct delivery of support programs to this market. The program helps to design and select energy efficient equipment, as well as to develop various energy options to improve the overall efficiency of water and wastewater treatment systems. The use of existing programs and organizations in water and wastewater treatment is expected to bring leveraged and high-benefit services across the state of Wisconsin.

Program Goal

The goal is to establish Wisconsin-based initiatives that permanently change water and wastewater energy practices and improve system energy efficiencies.

Case Study: Northern Moraine Utility Commission

The Northern Moraine Utility Commission serves Greenbush, Elkhart Lake, Crystal Lake and Glenbeulah. Built in 1976, the facility was designed for a peak flow of 600,000 gallons a day, but was only averaging half that amount. Focus on Energy representatives recommended changes to the aeration system that was using two 100-horsepower blowers. Changing the blowers to lower capacity units produced a 65 percent savings in the electricity needed to power them.

Schools Program

The Schools program builds upon the success of the WEI-2 program (Wisconsin Energy Initiative-2) that delivered energy and financial savings to dozens of school districts throughout the state. The Schools program is designed to help officials of private schools and public school districts make and implement the best decisions possible for their buildings. To do this, the program concentrates on facilitation, arranging financing, and providing targeted incentives to overcome specific barriers to project implementation. The Focus on Energy program draws on qualified experts to offer schools independent, unbiased advice in carrying out energy saving projects. The approach is flexible to meet the individual needs of the school, providing information to make logical, cost effective decisions that meet budgeting criteria.

Program Goal

The overall goal of the program is to increase the demand for energy efficient goods and services by educating school officials. The long term goal is to establish an infrastructure that can improve and sustain energy efficient practices at schools and realize benefits from lower operating costs.

Athens School District

This 550-student school district demonstrates that school districts of all sizes can fund smart, cost effective energy efficiency measures. Working with Focus on Energy advisors, the district identified multiple ways to reduce energy use. The district will save an estimated \$17,000 per year in energy costs, cut potential electricity use by 204,000 kilowatt hours per year, and reduce natural gas use by 3,150 therms per year. In addition to technical assistance, the Focus on Energy program awarded the school district a grant to help offset the up-front costs of implementing the energy saving measures.

Small Business Program

The Small Business program delivers energy efficiency services to a sector that consists of about 170,000 small businesses. Previous energy efficiency initiatives have had limited success due to the sector's large numbers and dispersed nature, the owners'/operators' limited time and resources, and the sector's relatively low energy consumption compared to larger businesses. Flexibility is a key component to the program's ultimate success. Market changes, such as rising natural gas prices, have a profound effect on the ability to recruit program participants in the sector and achieve energy savings goals. The program is targeting the following sub-sectors: beauty salons/spas, restaurants, laundromats, dry cleaners, retail/chain stores, and grocery/convenience stores.

Program Goal

The Small Business program's goal is a more profitable, sustainable, and energy efficient small retail and services sector in Wisconsin

Energy Efficiency Goods and Services Program

The typical commercialization of a technology starts with the "discovery" of an idea and evolves through a maturation process of applied research, laboratory development of a working model, scaled up prototype, commercial demonstration and then, ultimately, complete market commercialization.

The program identifies market barriers for candidate efficiency technologies of Wisconsin manufacturers and retailers. Then it encourages individuals and businesses to invest in energy efficient goods and services by affecting changes in the marketplace that will ensure that these goods and services are available.

The program has identified the following technologies for this commercialization process: electric motors, variable speed drives, ENERGY STAR windows, front-loading clothes washers, fans, blowers, ceiling fans, and HVAC.

Program Goal

The program goal is to get industry involved in the development of the identified technologies, get the products qualified as ENERGY STAR, identify existing barriers to greater market share, and work to eliminate those barriers.

Production Agriculture Program

Agricultural industries, particularly farm operations, use large amounts of energy and usually pay higher electric rates than other commercial users. Further, many of these agricultural operations face difficult economic circumstances.

The Production Agriculture program is designed to strengthen Wisconsin's agricultural communities by improving the overall energy efficiency and sustainability of production agriculture across all eligible rural customers in Wisconsin. The approach is to utilize existing infrastructures such as the USDA Cooperative Extension Service, the USDA Farm Service Agency, WHEDA's Farm program, and the Department of Commerce's Dairy 2020 program to deliver the full range of Focus on Energy programs and services. Some of these services include: energy surveys, detailed reports of findings with specific recommendations, advice on new technologies, help in locating contractors and financing, and access to training seminars.

More specifically, this program can assist farmers by improving system operations and turning energy savings into dollars.

These programs are available to all farm operations and rural communities served by the investor-owned and municipal utilities that participate in the Focus on Energy program. About 47,000 farms are eligible for services under the program.

Program Goal

It is the Focus on Energy goal to fundamentally change the market to make energy savings an integral and sustainable part of living and doing business in these rural, agricultural areas.

Case Study: McNall Farm

Bill McNall is saving \$14,758 a year thanks to a new grain drying system with computer controlled moisture levels. The system draws warm air through the grain bin to reduce the grain's moisture content. The system samples the moisture content every 30 seconds and the computer adjusts the energy use appropriately. The system will pay for itself in a year and a half.

Agriculture Walk-Through

During a typical dairy farm walk-through, the farmer and Focus on Energy service provider investigate the performance of key parts of the milk production system. This includes the milk cooling compressor, water heater and vacuum system, lighting and ventilation in the milking parlor and animal holding areas, and outdoor lighting.

Once the data has been collected, the energy service provider analyzes the data and develops a list of recommended energy saving measures. Based on what the farmer chooses to do, Focus on Energy helps identify installation contractors, equipment, and financing alternatives. The following are examples of expansion/remodeling changes that can result from a walk-through analysis:

- Daylighting upgrades – research has found that cows drink, eat and produce more milk when exposed to high quality lighting for 18 hours per day
- Energy efficient lighting
- Barn ventilation improvements
- Conversion from an electric to a natural gas or propane water heating system
- Electric wiring upgrade to meet current electrical and safety codes
- Install a compressor heat recovery unit that captures heat from the milk cooling compressor to heat water

Focus on Energy Residential Programs

In the residential sector, the Focus on Energy program has allowed for the expansion of the best of previous public and utility energy efficiency efforts throughout the state and has created new programs for sectors not previously reached by utility efforts.

In the past, utility-sponsored programs varied by service area and in duration; there was little statewide consistency. Focus on Energy efforts are now offered in all participating utility areas and will persist long enough to help buyers, businesses and contractors in the marketplace make fundamentally better, less costly decisions.

Program Administration

The Wisconsin Energy Conservation Corporation (WECC) is the Residential sector program administrator. WECC, established in 1980, is a private, nonprofit corporation and a state and national leader in the administration of energy efficiency programs and services. WECC has over 20 years of experience working with utilities, state and municipal governments, regulatory agencies, and consumer groups.

During FY2003, Focus on Energy residential program partners and allies have worked with 156,000 program participants who have realized gross energy savings of 102,660,901 kWh, 16,916 kW, and 2,155,316 therms of natural gas. These significant energy savings were achieved through the active participation of over 1,000 retailers, manufacturers, builders and trade contractors who are updating their business models to capture the value of energy efficiency for their customers, the business community, and the general public. A description of the Residential Program components follows Table 2.

TABLE 2 - Residential Programs Energy Savings July 1, 2002 – June 30, 2003

Program Area	Verified Gross Installed kWh Savings	Verified Gross Installed kW Savings	Verified Gross Installed Therm Savings
ENERGY STAR Products	74,593,005	9,289	269,211
ENERGY STAR Homes	1,000,125	247	96,012
Home Performance w/ ENERGY STAR	9,480,016	5,971	328,483
Targeted Home Performance	295,978	49	98,749
Apartment and Condo Efficiency Services	17,291,776	1,360	1,362,861
Total	102,660,901	16,916	2,155,316
Percent of Goal	229 %	186 %	131 %

ENERGY STAR Products

The ENERGY STAR Products program targets appliances, electronics, lighting, and windows that are certified by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) as meeting strict federal energy reduction thresholds and technical specifications. The Focus on Energy program works very closely with federal agencies to incorporate ENERGY STAR criteria and leverage substantial federal investment of resources into this program.

Wisconsin ENERGY STAR Homes

Over 20,000 new single family homes are built in Wisconsin each year. The Wisconsin ENERGY STAR Homes program targets the residential (one- to two-dwelling homes) new construction market. The program uses standards that are specific to Wisconsin's weather and that exceed state energy codes up to 25 percent. The program also emphasizes other issues beyond energy efficiency that impact a home's performance, such as: combustion safety, durability, adequate ventilation and comfort. The program uses trained consultants to work with private builder partners during the construction process to complete site visits and conduct performance testing.

Home Performance with ENERGY STAR

Home Performance with ENERGY STAR targets the retrofit market for existing one- to four-unit residential buildings. The program emphasizes consumer education, value and "one-stop" problem solving. The program develops the pool of skilled contractors and providers who understand energy efficient building science.

Home Performance with ENERGY STAR promotes energy efficiency improvements in the following areas:

- Diagnostic, energy efficiency, and safety assessment services
- Heating and air conditioning repair, tune-up or replacement
- Building shell improvements such as air sealing, insulation, windows and doors
- Lighting and appliances

Customers who choose Home Performance with ENERGY STAR get:

- Comprehensive information about how their home currently uses energy
- Help identifying the best ways to reduce energy consumption in their home
- Assistance solving problems related to moisture, comfort, and high utility bills
- Combustion safety checks (measuring carbon monoxide levels, for example)
- Free Energy Savers Kit

The program also works with Wisconsin Technical College System instructors to incorporate energy efficient building practices and building science into the building trades curriculum.

Program Goal

The goal of the program is to increase the energy efficiency, affordability, safety, durability and comfort of Wisconsin homes.

Targeted Home Performance with ENERGY STAR Program

This program targets Wisconsin residents who are not eligible for the low income weatherization program, but have limited income and resources. Households with incomes between 150 percent and 200 percent of the federal poverty level are eligible. The program helps them increase the energy efficiency of their homes, targeting energy-saving opportunities in existing one- to four-unit owner-occupied homes and one- to two-unit non-owner occupied rental units.

The program is similar to the low income weatherization program; it provides grants on a sliding scale to make services more affordable for qualified participants.

Program Goal

The goal of this program is to establish the Targeted Home Performance with ENERGY STAR program as a whole house, comprehensive weatherization and efficiency improvement service to increase the energy efficiency, affordability, safety, durability and comfort of targeted homes.

Apartment and Condo Efficiency Services

Multifamily housing is a market sector very much in need of a comprehensive, statewide energy efficiency effort. One-third of Wisconsin residents live in buildings with four or more units. The Apartment and Condo Efficiency Services (ACES) program targets new and existing buildings, four units and larger, and helps property owners and managers make good energy decisions. The Apartment and Condo Efficiency Services program reduces the risks associated with energy efficiency upgrades by providing unbiased expert advice.

A key challenge is the “split incentives” issue. Property managers control operations, maintenance and investments in their buildings, while tenants pay most energy costs. Thus, neither party has an incentive to invest in energy efficiency technologies, since the benefits will primarily go to the other party in the rental contract.

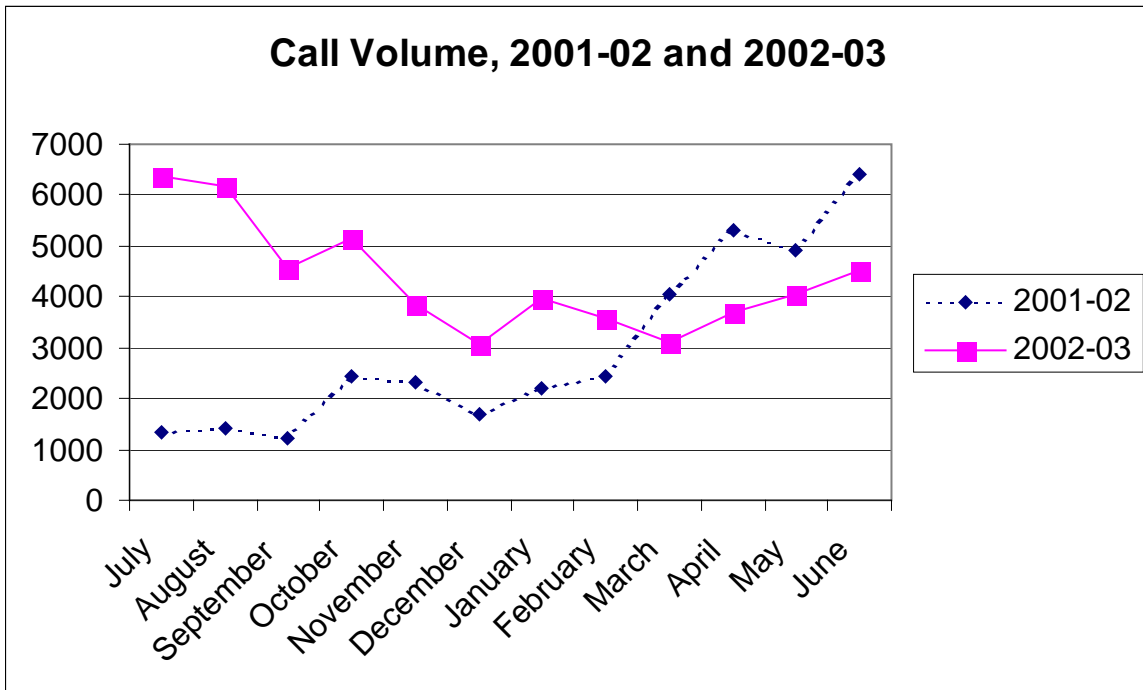
The ACES program provides practitioners with expertise in a wide variety of technologies and business structures, and unique marketing and education strategies have to be employed.

The FY2003 results from this program have been encouraging. The program exceeded its goal for both kWh and therm savings by 100 percent. Energy savings were more than four times the amount achieved the prior year.

Residential Education and Information

The Residential Information Center provides comprehensive information on residential energy efficiency, builds awareness of energy issues, increases participation in various customer and provider education and delivery programs, and increase the level of requests for energy information through the residential information center, public libraries, and county extension agents.

During FY2003, the Residential Information Center responded to inquiries from over 52,000 Wisconsin residents seeking information about its programs and energy efficiency issues in general.



Focus on Energy Renewable Energy Programs

Administration

The Wisconsin Renewable Energy Network (WREN), a consortium of Wisconsin based renewable energy organizations and businesses, teamed with the Wisconsin Energy Conservation Corporation (WECC) to administer the Focus on Energy Renewable Energy program. By statute, the renewable program is allocated 4.5 percent of the available statewide energy efficiency funds each year. The program is focused on customer-sited electric generation technologies.

The Wisconsin Renewable Energy Network includes the Wisconsin Energy Conservation Corporation (WECC), the Midwest Renewable Energy Association, RENEW Wisconsin, the Energy Center of Wisconsin, L&S Technical Associates and MSB Energy Associates. Subcontractors include: the Wisconsin Center for Environmental Education, the Wisconsin Technical College System, the University of Wisconsin-Extension and Franklin Energy Associates.

Program Vision and Goal

Wisconsin has large amounts of wind, sun, plant matter and flowing water. There is great potential to increase the use of these renewable energy sources in Wisconsin. However, the marketplace for renewable energy applications is still immature. Wisconsin's businesses, farms and homes can produce and use more renewable energy, but the road to increasing this use is filled with barriers that the Focus Renewable Energy Program seeks to overcome by implementing an orderly, sustained plan.

The renewable energy program aims to create both demand for and supply of services in amounts that will lead to a renewable energy market functioning on its own. As an area with no fossil resources and at the end of supply lines, Wisconsin needs to make its energy supply as diverse as possible and maximize intelligent use of local resources.

The Focus on Energy Renewable Energy Program is designed to provide unbiased information, educational opportunities, training, facilitation, financing and marketing to create both a push and a pull for more customer-based renewable energy applications in Wisconsin.

The Focus on Energy Renewable Energy program's approach targets early technology adopters and consumers who take an active interest and want to be involved in their energy environment. The aim is to develop a renewable energy market through orderly development of this early adopter market that can support a growing technology, supply and maintenance chain, leading to full integration within five to ten years.

FY 2003 Renewable program energy savings

Verified Gross kWh	Annual Value	Lifetime Value	Verified Gross KW
3,710,892	\$239,353	\$2,521,237	603

Focus on Energy Environmental Research Program

The purpose of the Environmental Research Program is to explore the impact of electrical energy use on Wisconsin's natural environment. Funding supports research projects that study the environmental effects of electrical generation and transmission. By statute, 1.75 percent of available energy efficiency funding is allocated to the program. In FY2003, \$951, 887 was appropriated.

Administration

The program is administered by the Energy Center of Wisconsin (ECW). The ECW is a private, nonprofit organization providing energy efficiency education, information, training and demonstration.

Program Goal

The primary goal of this program is to contribute practical and useful knowledge to the ongoing process of designing Wisconsin's electrical energy future. Of specific interest are research projects that fill gaps in existing knowledge about the environmental effects of electrical energy generation and transmission in Wisconsin.

Research Priorities

The Environmental Research Forum developed a proposal process to solicit, evaluate and recommend six research priorities. These include:

1. Study the effect of mercury and other air pollutants from coal fired power plants on human health in Wisconsin.
2. Measure and inventory mercury in the environment, both sources and fates.
3. Conduct deposition monitoring, modeling and fate of multiple pollutants.
4. Study ecosystem impacts of electrical generation and transmission.
5. Study land use issues resulting from electrical generation and transmission.
6. Identify, study and assess global climate change impacts and strategies for Wisconsin.

Environmental Research Forum members:

**Division of Energy,
Department of Administration**

Department of Commerce

**Department of Natural
Resources**

**University of Wisconsin –
Madison**

Clean Wisconsin

Wisconsin Utilities Association

WE Energies

**Public Service Commission of
Wisconsin**

Sources of Energy Used to Generate Electricity in Wisconsin

Coal	73.1 percent
Nuclear	20.9 percent
Hydroelectric	3.5 percent
Natural Gas	1.6 percent
Oil	0.3 percent
Other	0.6 percent

Since its inception the program has awarded \$2,106,242 for research projects related to the research priorities. The following are the Environmental Research Grant topics funded through FY03:

- *Changes in Biodiversity in Selected Natural Communities Related to Global Climate Change*
- *Impacts of Forest Management Activities on Carbon Sequestration and GHG Emissions*
- *Assessing the Ecological Risk of Mercury Exposure to Common Loons*
- *Population-Based Methylmercury Exposure Assessment*
- *Projecting Impacts of Greenhouse Gases on Carbon Sequestration by Wisconsin Forests*
- *Mercury Chemistry in Power Plant Plumes*
- *Wisconsin NADP National Trends Network (NTN)*
- *Wisconsin Mercury Deposition Network*
- *Evaluation of Fin Clips as a Non-Lethal Approach for Estimating Mercury Concentrations in Fish*
- *Quantifying Carbon Storage in Wisconsin*
- *Measuring Vertical Fluxes of Gaseous Elemental Mercury in Wisconsin*
- *State of the Science on the Ecological Effects of Transmission Line Siting and Construction*
- *Comparative Toxicity of Secondary Coal Combustion and Mobile Source*
- *Mercury in Selected Fish Species over Time*
- *Lichen Bioaccumulation and Bioindicator Study near Alliant Columbia Generating Facility*

Home Energy Assistance Programs

Background

Home Energy Assistance programs help families and individuals with limited incomes*. Managed by the Department of Administration, the programs are delivered to eligible households through county health and social services agencies, community action agencies, tribal governments and other nonprofit organizations.

These programs receive significant financial contributions from the federal government through the Low Income Home Energy Assistance Program (LIHEAP) block grant and the Low Income Weatherization Assistance Program (LIWAP). As a result of 1999 Wisconsin Act 9, these programs also receive state public benefits money. The public benefits funds have allowed the state to increase the number of households that receive weatherization, efficiency, emergency, heating cost, and electricity cost services. By integrating these funds with the federal Low Income Home Energy Assistance Program and the federal Low Income Weatherization Assistance Program, Wisconsin has developed a comprehensive assistance program that deals with “whole home” energy needs.

* The state public benefits statute defines low-income households as those with income not more than 150 percent of the federal poverty level.

Low Income Energy Program Goal

The ultimate goal of all low-income energy programs is to make the household energy self-sufficient; that is, to provide services such that the household can meet their energy costs on an ongoing basis without sacrificing other necessities. Therefore, the goal of the program is not just to deliver its services, but to deliver services in a way that contributes toward a household's self-sufficiency. The program targets services especially to households with a vulnerable person or a high energy burden.

Heating Assistance

WHEAP Heating Assistance is a one-time benefit payment for each heating season (October 1 through May 15). It is intended to help pay a portion of heating costs, not to cover the entire annual home heating costs. The amount of the heating assistance benefit depends on household size, income level and household heating costs. Heating assistance is provided entirely with federal funds from a block grant received for that purpose.

Heating assistance benefits are sent directly to utilities and fuel suppliers to apply to a household's bill. Customers receive a notification from the Wisconsin Division of Energy informing them of their benefit amount; the fuel supplier credits the amount to the customer's account.

Assistance with Electric Bills

The Public Benefits funds have enabled the program to expand services to assist with non-heating electric costs. This assistance is intended to help pay a portion of the electric costs of a household, not to cover the entire annual cost of electricity for the household.

Households served by non-participating municipal and cooperative utilities (not contributing to the Public Benefits Fund) are not eligible for this benefit, but are eligible for their provider's "commitment to community" program. As a service to non-participating utilities and cooperatives, the department processes their customer applications and calculates the equivalent state benefit.

Energy assistance benefits for electric costs are sent directly to electric suppliers in the same manner as for heating assistance. Customers receive a notification from the Division of Energy informing them of their benefit amount, and the supplier credits the amount to the customer's account.

Crisis Assistance

Crisis assistance is available to eligible state residents who are subject to a disconnection of their utility service or if they are nearly out of heating fuel and do not have any way to pay for the fuel or fuel bill. WHEAP Crisis Assistance provides both emergency services and proactive services. Importantly, all WHEAP agencies provide a 24-hour crisis phone number.

Emergency services also help during the heating season (October 1 through May 15) by purchasing heating fuel for a household, providing a warm place for a customer to stay for a few days, providing furnace repair/replacement, or taking other actions that will help in a heating emergency.

Proactive services may help residents avoid future emergencies throughout the year by establishing co-payment plans between the customer, fuel supplier, and WHEAP agency; providing training and information on how to reduce fuel costs; providing counseling on budgets and money management; or taking other actions.

Weatherization and Conservation Services

Weatherization Services help reduce home energy costs and conserve energy by reducing home energy consumption. This makes homes more comfortable -- warmer in the winter and cooler in the summer. The reduction in consumption reduces the customer costs and also reduces overall consumption, which benefits all customers.

The federal weatherization program is operated statewide. An expanded program is in operation in areas served by participating utilities.

Common weatherization services may include attic and side-wall insulation, reducing air leakage into and out of the home, heating system repair or replacement, water heater

replacement, refrigerator replacement, window repair or replacement, energy efficient light bulbs, and water saving measures.

Program Eligibility

Generally, people are eligible for weatherization services if they are eligible for WHEAP. Families that apply for WHEAP also are considered for weatherization services.

The table shows income guidelines applicable for the 2002-2003 heating season. Families are eligible for home energy assistance program services if their gross income for the last three months is less than the amount shown for their family size. In addition, both weatherization and WHEAP have simple non-financial eligibility tests.

<u>Family Size</u>	<u>Family Income</u> (3 Months)
1	\$ 3,367.50
2	4,545.00
3	5,722.50
4	6,900.00
5	8,077.50
6	9,255.00
7	10,432.50
8	11,610.00
For each additional person add	\$1,177.5

**Home Energy Assistance Program
2002/2003 Heating Season**

LIHEAP Heating Assistance

- Provided LIHEAP Heating Assistance to 131,676 households
- Average payment = \$387

Public Benefits Electric Assistance

- Provided Public Benefit Electric Assistance to 119,686 households
- Average payment = \$92

LIHEAP Crisis Assistance

- Provided LIHEAP Crisis Assistance to 31,622 households
- Average payment = \$273

Public Benefits Crisis Assistance

- Provided Public Benefit Crisis Assistance to 12,236 households
- Average payment = \$159

Heating Unit Repair and Replacement

- Provided Heating Unit Repair and Replacement to 1,913 households
- Average payment = \$1,432

**Weatherization Assistance Program
(July 2002 through June 2003)**

All Funding Sources

- Provided Weatherization Assistance to 6,726 households
- Assistance is 37% above FY2002 level of 4,360 households
- Average household benefit from all fund sources = \$5,735

State Public Benefits Funds Only

- Public Benefit Assistance to 5,797 households
- Assistance is 50% above FY 2002 level
- Average public benefit to PB qualified households = \$4,273

2003 Low Income program evaluation

The Wisconsin Home Energy Assistance Program (WHEAP) and the Weatherization Program (WAP) were subject to a thorough evaluation effort in FY2003.

The purpose of the evaluation was to assess the program's performance in four measurement areas recommended by the Performance Measures Working Group.

The four areas identified for review were:

- Targeting and servicing those who are vulnerable or have a high energy burden.
- Evaluating the interactions of all the low-income programs in delivering services.
- Program impacts on a client's ability to sustain payment of bills.
- Program impacts on clients' lives, including non-energy benefits

Key Findings:

1. WHEAP is exceeding most of the adopted performance targets. The program serves an estimated 40 percent of the low-income population in the state, exceeding the 33 percent goal. WHEAP is exceeding the penetration goal for servicing households with a high-energy burden and those with an elderly or disabled person. It is doing nearly as well reaching households with children under age six.
2. WHEAP is reaching those who need it most. An analysis of participants and non-participants found that participants are not as well off as eligible non-participants. This indicates the program is reaching the eligible households most in need.
3. Administration of the WHEAP and WAP programs continues to run efficiently although local-level coordination and cooperation between the two programs is lacking. The department responded to this finding by requiring administering agencies to develop local coordination plans.
4. Energy education of clients is increasing and the effort is at least moderately effective in helping clients make energy improvements to their home.
5. While flexibility in administering the programs is welcomed by the local agencies, this has led to a great deal of variation in the way WHEAP and WAP are delivered across the state. The lack of standardization may result in disproportionate distribution of benefits and inefficiencies.
6. There is a positive, though limited, trend in participant progress toward sufficiency. Evidence points to a positive impact on two measures of sufficiency: 1) decreasing

likelihood of experiencing a utility disconnect, and 2) decreasing a household's concern with meeting energy and non-energy bills.

Verified Gross Energy Savings from Low Income Programs (2001-2003 biennial)

Verified Gross kWh	12,921,823
Annual value of kWh savings	\$1,075,931
Verified Gross therms	3,676,353
Annual value of therm savings	\$2,845,105