

Committee Name:

Senate Select Committee – Job Creation (SSC–JC)

Appointments

03hr_SSC–JC_Appt_pt00

Committee Hearings

03hr_SSC–JC_CH_pt00

Committee Reports

03hr_SSC–JC_CR_pt00

Clearinghouse Rules

03hr_SSC–JC_CRule_03–

Executive Sessions

03hr_SSC–JC_ES_pt00

Hearing Records

03hr_ab0000

03hr_sb0000

Misc.

03hr_SSC–JC_Misc_pt06

Record of Committee Proceedings

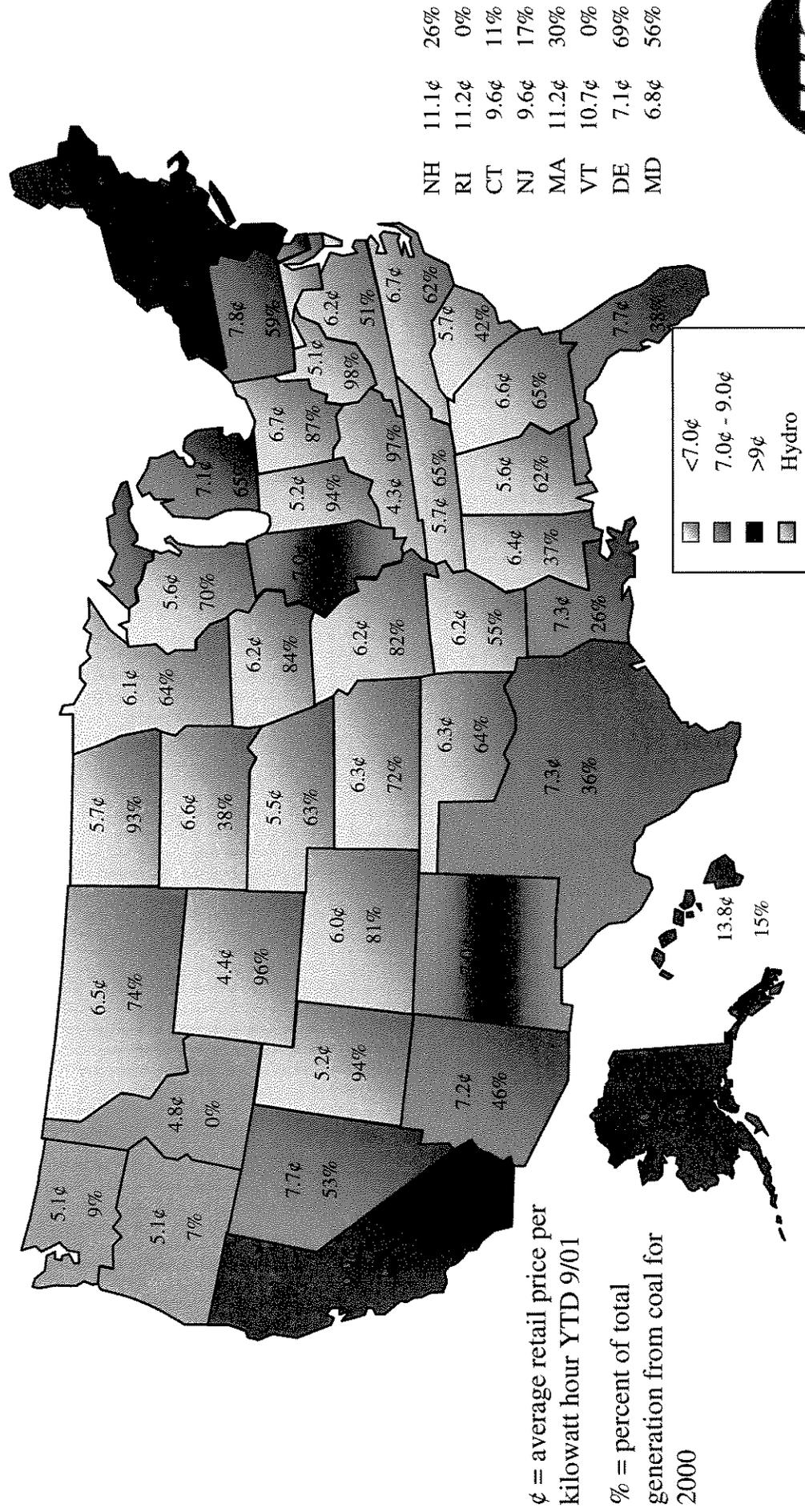
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Why New Coal Units are Important in our Energy Mix

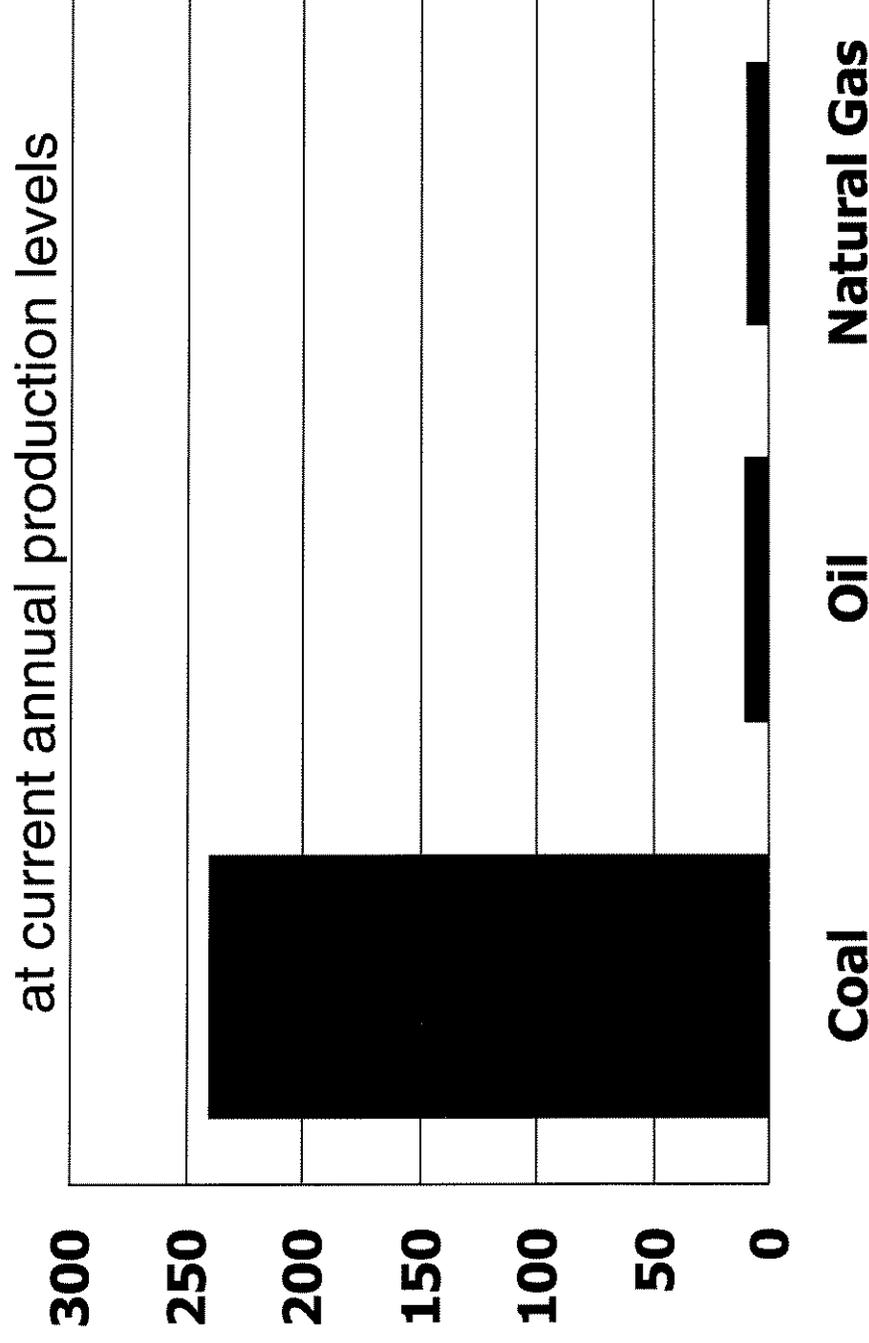


Source: Energy Information Administration



Coal's Long-term Strength

Years of North American Reserves

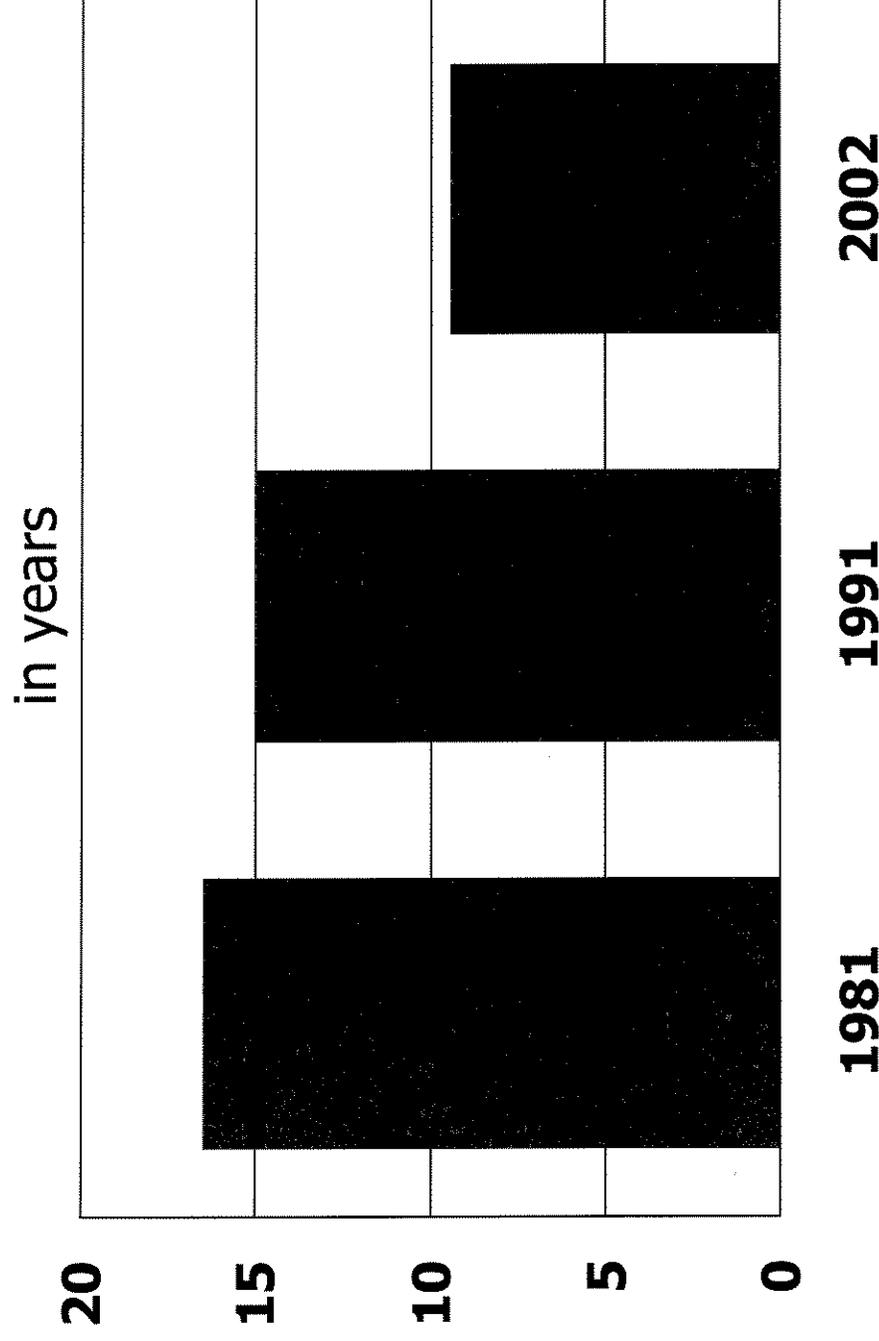


Source: British Petroleum Statistical Review of World Energy, 2003



Natural Gas Reserves Decline

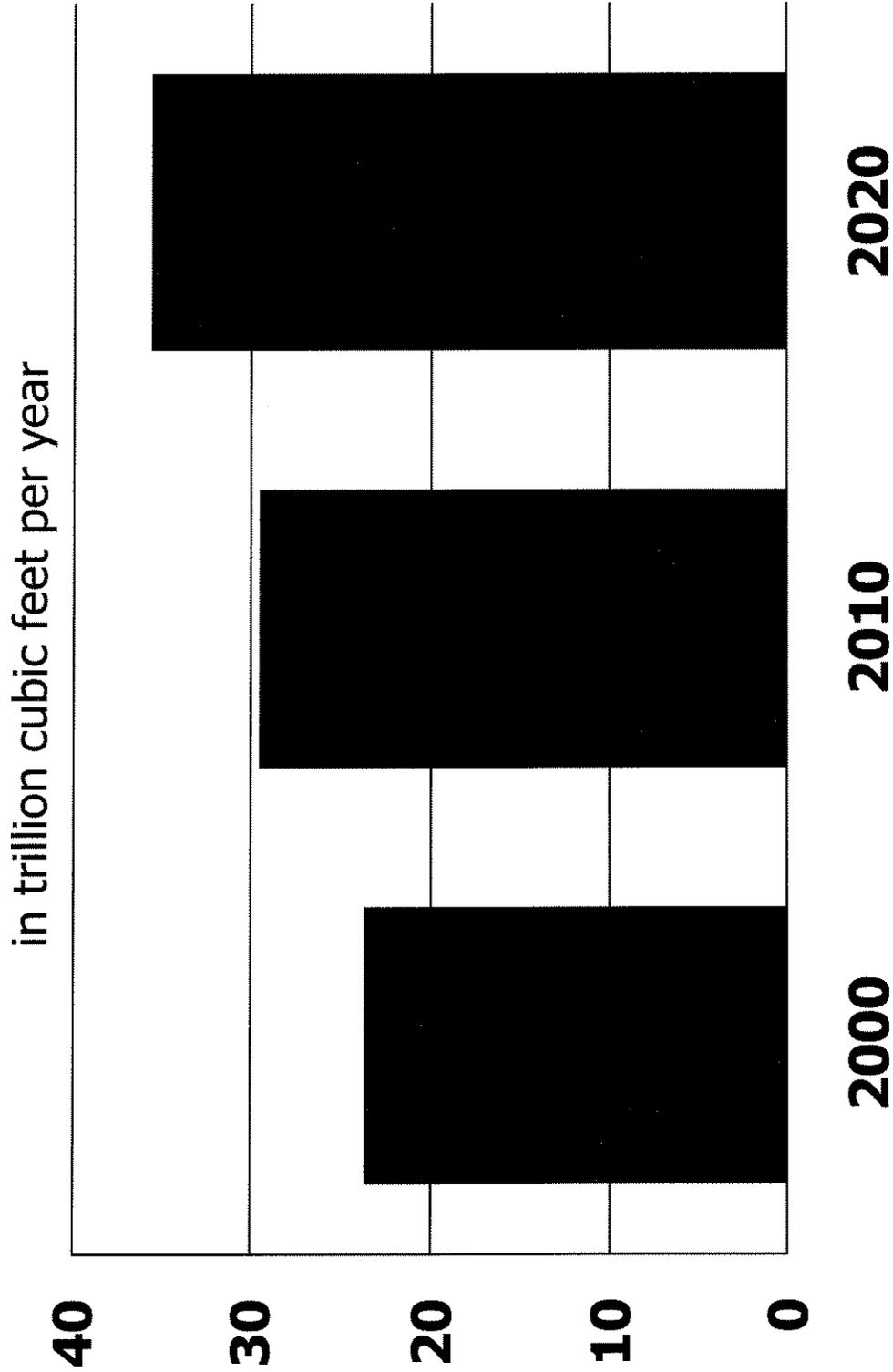
Proved reserves divided by annual production



Source: British Petroleum Statistical Review of World Energy, 2003

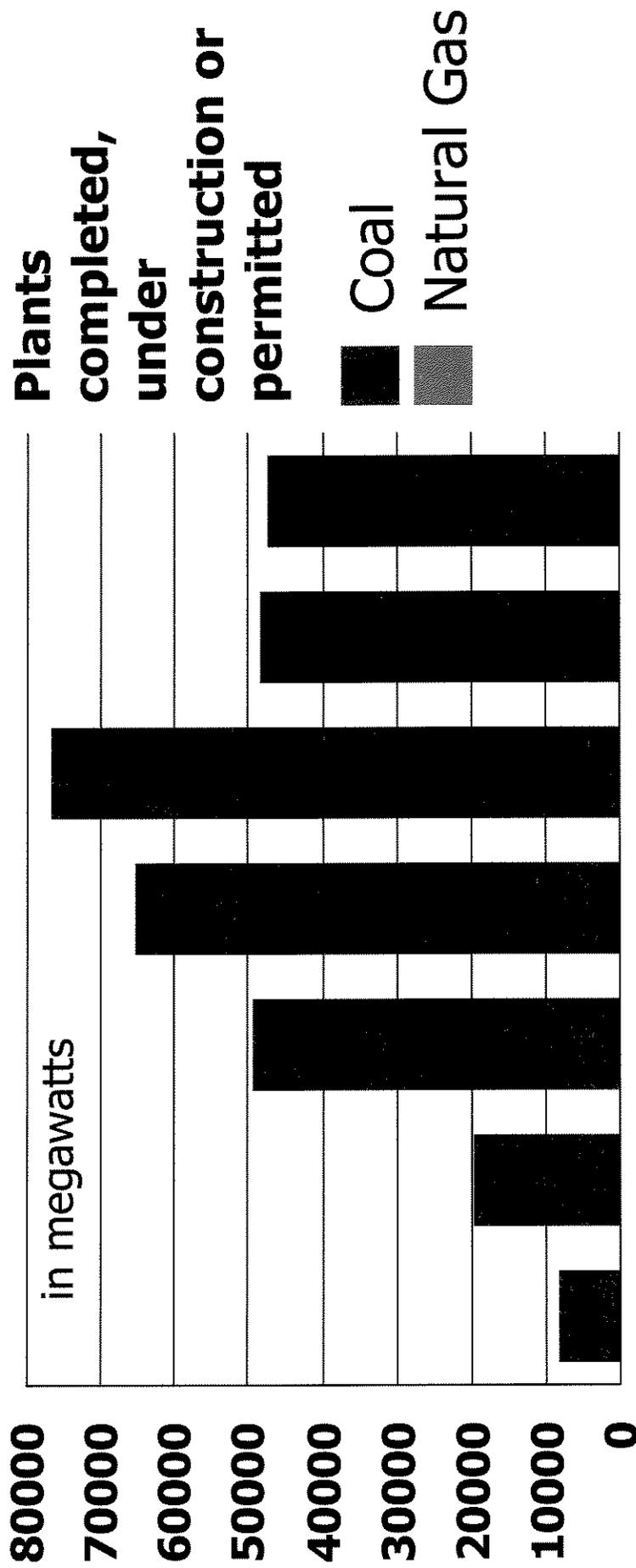


Natural Gas Usage Climbs



Heavy Reliance on Natural Gas

Nearly all new generation is natural-gas based



1999 2000 2001 2002 2003 2004 2005

Source: Henwood Consulting, New Entrants Database



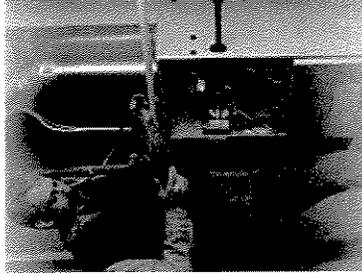
Natural Gas Consumption



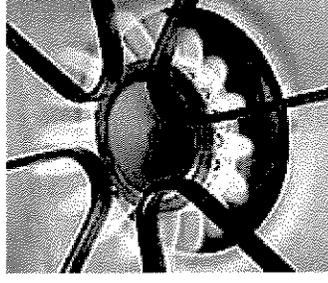
Generating 1,800 megawatts of power with natural gas would consume as much natural gas as one million households each year.



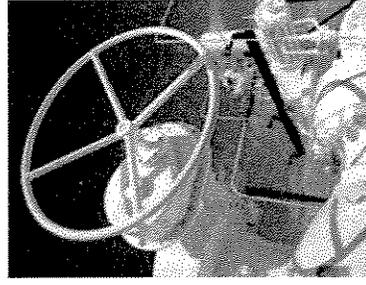
Important Uses for Natural Gas



■ Heating



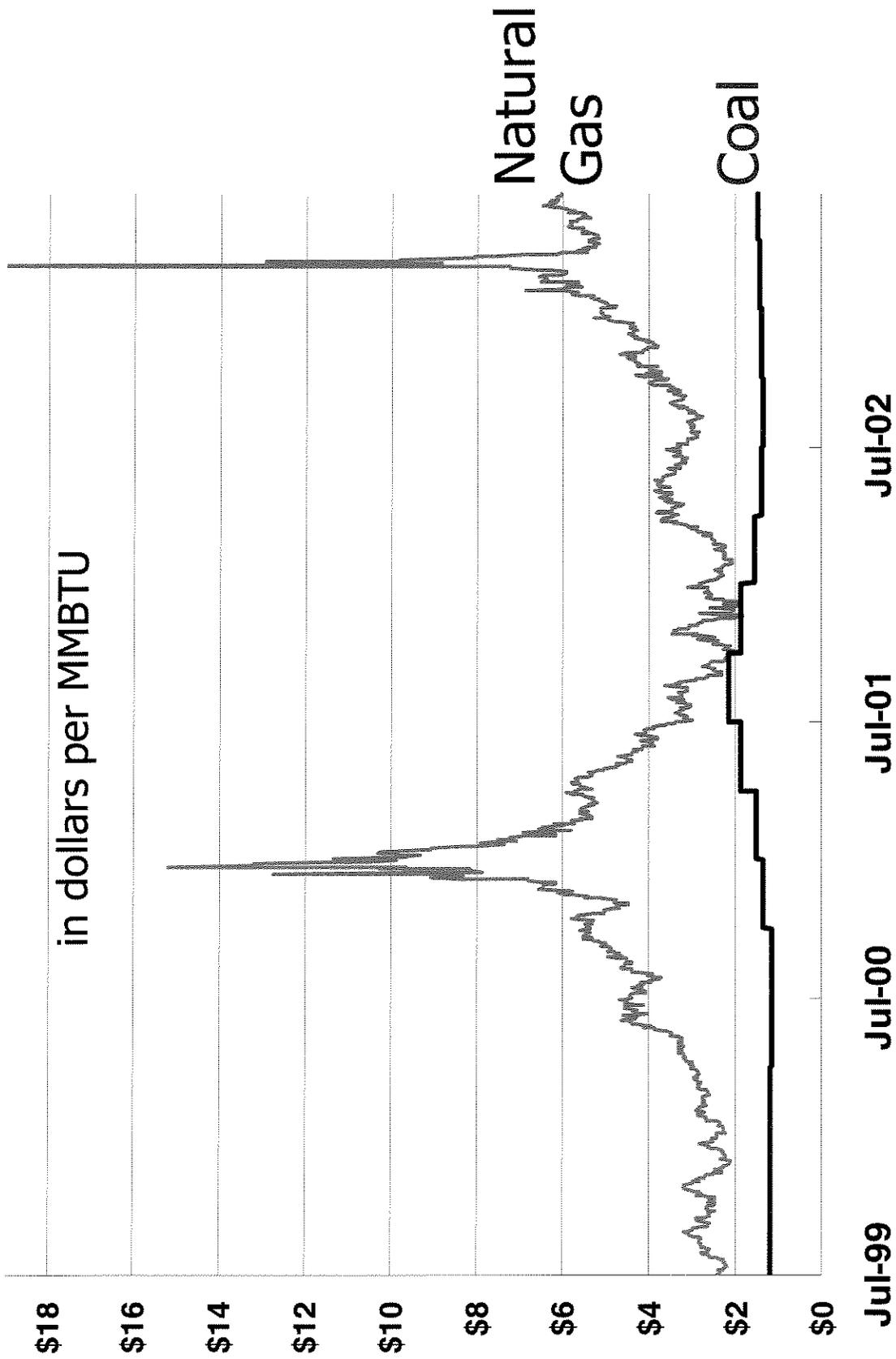
■ Cooking



■ Industry



Issue: Costs



Source: Gas Daily ANR ML-7



Electricity Price Impact

Rising natural gas prices add to generation costs

| | Natural Gas avg. price per million BTU | Electricity cost per megawatt-hour* |
|--------|---|--|
| 1999 | \$2.25 | \$29.13 |
| 2000 | \$4.34 | \$43.73 |
| 2001 | \$3.75 | \$39.61 |
| 2002 | \$3.05 | \$34.72 |
| JAN 03 | \$5.30 | \$50.43 |
| FEB 03 | \$7.35 | \$64.75 |
| MAR 03 | \$8.06 | \$69.61 |
| APR 03 | \$5.27 | \$50.36 |
| MAY 03 | \$5.78 | \$53.88 |

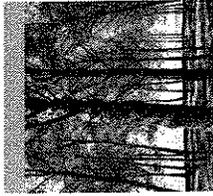
*All-in cost for natural-gas-fueled combined cycle generation; includes costs for owning and operating



a future for renewable energy

At We Energies, we have a long-standing and ongoing commitment to innovative environmental leadership. We believe that renewable energy resources must play an increased role in our electricity supply mix and that developing an infrastructure to support the future of renewable energy must begin today. That's why we've committed to increase the amount of renewable energy our customers use. Our target is to have 5 percent of our retail electricity sales to customers provided by renewable energy in

2011—significantly exceeding what is required by state law. We'll spend an additional \$60 million over 10 years (subject to approval by the Public Service Commission of Wisconsin) to reach our target.



to learn more

Visit us to find out more about We Energies' commitment to the environment.

www.we-energies.com

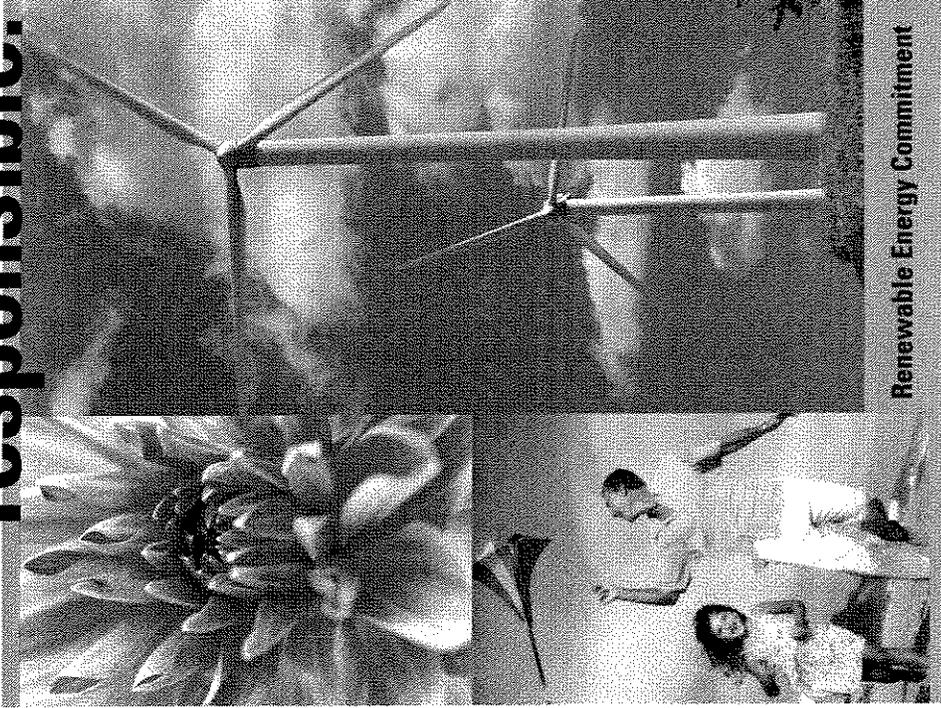
www.we-energyfortomorrow.com

www.we-powerthefuture.com

Send us your thoughts—we would like to hear from you. What ideas or comments do you have on renewable energy? Email us at: contactwe@mail.we-energies.com



natural elements. naturally responsible.



Renewable Energy Commitment

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responsible planning

We Energies will meet the growing demand for energy in Wisconsin. So we worked with customers, businesses, labor unions and environmental groups to develop a plan for new power plants. The result? Our

Power the Future Plan is a plan that's as progressive as it is environmentally responsible. By using diverse fuels, renewable energy and energy efficiency, we'll increase the supply of reliable, affordable electricity, and at the same time lower emissions, resulting in a net positive effect on the environment.

Our plan proposes to build 2,800 megawatts of new electric generation and includes the retirement and replacement of old coal-based generation with new natural gas-and coal-based generation. In addition, our plan also includes a commitment to increasing renewable resources and energy efficiency, and a commitment to carbon dioxide mitigation.

defining renewable energy

To meet our 5% renewable energy target, we'll supply electricity generated from renewable sources defined as a technology that derives electricity from any of the following:

- * fuel cells that use a renewable fuel
- * solar thermal electric or photovoltaic energy
- * wind power
- * small hydropower installations
- * biomass, including landfill gas, municipal sludge, paper mill sludge, and agricultural animal waste, and non-vegetation-based industrial, commercial or household waste

the power of working together

We Energies formed a Renewable Energy Collaborative (REC) in early 2002 to help guide our efforts of We Energies to achieve the 5% target. Organizations that have joined We Energies in the collaborative effort include:

- * Customers First ! Coalition
- * RENEW Wisconsin
- * American Wind Energy Association
- * Citizens' Utility Board
- * Sixteenth Street Community Health Center
- * Wisconsin Energy Conservation Corporation
- * Midwest Renewable Energy Association

The REC will address issues such as technology, regulatory and legislative policies, education, and pricing. Other organizations may be invited to participate in the REC effort as work progresses. The REC is developing a set of guiding principles that take into consideration diverse interests such as costs, technology, feasibility, economic conditions, and policy developments.

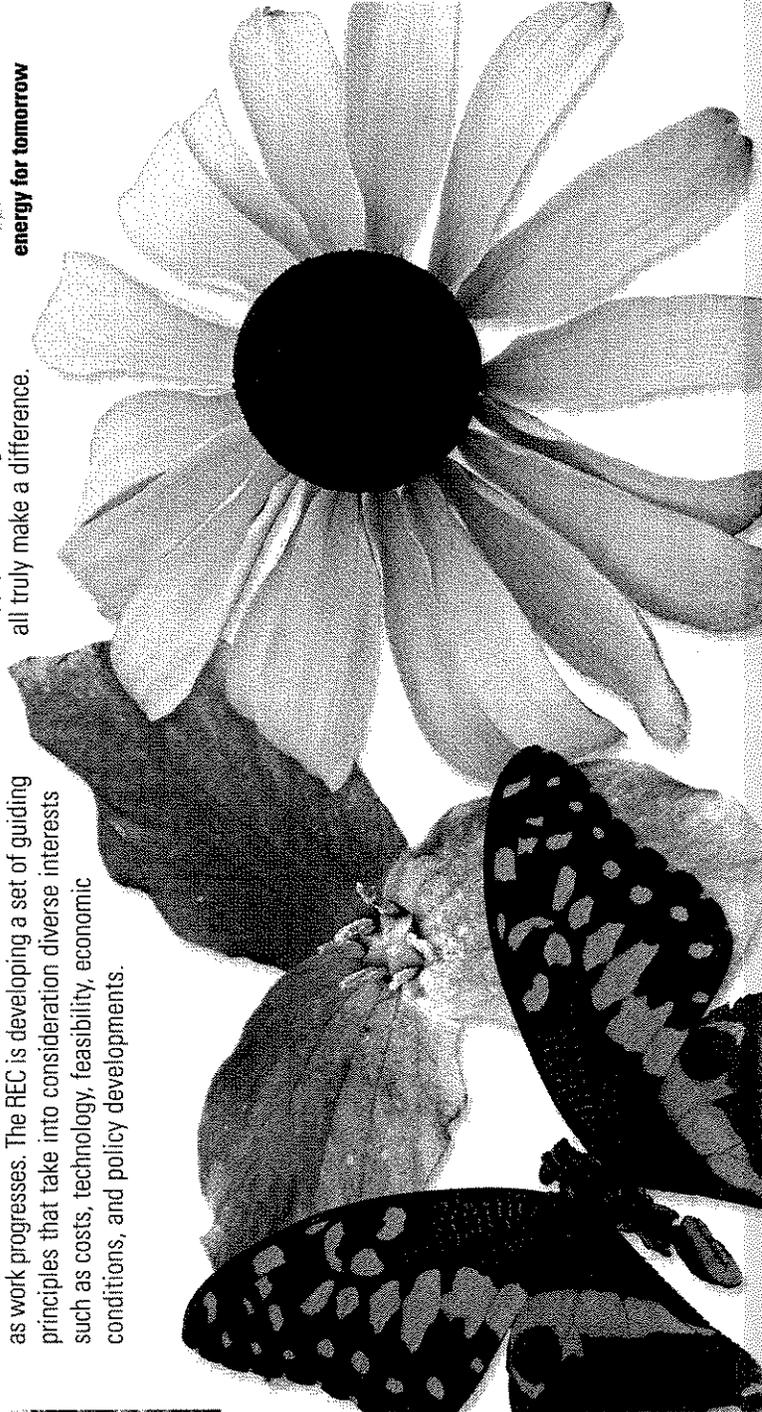
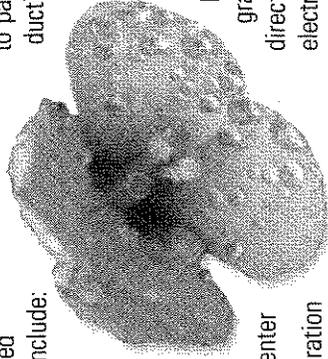
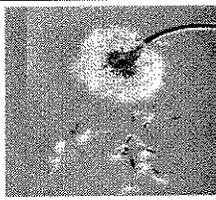
energy for tomorrow™

We Energies' renewable energy commitment builds upon the success of our *energy for tomorrow™* renewable energy program introduced in 1996. Customers who elect to participate can support electricity production from renewable resources through an alternative

pricing plan. With more than 10,000 participants, it's one of the largest and most successful programs of its kind in the country. And it is independently certified by the Center for Renewable Solutions.

By participating in the *energy for tomorrow™* program, customers can make a difference when they direct us to provide 25%, 50% or even 100% of the electricity they use to be from renewable energy sources—far exceeding the 5% that other customers will receive under our commitment. In this way, individual customers can further accelerate the increased use of the renewable energy we supply and through their actions can all truly make a difference.

energy for tomorrow



Power the Future

Oak Creek Plant Expansion

Meeting the growing energy needs of Wisconsin's communities and creating jobs depends on an adequate supply of energy. Now more than ever before, we have the technology and experience to produce the power we need in our state efficiently and economically. And we can do it in a way that reduces emissions and minimizes environmental impacts. As Wisconsin's economy grows, we'll be ready—with a reliable system that delivers reasonably priced, clean energy.

The Oak Creek Power Plant Expansion at a Glance

Three advanced-technology, coal-based units are planned.

- **Capacity:** Each unit is approximately 600 megawatts (1,800 total)
- **Technical and Public Hearings:** Aug. - Sept. 2003
- **Status:** Proposal being reviewed by Public Service Commission of Wisconsin; decision due November 2003
- **Anticipated start of construction of the first unit:** Fourth quarter - 2004 (pending regulatory approvals)
- **In-service:** First unit in 2008; second unit in 2009; third unit in 2011

What is *Power the Future*?

Power the Future is a comprehensive approach to meet Wisconsin's supply and reliability issues in a way that considers both the environment and the economy.

Retire the existing Port Washington coal units.

- Replace with two 500-megawatt natural gas-fueled intermediate load units.

Expand the existing Oak Creek plants.

- Build three coal-fueled baseload units, totaling 1,800 megawatts.

Improve existing power plants.

- Upgrade equipment to improve plant efficiency and reduce emissions.

Strengthen electric delivery systems.

- Reduce power interruptions by upgrading distribution equipment.

Invest in renewable energy and conservation.

- Work toward a target of 5% of our retail electricity sales from renewable energy sources by 2011.
- Promote energy efficiency by financing programs and services.

What types of facilities are planned at Oak Creek?

The new Oak Creek units will be equipped with modern pollution control technology and as a result, will make this facility one of the cleanest plants of its type in the country.

- **Two 600-megawatt Supercritical Pulverized Coal Units.** These units increase efficiency by operating at higher pressures and temperatures. The advanced technology results in effective emission reduction.
- **One 600-megawatt Coal Gasification Unit.** The design of this unit uses a combination of chemical processes at elevated pressures to create a gas fuel cleansed of sulfur and mercury.

Equipment upgrades at existing coal-based plants, including Oak Creek, will improve efficiency and reduce emissions up to 65% system-wide.

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Why is coal the fuel choice for this facility?

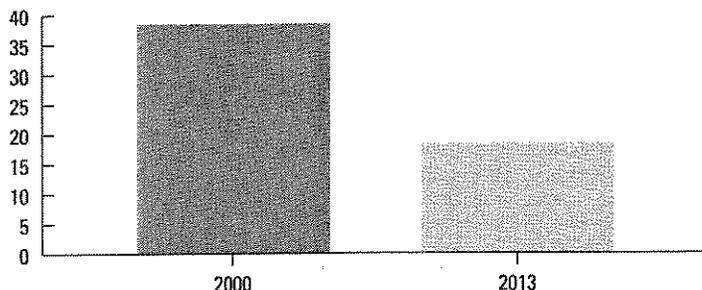
Oak Creek is a baseload plant, which means it operates almost continuously. Coal is the best choice for baseload operations for the following reasons:

- **Technology.** Improvements in coal combustion technology and environmental controls make the use of coal both an environmentally and economically sound choice.
- **Supply.** Reliable supplies of coal are readily available and proven reserves exceed 200 years at present consumption levels.
- **Price Stability.** Relatively stable prices are expected in the long-term. Coal prices have increased only about 4 percent in the last 20 years. Producing electricity using coal is less costly than using natural gas.

What is the environmental impact?

When the Power the Future initiative is complete, including the expansion at Oak Creek, system-wide emissions will be reduced about 65% from year 2000 levels. Oak Creek emissions will be down about 50%.

Oak Creek Power Plant Emissions (1,000 tons)



The advances in technology have made it possible to achieve significant emission reductions while at the same time generating about 59% more electricity.

What about the existing Oak Creek units?

Our original Power the Future proposal announced in 2000 included voluntary environmental improvements at our existing coal-based facilities including Oak Creek. The commitments we made for investing in emission control equipment have resulted in formalized agreements with the Wisconsin Department of Natural Resources and more recently with the U.S. Environmental Protection Agency. These enforceable agreements ensure certainty that our environmental initiatives will fully meet today's and future clean air regulations, and more importantly, will mean cleaner air for southeast Wisconsin.

"The bottom line is that this is a very good agreement for air quality in southeastern Wisconsin."

Lloyd Eagan, Air Administrator Wisconsin Department of Natural Resources, April 29, 2003

Can you tell me about health impacts?

Health concerns related to the Oak Creek expansion are understandable. Experts in the field of epidemiology (the study of disease patterns) have reviewed studies looking at people who lived near coal-fueled power plants. Plants equipped with effective pollution controls appear to neither cause nor aggravate breathing problems. (People with respiratory conditions who lived close to outdated plants—those with limited or no pollution controls—sometimes had their conditions aggravated by emissions from the plant. These plants were often located in valleys where the pollutants could become trapped.)

The air we breathe today is actually cleaner than 30 years ago. Health experts believe that factors other than outdoor air is contributing to increases in asthma cases.

What support do you have from local officials?

The City of Oak Creek Common Council voted in favor of an environmental and economic agreement on the plant expansion proposal.

The agreement calls for enforceable and monitored emission limits on all of the generating facilities, along with a baseline emission level of 38,400 tons (the 2000 level).

The Oak Creek expansion will mean 1,200 new construction jobs for nearly nine years, \$860 million in wages and a total economic impact of more than \$1.9 billion."

Economics Research Associates 2003 Study

What else should I know about this project?

- It will create about 300 well-paying, permanent jobs.
- The design includes a recreation trail connecting Bender Park to Cliffside Park.
- It also includes an educational center for community and school use.
- Train noise will be reduced using a full railroad loop. Over/underpasses will be built at critical locations to reduce traffic congestion.
- Coal piles will be moved from the lake and active coal piles will be stored in a shed to control dust.
- The design includes earthen berms to preserve natural views and deflect noise.
- Community-based oversight groups will monitor the project once it is approved.
- The installation of two air monitoring stations will collect emission data that will be shared with the community.

All plans described above are subject to change pending review and approval by state and federal regulatory agencies.

Please share your thoughts and questions by calling Linda Sodemann at 414-571-3570 or 1-800-637-0642. By email: linda.sodemann@we-energies.com. For details on the topics covered here, and the most current information about the Oak Creek Expansion, please visit us at www.powerthefuture.net.

Power the Future

Coal-fueled Power Plants and Mercury

The nature of mercury

Mercury is a naturally occurring element that is found in oceans, rocks and soil. It can become airborne and redistributed throughout the environment when rocks erode, volcanoes erupt and soil decomposes. It's been around for thousands of years and has been used for a wide variety of purposes.

Human activity and mercury

In addition to the release of mercury into the environment as a result of natural activity, mercury also is released from sources related to human activity. It is used in small amounts in household and commercial products, such as fluorescent lights, thermostats and thermometers, as well as in industrial processes. Incinerators, some manufacturing plants, hospitals, dental offices, schools, and even homes are sources of mercury releases.

Mercury also can become airborne when coal is burned to produce electricity. Once in the air, certain forms of mercury can return to the earth with rain and snow, settling on soils or water bodies. (But other forms of mercury can remain airborne for months.)

Mercury and power generation

Trace amounts of mercury are present in coal and oil. Consequently, when these fuels are used to generate electricity, some of this mercury is released into the air.

Power plant emissions account for about one-third of the mercury emitted into the air by industrial sources in the U.S., but accounts for only about 1% to 2% of the total mercury emitted by global human activities.

Researchers are trying to determine how much mercury from power plants actually enters the aquatic environments, as well as how much of it actually enters the aquatic food chain. This is a very difficult task because mercury has so many sources.

Health effects of mercury

Like a lot of pollutants, mercury and its many compounds can be toxic to humans at certain levels. Mercury is present in the air and water, but at concentrations that are not considered a health threat.

When certain forms of airborne mercury settle in aquatic systems, the mercury can be converted into a form (methyl-mercury) that accumulates in fish, which then can be absorbed by humans who eat these fish. Since the early 1980s, the Wisconsin Department of Natural Resources (WDNR) has issued annual fish advisories that offer guidance for the safe consumption of fish caught in state waters.

A Perspective: Mercury in the Environment

| | <u>Tons</u> |
|---|-------------|
| In the global atmosphere (all sources—natural and human) | 6,000 |
| USA emits each year (human activities) | 150 |
| Asia emits each year (human activities) | 1,200 |
| All Wisconsin utilities emit each year | 1+ |
| Oak Creek Power Plant in 2000 | 175 pounds |

Source: US Environmental Protection Agency

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Health experts are trying to determine a safe level for mercury consumption given the fact that mercury and its toxic forms are naturally occurring substances, and that mercury, in varying amounts is present in all fish. Further, even people who consume large amounts of fish may not be at an increased risk of health effects. A study of more than 700 mother/child pairs conducted in the Seychelles Islands (a group of islands in the western Indian Ocean) showed no health effects even though this population eats ocean fish nearly every day.

Routine mercury exposure among the general population in North America today is considered low. Humans, other mammals and birds have evolved defense mechanisms to rid the body of small amounts of mercury. However, too much mercury can lead to many health problems, including a form of palsy, which can develop in an infant fetus when the mother has been exposed to very high levels of mercury. Mercury poisoning can be fatal in extreme cases of very high exposure. The severe instances of mercury poisoning that are frequently cited have occurred when individuals have been directly exposed to high levels of mercury as a result of consuming contaminated grains (mercury has been used as a fungicide) or fish from waters where liquid mercury spills have occurred.

Fish advisories issued by state and federal agencies provide guidance for fish and seafood consumption, particularly for pregnant women. The U.S. Environmental Protection Agency (EPA) and the U.S. Food and Drug Administration believe that eating 1-4 meals per week of most commercial fish is not likely to pose risks of adverse health effects for any individuals, including pregnant women and their young children.

Trends in mercury levels in the ecosystem

Mercury levels in the Midwest region's lakes, including Lake Michigan and Lake Superior, appear to be on the decline due to the decreased use of mercury. For example, since 1980, We Energies has voluntarily reduced the use of mercury-containing equipment in power plants by of 10,000 pounds. This declining trend is occurring despite an increase in coal use during the past several decades.

Power Plant Emissions

Measurements at a number of U.S. power plants suggest that existing emission control devices for particulates and sulfur dioxide capture on average 40% of the mercury present in the emissions.

Action by We Energies

We have been actively involved in research and related efforts to advance mercury control technologies for power plants and to develop reasonable state and federal mercury control rules. We have research projects underway at our Pleasant Prairie and Presque Isle (Marquette, Mich.) power plants that will provide valuable information on mercury controls to the entire electric power industry.

We have committed to reduce mercury emissions from our existing power plants by 10% over the next five years and by 50% over the next 10 years as part of our integrated air quality strategy. To accomplish these reductions, we have adopted a solution that combines various control technologies in order to achieve reductions for multiple emissions, including sulfur dioxide, nitrogen oxides and greenhouse gases.

These commitments apply to the coal units that we operate today and were made in advance of any state or federal mercury reduction requirements. In addition to reductions from existing plants, mercury emissions will be controlled by at least 80% at our new units proposed for Oak Creek. These units are subject to federal emissions standards. We will meet these standards through the combination of the type of coal used and advanced emission control equipment.

Power the Future

We Energies agreement with EPA means reduced emissions for the Oak Creek Power Plant

A historic agreement between We Energies, the Environmental Protection Agency (EPA) and the U.S. Department of Justice announced April 29, 2003, will lead to improved air quality by reducing emissions in southeast Wisconsin and across the entire We Energies generation system.

The agreement includes an emissions cap that was previously negotiated between the City of Oak Creek and We Energies for the Oak Creek Power Plant. Capping emissions at 2000 levels at the Oak Creek Power Plant is now enforceable by the EPA and the federal courts.

We Energies will achieve emission reductions by investing an estimated \$600 million to install the best available control technologies on the existing Oak Creek units.

Actions include:

- **Sulfur Dioxide Emissions:** Scrubbers will be installed to remove at least 93 percent of the sulfur dioxide emissions.
- **Nitrogen Oxide Emissions:** Equipment will be installed to reduce nitrogen oxides to levels that would be achieved by newly constructed units.
- **Unit Retirements:** The agreement allows the company to consider taking Oak Creek Units 5 and 6 out of service, in lieu of control equipment installations.

System-wide results will be:

- Sulfur dioxide emissions will be reduced by approximately 68 percent below 2000 levels.
- Total emissions of nitrogen oxides will be reduced by approximately 65 percent below 2000 levels.
- Mercury emissions will be cut approximately 55 percent from 2000 levels as a result of the EPA agreement and previous commitments made with the Wisconsin Department of Natural Resources in Sept. 2002 under the Multi-Emission Cooperative Agreement (MECA).

"The bottom line is that this is a very good agreement for air quality in southeastern Wisconsin."

Lloyd Eagan, Air Administrator
Wisconsin Department of Natural Resources
April 29, 2003

The majority of the sulfur dioxide (98 percent) and nitrogen oxides (85 percent) emission reductions will occur in southeast Wisconsin. These significant reductions will facilitate the State of Wisconsin achieving attainment with the new 8-hour ozone and fine particulate standards.

For more information, please visit
www.powerthefuture.net

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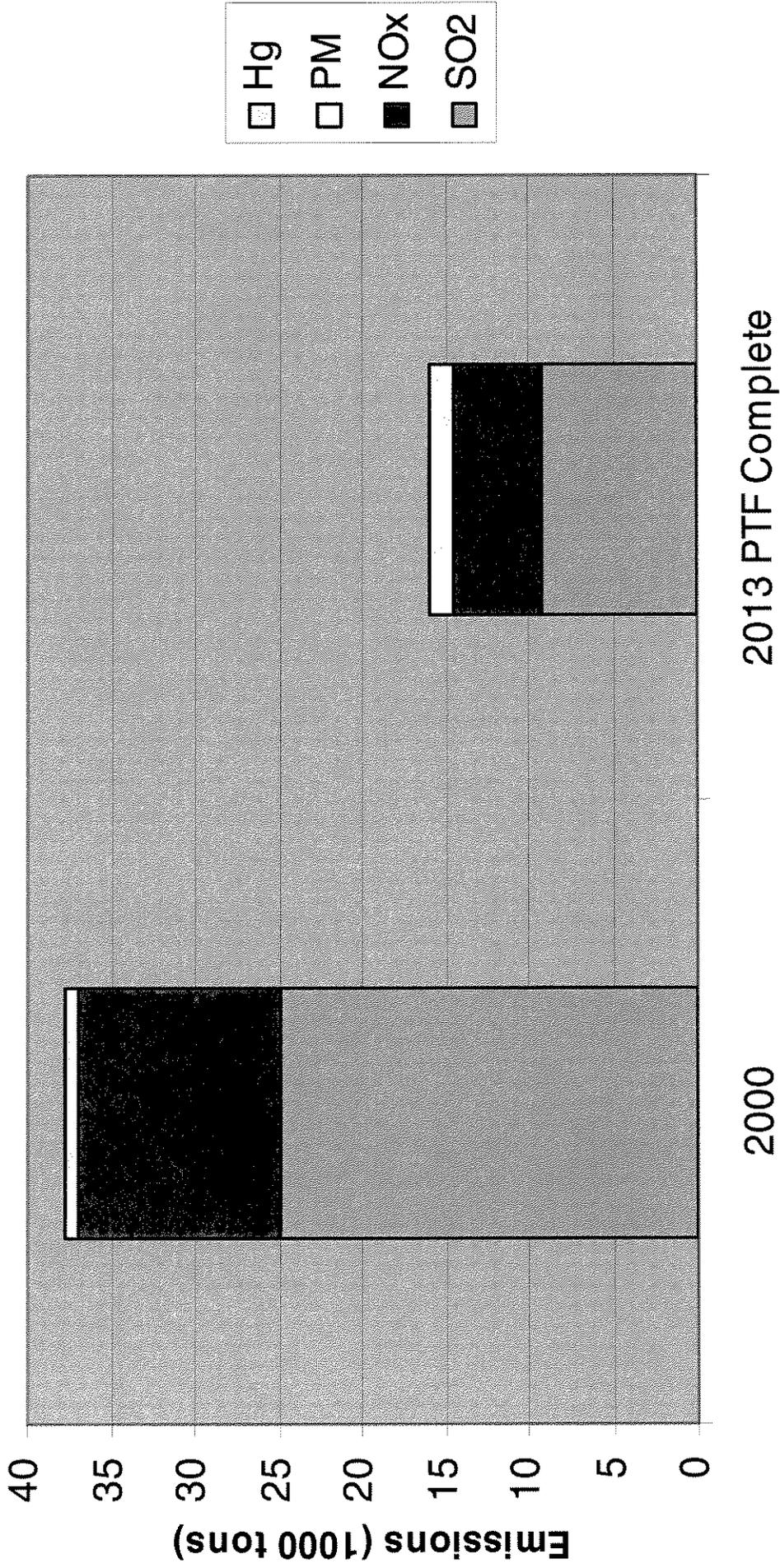
Environmental Performance

Modern coal-fueled power plants reduce emissions much more effectively than those built in the past.

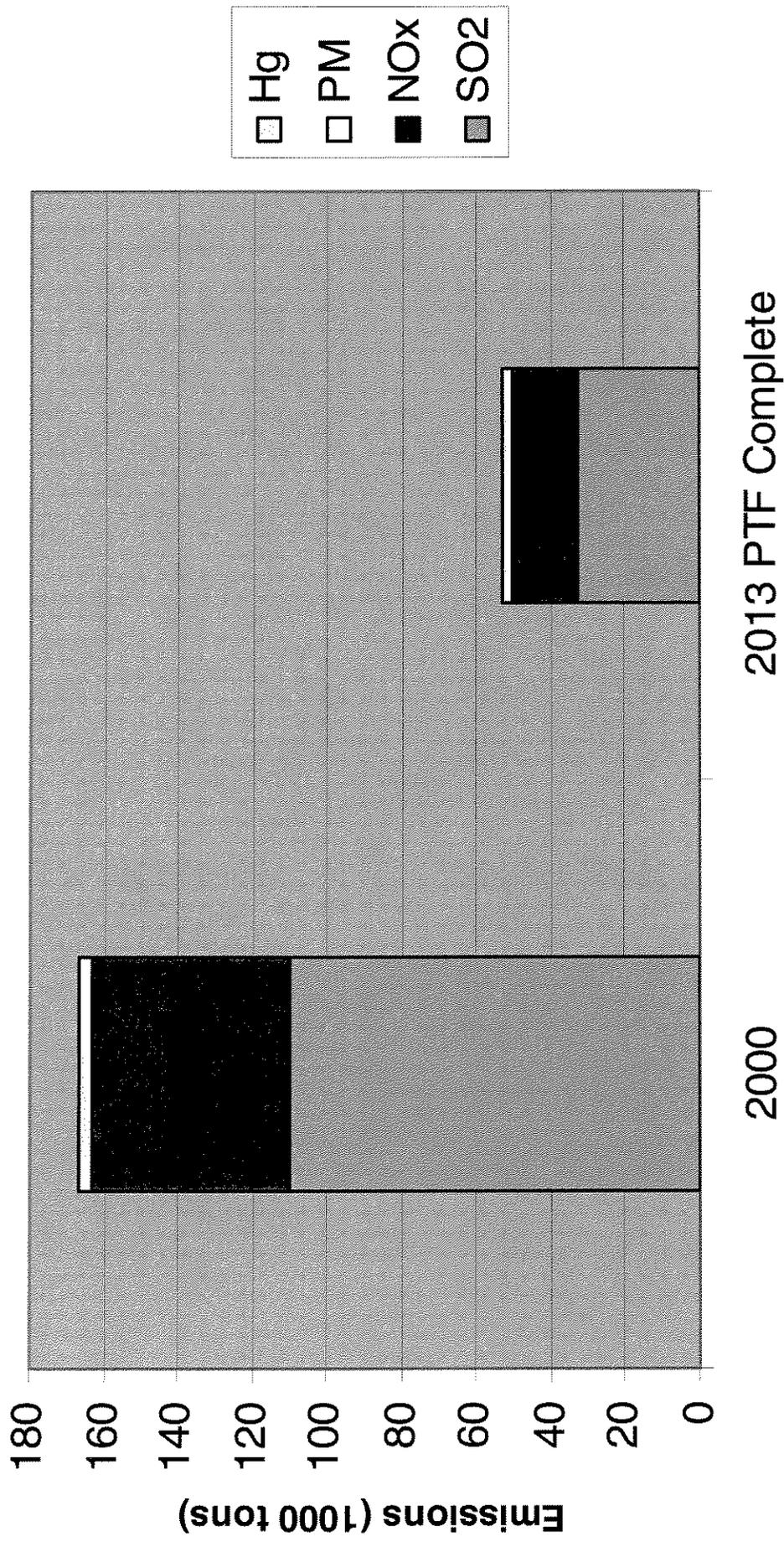
- 99.9% of particulate matter
- 95% of sulfur dioxide
- 85% of nitrogen oxide
- 80% of mercury



Oak Creek Emissions



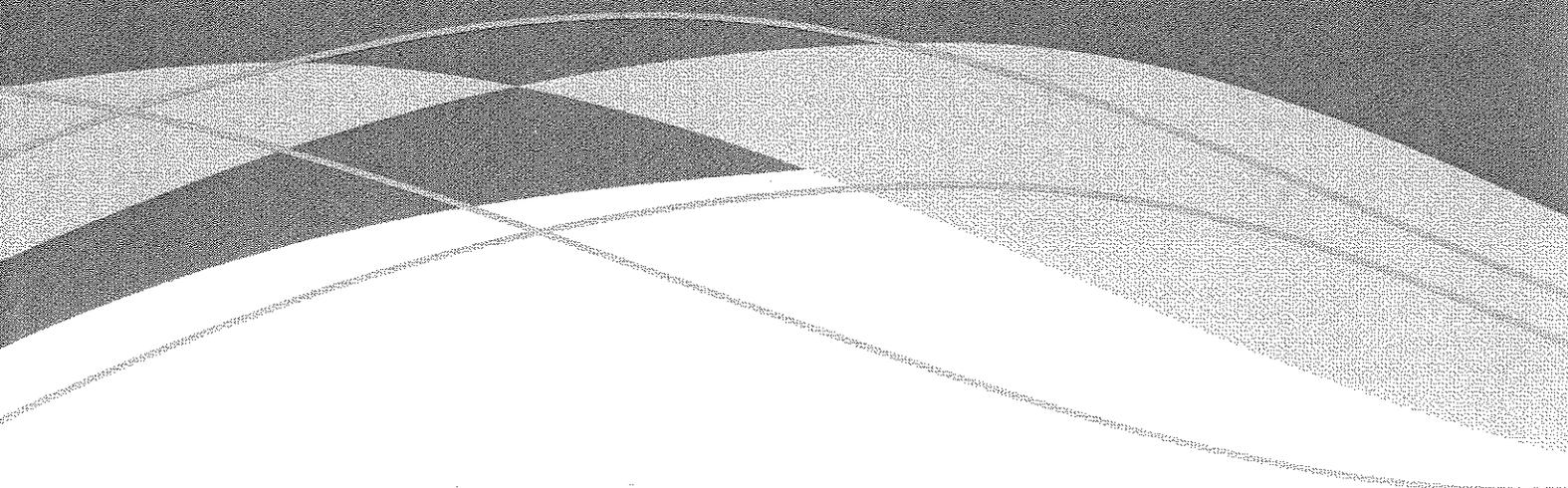
We Energies System Emissions



Mercury

- Mercury emissions will be reduced by approximately 55% from 2000 levels as a result of a recent agreement with the Environmental Protection Agency and an agreement made in 2002 with the Wisconsin Department of Natural Resources known as the Multi-Emission Cooperative Agreement.
- We Energies continues to be a national leader in researching and developing effective mercury emission control techniques. One of nation's first full-scale tests of a new mercury-specific control technology, called sorbent technology, was conducted at our Pleasant Prairie Power Plant. The test provided information about the capabilities and limits of this developing new technology. We are in the process of implementing follow-up testing and further development of one of our other power plants. Our initial testing experience provides an important basis for continuing to advance the commercialization of effective mercury controls for power plant application.





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