

# IOWA energy BULLETIN

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Rebuild Des Moines • Rebuild Des Moines • Rebuild Des Moines

## *A New Target for Rebuild*



How do you achieve energy efficiency in a city with more than 300,000 residents, thousands of businesses, and tens of thousands of buildings?

The coordinators of Rebuild Des Moines asked that question when adopting the state's largest city as part of Rebuild Iowa, a joint initiative by the U.S. Department of Energy and Iowa DNR to help communities implement cost-effective energy efficiency and waste reduction improvements.

The solution? To kick off the program by targeting a community segment needing extra help. "The number one overlooked sector in any city is public housing," said Kelly Needles, Rebuild Des Moines coordinator and president of The Energy Group. "Most private businesses just aren't interested in helping them, and many housing units tend

to be neglected."

One reason for targeting public housing is because of the many residential-based programs and organizations with resources to contribute. With the help of the Des Moines Public Housing Authority, MidAmerican Energy and A-TEC (a private company specializing in residential energy efficiency), the Rebuild effort will make improvements in more than 900 housing units, both single dwelling and multi-family, over the next two years.

One of the programs involved is HomeCheck by MidAmerican Energy. HomeCheck is available for single-family dwellings, such as houses and duplexes, and provides up to \$150 in energy improvements per house. Energy specialists evaluate the homes and help install measures such as water heater blankets, low-flow shower heads, and pipe insulation. Program participants — in this case, the City of Des Moines — can also insulate homes through financing from MidAmerican Energy; the energy company will pay up to 25 percent of the cost of installation.

The Energy Group and its

partners are also researching federal programs for assistance. U.S. Housing and Urban Development (HUD) may provide the resources to purchase efficient refrigerators, stoves, washers and dryers for the public housing project.

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# Message from Sharon Tahtinen

## *Preaching to the Ethanol Choir? You Bet!*



Iowa won another ethanol victory this spring when Governor Terry Branstad and the Iowa legislature extended the state tax exemption for ethanol until 2007. While Iowans understand the gasoline additive's importance to our state's economy — namely, that thousands of jobs and millions of dollars in economic activity can be attributed to ethanol production — that message cannot be preached too loudly or frequently.

Why? National politicians are continuing to debate extension of the *federal* tax exemption, also through the year 2007. The ongoing push by Iowa to preserve ethanol's status is helping national leaders, media, economists, and businesses draw their own conclusions about how ethanol can be the solution for many of the country's most pressing issues.

One of the many reasons ethanol is vital to Iowa's economy is because of the involvement of

farmers in ethanol production. As of July 1996, one-third of the ethanol produced in the U.S. came from farmer-owned facilities.

Additionally, in an April 26, 1998 article by the *Des Moines Register*, national security experts were quoted for stressing ethanol's importance to national defense. A letter from security leaders, including R. James Woolsey, former CIA director, and Admiral Thomas Moorer, former chair of the Joint Chiefs of Staff, emphasized that because the nation already spends billions of dollars to safeguard foreign oil imports, the domestic renewable fuels industry can't compete without the modest subsidy the ethanol credit represents. In addition, they noted that while ethanol currently provides only one percent of U.S. energy requirement, it could increase to 20 percent by 2020 without affecting the world's food supply.

This is just one of the many examples of how ethanol is gaining support from a growing range of

advocates. National figureheads and international organizations — from Newt Gingrich to Shell Oil Co. — are declaring the economic and environmental benefits of homegrown energy resources.

The message is simple: the louder and longer we communicate ethanol's benefits, the increased number of supporters who will help demonstrate ethanol's national importance.

So let's continue to preach, even if it's to each other. Our message can mean continued economic and environmental benefits for our state and nation.

Sincerely,

A handwritten signature in dark ink that reads "Sharon A. Tahtinen". The signature is fluid and cursive.

Sharon Tahtinen  
Energy Bureau Chief  
DNR

## Low-Cost Energy Audit Now Available!

If you're an Energy Bank participant looking for a cost-effective way to evaluate energy use in small buildings, a new PC-based program can help!

The Small Building Audit is designed for local governments interested in energy efficiency improvements without an extensive upfront analysis. The computer-based program helps facility managers determine the

most effective improvements for individual buildings, given utility, energy usage and equipment information. The format was designed by the Iowa State University Center for Building Energy Research.

The Energy Group, a professional energy consulting firm, can answer any questions as the facility manager follows the program, and will also

evaluate results. The Small Building Audit Format is available to members of the Energy Bank program for \$195. Each disk can be used for up to ten different buildings, making it very economical. Please call The Energy Group at (515) 271-5070 for your copy.

# It's Time to Apply for the 1998 Iowa Energy Leadership Awards!

The Iowa DNR invites you to apply for a 1998 Iowa Energy Leadership Award. Deadline for application is June 22, 1998.

The Energy Leadership Awards were developed to recognize the success and ingenuity of Iowans for their efforts in developing energy efficiency and renewable energy. Past winners include private companies, schools, utilities and various other organizations. Several winners have gone on to win national awards for their energy programs.

## How to Apply

You are invited to submit an application (one is enclosed with this Energy Bulletin) to showcase how programs created by your organization exemplify the use of alternative energy resources and energy efficiency. If you are familiar with another organization that would be an ideal candidate for an Energy Leadership Award, please have them contact the DNR for an application. Winners will be announced in October. Join us to recognize successful energy efforts in Iowa!

For more information, contact Julie Tack at (515) 281-8665. E-mail: [jtack@max.state.ia.us](mailto:jtack@max.state.ia.us)



## Student Energy Award Winners

The DNR honored two students this spring with Iowa Student Energy Leadership Awards. The students were chosen from more than 40 entries related to energy at the Iowa State University Science and Technology Fair March 27 and 28.

### Middle School Winner

Eric Turner, a seventh grader at Algona Middle School, won for his investigation of polymers and their effect on water conservation. Polymers are chemical molecules the size of rock salt capable of absorbing water. Polymers can reduce the need for watering crops by 25-60 percent, depending upon location and conditions. Reduced water use also decreases the amount of energy required in crop production.

### High School Winner

Joni Taylor, a junior at West Central Stuart High School, evaluated the energy content of cow manure based on differing diets of corn and hay. She concluded that cow manure was a viable source of alternative energy, and that hay was the greatest contributor to high energy content in the waste material.

The two students will receive their awards as part of the annual DNR Iowa Energy Leadership Awards luncheon next fall.

## Did You Know...

In 1997, Iowans purchased over 2 billion taxable gallons of gasoline, ethanol-blended gasoline, diesel, and liquid petroleum gas (LPG) to fuel their vehicles. Almost 20 million tons of carbon dioxide were emitted as a result of this fuel consumption.

## Energy Bureau Wins NERO Award

The Iowa DNR-Energy Bureau is the recipient of the prestigious 1998 Energy Conservation Award, presented by the National Energy Resources Organization (NERO). The Bureau received the award at a Washington D.C. ceremony on May 5.

The Energy Bureau was honored for developing the Iowa Energy Bank, a program that has achieved \$150 million in efficiency improvements, \$25 million in annual energy cost savings, and thousands of tons of reduced emissions in public-sector facilities.

Past recipients of the award include Dow Chemical Company, Xerox, and 3M.

## West Branch Middle School Honored by EPA

The U.S. Environmental Protection Agency awarded West Branch Middle School with a President's Environmental Youth Award for 1997. The West Branch science club's project received first place from a four-state region including Iowa, Kansas, Missouri and Nebraska.

The club's project focused on pollution control methods that encourage increased energy efficiency and

decreased waste. Based on student recommendations, the middle and elementary schools replaced their lighting systems, saving \$22.75 per student each year. In addition, a local bank replaced its lighting system due to student encouragement.

The students and their teacher, Hector Ibarra, were honored at an awards ceremony in Washington D.C. on March 25.

## Maytag's Neptune Continues to Shine

The Maytag Corporation of Newton received yet another honor for its Neptune washer, this time from the Department of Energy (DOE). The company was given the Energy Star Appliance Partner award, recognizing the Neptune's contribution to energy efficiency and water conservation.

Maytag introduced its new machine Jan. 1997, and has continually proven its claims of cutting energy and water bills for consumers. In Bern, Kansas last fall, use of the Neptune

washer in 104 households reduced water use by 39 percent and electricity costs by 58 percent. Results were monitored by the DOE.

Seattle utilities also backed the Neptune by giving consumers a \$180 rebate for buying the machine because it would help delay the construction of expensive water treatment plants.

The Iowa DNR awarded Maytag with an Iowa Energy Leadership Award, also for its work in energy efficiency, last fall.

## Davenport Receives Green Lights Energy Star Award

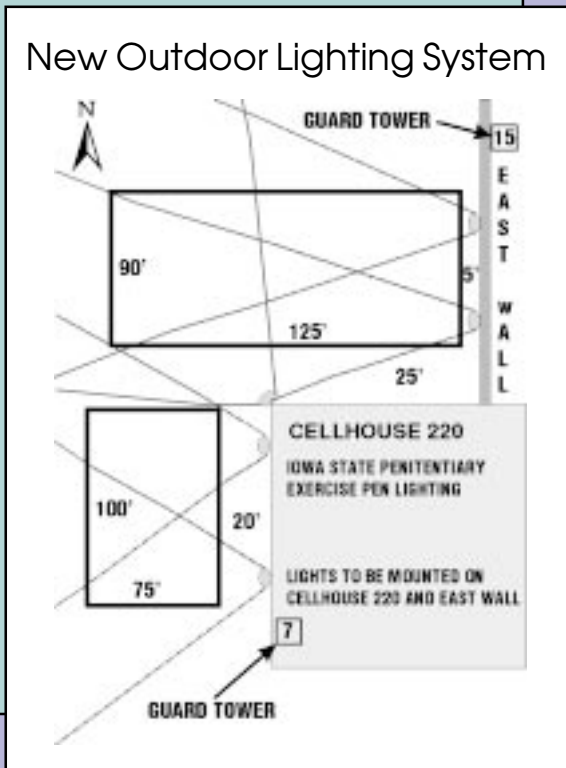
The Environmental Protection Agency (EPA) has chosen Davenport Community School District as the 1998 Green Lights School System Partner of the Year. The school was honored in Washington D.C. on March 24.

As a participant in the EPA's Green Lights program, the school is now saving \$240,000 in annual energy costs due to extensive lighting retrofits in its 33 school buildings. According to Maria Tikoff Vargas, co-director of the

Energy Star program, "Davenport Community Schools serves as a remarkable example of how organizations can combine environmental concerns, public management and smart business strategy."

Other winners of the 1998 Energy Star Buildings and Green Lights Partnership awards included Mobil, Compaq Computer Corp., Walt Disney World Company and McDonald's Corp.

# brightening up the Jailhouse Blues



The Iowa State Penitentiary in Fort Madison recently needed a creative solution to help brighten its outdoor exercise area — a deceptively simple predicament until one considers the unique concerns inherent to prison safety.

Iowa’s only maximum security prison received a court order that its most dangerous prisoners, located in lock-down cell houses, must exercise one hour each day. The penitentiary’s outdoor pens (see drawing above), with ten-foot-high fenced walls and two guard towers, serve as the exercise areas for these prisoners. With a growing maximum-risk prisoner population and a concern about the number of inmates allowed to exercise at the same time, the penitentiary needed the ability to use the pens even after dark.

Rich Taylor, air conditioner mechanic at the prison, said, “We need the exercise areas available from 6:00 a.m. to 8:00 p.m. everyday. We were looking for a way to provide a lot of lighting, efficiently and economically, without poles or wires that could be dangerous in a prison situation.” Just as importantly, if power is lost at

anytime, the outdoor lights must turn back on immediately. Most outdoor lighting systems can take up to 15 minutes to recharge.

Taylor contacted Dan Lane, architectural technician at the DNR, to help find a solution. Lane recommended a unique lighting system created by Hubbell Lighting, Inc.,

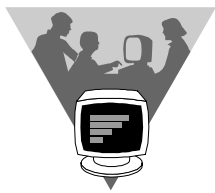
which was not on the market even a year ago. The high-pressure sodium lights can illuminate all corners of the exercise pens, and are guaranteed to turn back on within three seconds of being extinguished. The drawing at left demonstrates how the exercise pens are illuminated by five new lights, installed on the prison walls.

Lane’s lighting recommendation also saves energy costs. The only other option to match the prison’s requirements, an incandescent light, would have consumed 473 percent more energy than the newly installed system.

“We couldn’t be happier with this new lighting system,” said Taylor. “It provides the maximum amount of lighting at an economical cost, as well as safety for our prisoners and correctional officers.”

For more information about energy efficient lighting, contact Dan Lane at (515) 281-6696.

	<u>Incandescent</u>	<u>High Pressure Sodium (Installed System)</u>
Number of light fixtures	18	5
Watts/fixture	1,000	670 (ballast included)
Total connected load	18 kW	3.35 kW (ballasts included)
<b>Annual energy use @ 2,000 hours/year</b>	<b>36,000 kWh</b>	<b>6,700 kWh</b>
<b>Energy saved: 29,300 kWh per year</b>		



# The Summer Driving Season and Iowa Gasoline Prices

By Ward Lenz, Energy Data Analyst and David Downing, Program Planner

Predicting Iowa's gasoline prices is a complex — and many times fickle — undertaking. After a winter and spring of low gas prices, consumers should expect 1998's prices to peak in June between \$1.05 and \$1.10. This is about \$.10 to \$.15 lower than one year ago. What factors affect this prediction?

Gasoline prices can be affected by a number of unusual and unpredictable circumstances. When the Exxon Valdez ruptured off the Alaska coast, spilling its cargo of crude oil, gas prices skyrocketed. However, the amount of oil lost was only a tiny portion of U.S. consumption. On the other hand, the March 1998 decision by OPEC to reduce oil production by 2 million barrels per day — a substantially larger impact to supply — created only a small blip in Iowa gasoline prices.

So how does Iowa estimate gasoline prices from month to month or even day to day? The Energy Bureau collects and reviews energy prices and



supply data from a historical perspective, helping to anticipate future gasoline prices.

The above chart demonstrates the monthly average gasoline price from 1980 to 1997. Each year, prices have risen dramatically in summer months and peaked in June. The largest factor contributing to the price increase is the rise in individual driving. During a typical year, Iowa gasoline consumption can rise 25 percent between March and August.

Another issue affecting summer prices is the much discussed El Nino weather pattern, which created a warm winter season and kept gasoline prices down because of low demand of

petroleum-based products. This resulted in a higher-than-normal build up of gasoline reserves, creating stable gasoline prices for the summer peak driving season.

Based on all these inputs, Iowans should experience lower-than-normal gasoline prices throughout the summer — a prediction many will enjoy, especially those with vacation and summer plans.

Ward Lenz is the new data analyst for the DNR-Energy Bureau. He and David Downing, program planner, are responsible for evaluating and predicting trends in Iowa's energy consumption, including petroleum, coal, natural gas and gasoline. If you have questions about Iowa's energy data and trends, contact Ward at (515) 281-8518, or David at (515) 281-4876.

# Energy Resources

## Publications and Multi-Media Materials

### *Plant/Crop-Based Renewable Resources 2020: A Vision To Enhance U.S. Economic Security Through Renewable Plant/Crop-Based Resource Use*

Published by the U.S. Department of Energy, this report outlines a strategic vision developed by agricultural, forestry, and chemical communities for the plant- and crop-based renewables industry. The booklet analyzes plant resources as feedstocks and discusses future technologies. It is designed to help readers make informed research,

programming, and funding decisions. To obtain a copy, call (800) 363-3732 and request document SD414.

### *Permitting of Wind Energy Facilities*

This handbook is design for individuals and groups involved in evaluating wind projects. It provides the framework for understanding the environmental and public issues important in making effective wind energy decisions, especially for facility permitting processes. Developed by the National Wind Coordinating Committee, you can obtain a

copy of the handbook by contacting Ward Lenz of the Iowa DNR at (515) 281-8518. Supplies are limited.

### *Green Developments CD-ROM*

Featuring 100 case studies, more than 400 visuals and numerous resources and web links, this CD-ROM demonstrates the financial and environmental benefits of responsible real estate development. Produced by the Rocky Mountain Institute in cooperation with the U.S. Department of Energy, contact (800) 346-0104 for a copy.

Published by the Energy and Geological Resources Division, Iowa Department of Natural Resources.

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## Rebuild Des Moines

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Program coordinators predict improvements in 500 single-family public housing units will save the city \$18,000 in annual energy costs. "Public housing is essentially paid for by taxpayers," said Needles. "Anything we can do to lower utility bills and decrease taxpayer burden should be a priority."

Rebuild Des Moines hopes their program will eventually serve as a model for other Iowa communities to address energy efficiency concerns in public housing.

Down the road, Rebuild Des Moines will

extend to other sectors within the city. More than \$450,000 in improvements to city government buildings have been identified, which would save an estimated \$150,000 per year in energy costs. Coordinators also hope to reach local businesses by demonstrating the economic opportunities available through lower energy bills.

"Because of its size, Des Moines needs to take a more unique approach for achieving energy efficiency than smaller, tightly knit communities," said

Needles. "By opening this program up to new sectors and really targeting the needs of those groups, I think we can achieve an incredible level of success."

Other Iowa communities participating in Rebuild Iowa are Webster City, Hancock County, Waverly, Cedar Falls and Waterloo.



# Calendar of Events

May 31-June 3. Clean Cities Conference, Washington, D.C. Alternative fuel vehicle development on a community level. Call (800) CCITIES.

June 14-18. American Solar Energy Society Conference, Albuquerque, NM. 27th Annual. Contact American Solar Energy Society, 2400 Central Ave., Suite G-1, Boulder, CO 80301, (303) 443-3130.

June 17-18. Rebuild Partner Information Workshop, Webster City, IA. Contact Patti Cale of the Iowa Association of Municipal Utilities at (515) 289-1999.

June 19-21. Midwest Renewable Energy Fair, Amherst, WI. The 9th annual fair offers hundreds of workshops, speakers, exhibits and demonstrations on renewable energy and energy efficiency. Contact Midwest Renewable Energy Association, PO Box 249, Amherst, WI 54406. Telephone: (715) 824-5166. E-mail: mreainfo@wi-net.com

July 7. Governors' Ethanol Coalition Meeting, South Bend, IN. Contact Niles Parker at (317) 232-8970.

July 8-10. Ethanol Fuel Workshop, South Bend, IN. Contact Niles Parker at (317) 232-8970.

August 13-23. Iowa State Fair, Des Moines, IA. Energy display at the DNR Building, near the fair west entrance. Also visit the State Fair Wind Turbine.

August 20-21. Electric Power Research Institute, Denver, CO. For information, contact (650) 855-2259.

September 19-20. 1998 Iowa Renewable Energy EXPO, Iowa City, IA. Sponsored by I-RENEW and located at the Johnson County 4-H Fairgrounds.

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