

information resources

Catalog 2002



Internet Resources ♦ General Interest Publications ♦ Technical Reports
Conference Papers ♦ Journal Articles ♦ Book Chapters ♦ Patents

About the Catalog

The National Renewable Energy Laboratory's (NREL) ninth annual *Information Resources Catalog* can help keep you up-to-date on the research, development, opportunities, and available technologies in energy efficiency and renewable energy. The catalog includes five main sections with entries grouped according to subject area.

Most of the publications in this catalog—and many others on energy efficiency and renewable energy—can be found on Web sites developed and/or maintained by NREL. The first section provides a listing of these “Internet Resources,” which is especially helpful if you’d like to access information quickly. You can also access the latest information using these resources. A good place to start a search for information is on NREL’s Publications Database at www.nrel.gov/publications/.

The second section provides brief descriptions of the “General Interest Publications” produced by NREL during its 2002 fiscal year. These publications highlight the advances in energy efficiency and renewable energy technologies, as well as the NREL and U.S. Department of Energy (DOE) programs that encourage their advancement and use.

The last three sections in the catalogue—“Technical Reports,” “Conference Papers, Journal Articles, Book Chapters,” and “Patents”—can help the research community and industry stay updated on the latest innovations from NREL’s labs.

We hope you find this catalog useful and informative.

About the National Renewable Energy Laboratory

NREL is DOE’s premier laboratory for renewable energy and energy efficiency research, development, and deployment. The Laboratory is a national resource committed to leadership, excellence, and innovation in renewable energy and related technologies.

NREL conducts research in photovoltaics, wind energy, building energy efficiency, biofuels, hybrid vehicles, fuels utilization, biomass power, hydrogen, concentrating solar power, geothermal power, and superconductivity. Advances made in these research areas enable the private sector to make informed choices from a number of energy options.

Key to NREL’s mission is facilitating the transfer of these technologies to private industry for commercialization. We do this by cooperating with industry through cost-shared agreements, collaborating with universities and other researchers, and making facilities available for experiments, analyses, and proprietary studies.

NREL is managed for DOE by Midwest Research Institute, Battelle, and Bechtel.

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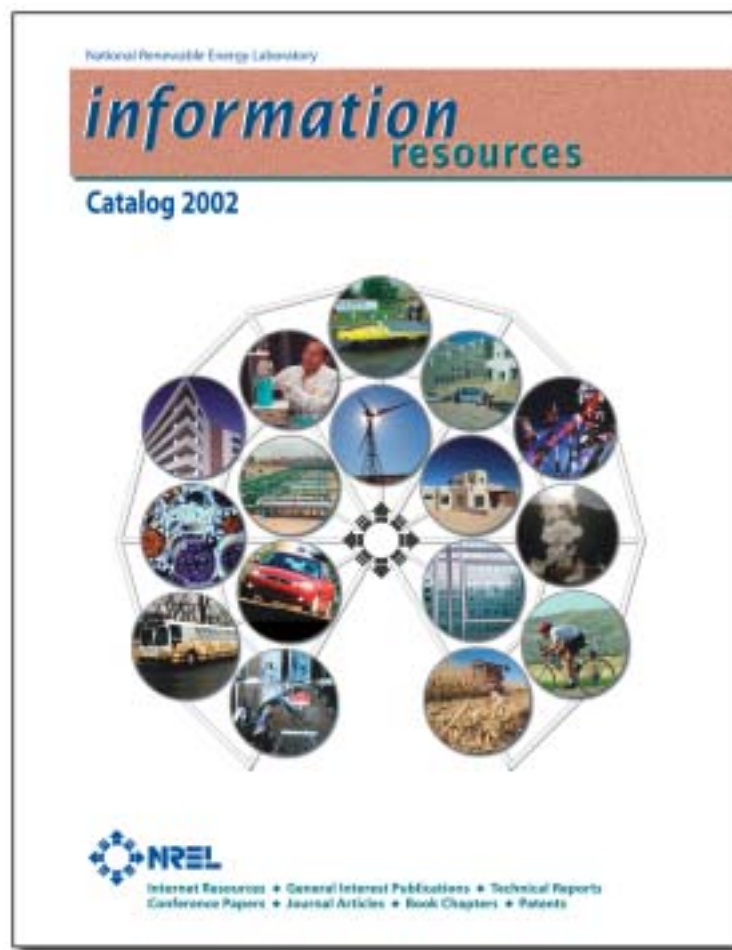


PHOTO CREDITS: (Clockwise, outside) Nebraska Soybean Board, PIX04231; Paul Roessler, PIX01726; Warren Gretz, PIX00132; Warren Gretz, PIX00075; Mike Linenberger, PIX02589; Warren Gretz, PIX00171; Coherent Inc. Laser Group, PIX06354; David Parsons, PIX01047; David Parsons, PIX04075. (Inside): Schatz Energy Research Center, PIX03973; Ford Motor Company, PIX05471; Warren Gretz, PIX00453; David Parsons, PIX00904; Warren Gretz, PIX03083; Pamm McFadden, PIX02920; Warren Gretz, PIX02268.

Internet Resources



The sites listed below provide information on many energy efficiency and renewable energy technologies. New Internet sites are created regularly, so be sure to visit these Web pages often for new and updated information.

National Renewable Energy Laboratory (NREL)—<http://www.nrel.gov/>

Since its inception in 1977, NREL's mission has been to develop energy efficiency and renewable energy technologies and transfer these technologies to the private sector. The Web site provides information about NREL's technologies, online resources, and programs.

Research and Technology—NREL's research activities and expertise help reduce the cost and increase the use of renewable energy and energy efficiency technologies.

Basic Sciences and Materials—<http://www.nrel.gov/st-bsm.html>

Bioenergy—<http://www.nrel.gov/bioenergy.html>

Buildings and Thermal Systems—http://www.nrel.gov/buildings_thermal/

Electricity Technologies—<http://www.nrel.gov/st-et.html>

Energy Analysis—<http://www.nrel.gov/analysis/>

Measurements and Testing—<http://www.nrel.gov/st-mt.html>

Photovoltaics—<http://www.nrel.gov/photovoltaics.html>

Renewable Energy Resources—<http://redc.nrel.gov/>

Transportation—<http://www.ctts.nrel.gov/>

Wind Energy—<http://www.nrel.gov/wind/>

National and International Applications—NREL's Deployment Programs help promote the use of renewable energy and energy efficiency applications. <http://www.nrel.gov/applications.html>

Technology Transfer—Contact the NREL Technology Transfer team to license an NREL technology, cooperate in or sponsor research with NREL, start or expand a business using renewable energy technologies, or use NREL facilities for R&D. <http://www.nrel.gov/technologytransfer/>

Clean Energy Basics—This Web site provides an online primer on energy efficiency and renewable energy. http://www.nrel.gov/clean_energy/

Education Programs—NREL's Science and Technology Education Programs partner with students, teachers, faculty, and schools so that students can develop science and math excellence to advance sustainable energy technologies. <http://www.nrel.gov/education/>

Online Resources—NREL's databases provide documents and digital photographs of renewable energy and energy efficiency technologies.

NREL Publications—<http://www.nrel.gov/publications/>

PIX—Online Photographic Library—<http://www.nrel.gov/data/pix/pix.html>

Energy Efficiency and Renewable Energy Web Site—<http://www.eren.doe.gov/>

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy Web site contains documents from DOE programs and maintains links to other government, education, industry association, and international organization Web sites. It offers a robust search capability and resources for energy professionals and consumers.

Technologies

Bioenergy—<http://www.eren.doe.gov/RE/bioenergy.html>
Buildings—<http://www.eren.doe.gov/EE/buildings.html>
Geothermal—<http://www.eren.doe.gov/RE/geothermal.html>
Hydrogen—<http://www.eren.doe.gov/RE/hydrogen.html>
Hydropower—<http://www.eren.doe.gov/RE/hydropower.html>
Industry—<http://www.eren.doe.gov/EE/industry.html>
Ocean—<http://www.eren.doe.gov/RE/ocean.html>
Power—<http://www.eren.doe.gov/EE/power.html>
Solar—<http://www.eren.doe.gov/RE/solar.html>
Transportation—<http://www.eren.doe.gov/EE/transportation.html>
Wind—<http://www.eren.doe.gov/RE/wind.html>

Specialized Resource

Ask an Energy Expert—<http://www.eren.doe.gov/askanenergyexpert/>

Topics

Education—<http://www.eren.doe.gov/education/>
Financing—<http://www.eren.doe.gov/financing/>
News—<http://www.eren.doe.gov/news/>
Solicitations—<http://www.eren.doe.gov/solicitations.html>

Users

Consumers—<http://www.eren.doe.gov/consumerinfo/>
Kids—<http://www.eren.doe.gov/kids/>
States—<http://www.eren.doe.gov/states/>

Related Information

DOE Headquarters—<http://www.energy.gov/>
DOE Regional Support Offices—<http://www.eren.doe.gov/rso.html>
DOE Golden Field Office—<http://www.golden.doe.gov/>
DOE Office of Scientific and Technical Information (OSTI)—Energy Science and Technology Virtual Library—<http://www.osti.gov/>



The following publications are grouped according to subject matter. These documents contain information that is generally nontechnical in nature and intended for a wide audience. Unless otherwise noted, general interest publications are available in limited quantities from NREL's Document Distribution Service at (303) 275-4363 (phone), or Document_Distribution@nrel.gov (e-mail). These documents can be accessed in PDF format through the Publications database at www.nrel.gov/publications.

Alternative Fuels

Alternative Fuels in Public Transit: A Match Made on the Road. Clean Cities Alternative Fuel Information Series

(Brochure). March 2002; 8 pp. This brochure addresses alternative fuel modes of transportation for public transit, challenges, fuels, infrastructure, cost studies, guidance, and resources.
Order no. BR-540-28795.

Biofuels News—Fall 2001, Vol. 4, No. 3

(Newsletter). November 2001; 4 pp. Biofuels News is a quarterly publication produced by the Department of Energy's Biofuels Program. This issue contains information about a July/August 2001 Morgan and Myers survey of 400 American farmers in order to determine their willingness to sell their corn stover to make cellulosic ethanol.
Order no. DOE/GO-102001-1483.

Biofuels News—Spring 2002, Vol. 5, No. 1 (Newsletter). March 2002; 4 pp. This issue contains information on DOE's Enzyme Sugar Platform Project, the Enzyme Sugar Project's stage-gate review, the Biomass R&D Advisory Committee's recommendations for biofuels development, and biofuels and homeland security.
Order no. DOE/GO-102002-1548.

Voluntary Participation Drives Oklahoma's Coalitions. Clean Cities Alternative Fuel Information Series: Focus on Coalitions Fact Sheet. May 2002; 2 pp. This fact sheet describes the Oklahoma and Tulsa Clean Cities Coalitions and their commitment to the alternative fuel industry.
Order no. FS-540-32182.

Buildings

Advanced Air Distribution Strategies Improve Performance of Palm Harbor Homes:

Building America System Fact Sheet. December 2001; 2 pp. Palm Harbor Homes (PHH), one of the nation's largest producers of manufactured homes, and Building America's Industrialized Housing Partnership have teamed together to develop air-distribution and duct-sealing strategies that reduce energy use and increase comfort.
Order no. FS-550-30540.

Basement Insulation. Office of Building Technology, State and Community Programs (BTS) Technology Fact Sheet.

January 2002; 4 pp. This series of technology fact sheets was created to help housing designers and builders adopt a whole-house design approach and energy efficient design practices. The fact sheet advises how to create a comfortable basement environment that is free of moisture problems and easy to condition.
Order no. DOE/GO-102002-0776.

Building America Partner Program: A Program of the Home Builders Association of Central New Mexico

(Brochure). October 2001; 2 pp. This tri-fold brochure introduces the Building America Partner Program in central New Mexico and encourages home builders and home owners to participate.
Order no. FS-550-30858.

Buildings for the 21st Century, Fall 2001. Office of Building Technology, State and Community Programs (BTS)

Newsletter. November 2001; 4 pp. The Buildings for the 21st Century newsletter is produced by the Office of Building Technology, State and Community Programs and contains information on building programs, events, products, and initiatives, with a focus on energy efficiency and renewable energy. The fall issue includes information on weatherization, Boise's geothermal heating system, the BTS Core Databook, the Solar Decathlon, a Rebuild America partnership, the BigHorn Home Improvement Center, AIA's Top Ten Buildings, a sub-CFL procurement program, the U.S. investment in energy efficient research, new efficiency standards, PNNL's building software, and a calendar of meetings and conferences.
Order no. DOE/GO-102001-1468.

Buildings for the 21st Century, Spring 2002. Office of Building Technology, State and Community Programs (BTS)

Newsletter. April 2002; 4 pp. The spring issue contains information on a series of high-performance building brochures, the State Energy Program, a new modular and manufactured home, a new buildings database, solid-state ceramic lighting, weatherization, simplified Web site addresses, a Colorado home builder, and upcoming events and meetings. Order no. DOE/GO-102002-1582.

Buildings for the 21st Century, Winter 2002. Office of Building Technology, State and Community Programs (BTS)

Newsletter. February 2002; 4 pp. The winter issue contains information on energy efficient health care design, solid state lighting, Brookhaven National Laboratory, school design guidelines, E-News, Energy Star, DOE energy awards, and upcoming events and meetings. Order no. DOE/GO-102002-1518.

Denver Federal Center Saves Energy, Forges Partnerships Through Super ESPC. Federal Energy Management Program (FEMP) ESPC Case Study

(Fact Sheet). January 2002; 2 pp. The General Services Administration is replacing aging heating and cooling equipment and reducing maintenance costs at the 670-acre Denver Federal Center (DFC), and also helping the government save about \$450,000 in annual energy costs, conserve nearly 11 million gallons of water per year, and reduce annual carbon dioxide emissions by 15.9 million pounds, all by making use of the Department of Energy's Super Energy Savings Performance Contracts (Super ESPCs) at the DFC. Under these contracts, an energy services provider pays the

up-front project costs and is then repaid over the contract's term out of the resulting energy cost savings. Order no. DOE/GO-102002-1470.

Department of Energy's Pantex Plant Saves \$10 Million in Energy Costs. Federal Energy Management Program (FEMP) ESPC Case Study

(Fact Sheet). November 2001; 2 pp. This case study describes how the U.S. Department of Energy's Pantex Plant in Amarillo, Texas, will save approximately \$10 million in energy costs over the next 18 years, thanks to a DOE Super Energy Savings Performance Contract (Super ESPC) delivery order for energy efficiency improvements. The delivery order calls for a new, state-of-the-art energy management control system and a new water/steam piping system, which will be purchased and installed by the contracting energy services company (ESCO). The ESCO will then be repaid over the life of the contract out of the plant's resulting energy cost savings. Order no. DOE/GO-102001-1185.

DOE's Energy Savings Performance Contracts Stretch Budgets in the Bureau of Indian Affairs. Federal Energy Management Program (FEMP) ESPC Case Study

(Fact Sheet). November 2001; 2 pp. This case study describes how one Bureau of Indian Affairs facility—the Sherman Indian School in Riverside, California—is cutting its energy costs with badly needed new lighting and heating and cooling equipment, and installing a new photovoltaic energy system, under a DOE Super Energy Savings Performance Contract (Super ESPC), in which the energy services provider pays up-front costs and is repaid out of the facility's resulting energy cost savings. Order no. DOE/GO-102001-1469.

Energy Design Guidelines for High Performance Schools

(Booklets). School districts around the country are finding that the smart energy choices can help them save money and provide healthier, more effective learning environments. By incorporating energy improvements into their construction or renovation plans, schools can significantly reduce energy consumption and costs. These savings can then be redirected to educational needs such as additional teachers, instructional materials, or new computers. These design guidelines outline high performance principles for the new or retrofit design of your K-12 school. By incorporating these principles, you can create a building that is both energy and resource efficient. Work performed by Innovative Designs, Raleigh, North Carolina.

Energy Design Guidelines for High Performance Schools: Cold and Humid Climates.

June 2002; 88 pp. Order no. DOE/GO-102002-1542.

Energy Design Guidelines for High Performance Schools: Cool and Dry Climates.

June 2002; 88 pp. Order no. DOE/GO-102002-1543.

Energy Design Guidelines for High Performance Schools: Cool and Humid Climates.

June 2002; 90 pp. Order no. DOE/GO-102002-1539.

Energy Design Guidelines for High Performance Schools: Hot and Dry Climates (CD-ROM).

March 2002. Order no. DOE/GO-102002-1566.

Energy Design Guidelines for High Performance Schools: Hot and Dry Climates (Revision). June 2002; 88 pp. Order no. DOE/GO-102002-1592.

Energy Design Guidelines for High Performance Schools: Hot and Humid Climates. June 2002; 88 pp. Order no. DOE/GO-102002-1541.

Energy Design Guidelines for High Performance Schools: Temperate and Humid Climates. June 2002; 90 pp. Order no. DOE/GO-102002-1540.

EnergyPlus: Next Generation Energy Simulation Software for Building Design (Brochure). August 2002; 2 pp. This trifold brochure provides an overview of EnergyPlus, an energy simulation software for building design, and provides answers to frequently asked questions about the software. Order no. BR-550-32648.

Federal Energy Management Program: Program Overview. Federal Energy Management Program (FEMP) Brochure. February 2002; 4 pp. This overview describes how the Department of Energy's FEMP works to reduce the cost and environmental impact of the Federal government by advancing energy efficiency and water conservation, promoting the use of distributed and renewable energy, and improving utility management decisions at Federal sites. Despite energy bills that total approximately \$4 billion annually for Federal buildings and other facilities, the government's building-related energy costs have actually dropped more than 20% per square foot since 1985, thanks in large part to the work FEMP does. Order no. DOE/GO-102002-1333.

Fred Hutchinson Cancer Research Center, Seattle, Washington: Laboratories for the 21st Century Case Studies (Revision) (Brochure). March 2002; 8 pp. This case study was prepared by participants in the Laboratories for the 21st Century program, a joint endeavor of the U.S. Environmental Protection Agency and the U.S. Department of Energy's Federal Energy Management Program. The goal of this program is to foster greater energy efficiency in new laboratory buildings for both the public and the private sectors. Retrofits of existing laboratories are also encouraged. The energy-efficient features of the laboratories in the Fred Hutchinson Cancer Research Center complex in Seattle, Washington, include extensive use of efficient lighting, variable-air-volume controls, variable-speed drives, motion sensors, and high-efficiency chillers and motors. With about 532,000 gross square feet, the complex is estimated to use 33% less electrical energy than most traditional research facilities consume because of its energy-efficient design and features. Order no. DOE/GO-102002-1571.

Heating and Cooling Equipment Selection. Office of Building Technology, State and Community Programs (BTS) Technology Fact Sheet. January 2002; 4 pp. This series of technology fact sheets was created to help housing designers and builders adopt a whole-house design approach and energy efficient design practices. This fact sheet helps people choose the correct equipment for heating and cooling to reduce initial costs, increase homeowner comfort, increase operating efficiency, and greatly reduce utility costs. Order no. DOE/GO-102002-0779.

Highlighting High Performance: Clearview Elementary School, Hanover, Pennsylvania. Office of Building Technology, State and Community Programs (BTS) Brochure. August 2002; 4 pp. This case study details high performance building features of Clearview Elementary School in Hanover, Pennsylvania. Order no. DOE/GO-102002-1612.

Highlighting High Performance: Department of Environmental Protection; Cambria Office Building, Ebensburg, Pennsylvania. Office of Building Technology, State and Community Programs (BTS) Brochure. November 2001; 4 pp. The 36,000-square-foot Cambria Office building in Ebensburg, Pennsylvania houses the Pennsylvania Department of Environmental Protection. Designers of the energy-efficient building used integrated design to minimize energy use and pollution created in the production of the materials they used, and reduced the overall pollution and environmental impact the building will create over its lifetime. The building also employs daylighting and renewable energy technologies. Order no. DOE/GO-102001-1353.

Highlighting High Performance: Four Times Square. Office of Building Technology, State and Community Programs (BTS) Brochure. November 2001; 4 pp. Four Times Square is a 48-story environmentally responsible building in New York City. Developed by the Durst Organization, the building is the first project of its size to adopt standards for energy efficiency, indoor ecology, sustainable materials, and responsible construction, operations, and maintenance procedures. Order no. DOE/GO-102001-1352.

Highlighting High Performance: The Philip Merrill Environmental Center; Chesapeake Bay Foundation, Annapolis, Maryland. Office of Building Technology, State and Community Programs (BTS) Brochure. April 2002; 4 pp. This case study highlights the high performance building features of the Chesapeake Bay Foundation's Philip Merrill Environmental Center. Order no. DOE/GO-102002-1533.

Highlighting High Performance: Twenty River Terrace, Battery Park City, New York, New York. Office of Building Technology, State and Community Programs (BTS) Brochure. August 2002; 4 pp. This case study highlights the high performance building features of the Twenty River Terrace, Battery Park City building. Order no. DOE/GO-102002-1611.

Home Builders Association of Central New Mexico: Building America Fact Sheet. October 2001; 1 p. This flier introduces the Building America Partner Program in central New Mexico and encourages home builders to participate. Order no. FS-550-30859.

How to Size a Grid-Connected Solar Electric System: Better Buildings Series Solar Electric Fact Sheet. August 2002; 4 pp. This fact sheet provides the consumer with a concise overview of how to size a grid-connected solar electric system. The initial process for collection of data is explained, followed by a description of how to use the data to determine the correct size of the system. A worksheet for determining the required number of panels for the consumer's home is included. Order no. DOE/GO-102002-1607.

International Performance Measurement and Verification Protocol: Concepts and Options for Determining Energy and Water Savings, Volume I (Revised) (Booklet). March 2002; 93 pp. This protocol serves as a framework to determine energy and water savings resulting from the implementation of an energy efficiency program. It is also intended to help monitor the performance of renewable energy systems and to enhance indoor environmental quality in buildings. Order no. DOE/GO-102002-1554.

International Performance Measurement & Verification Protocol: Concepts and Practices for Improved Indoor Environmental Quality, Volume II (Revised) (Booklet). March 2002; 58 pp. This protocol serves as a framework to determine energy and water savings resulting from the implementation of an energy efficiency program. It is also intended to help monitor the performance of renewable energy systems and to enhance indoor environmental quality in buildings. Order no. DOE/GO-102002-1517.

Louis Stokes Laboratories, Building 50, National Institutes of Health, Bethesda, Maryland: Laboratories for the 21st Century Case Studies (Revision) (Brochure). March 2002; 8 pp. This case study was prepared by participants in the Laboratories for the 21st Century program, a joint endeavor of the U.S. Environmental Protection Agency and the U.S. Department of Energy's Federal Energy Management Program. The energy-efficient features of the new laboratories in Building 50 at the National Institutes of Health in Bethesda, Maryland, include

extensive use of daylighting, variable-air-volume control of the ventilation air supply and exhaust air system, and a unique energy recovery system that makes use of large desiccant energy wheels. With nearly 300,000 gross square feet, the building is estimated to use much less energy than traditional research facilities consume because of its energy-efficient design and features. Order no. DOE/GO-102002-1570.

Modular and Manufactured Houses Offer Homeowners the Building America and ENERGY STAR® Advantage: Genesis Homes—Auburn Hills, Michigan. Office of Building Technology, State and Community Programs (BTS) Building America Case Study (Fact Sheet). January 2002; 2 pp. Genesis Homes is headquartered in Auburn, Michigan, and has 11 factories throughout the nation. They build modular and manufactured homes with quality design, construction practice, and building materials that qualify for the Energy Star® label. Order no. FS-550-31521.

National Oceanic and Atmospheric Administration's Honolulu Laboratory Renewal Project, Honolulu, Hawaii. Green Building Challenge 2002 Brochure. August 2002; 4 pp. This brochure provides an overview of The National Oceanic and Atmospheric Administration's Honolulu Laboratory Renewal Project, a project designed to adhere to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Order no. DOE/GO-102002-1626.

New American Home®: Atlanta, Georgia—2002. Office of Building Technology, State and Community Programs (BTS), Building America Brochure.

January 2002; 4 pp. The New American Home® is an annual showcase project designed by committee and co-sponsored by the National Association of Home Builders' (NAHB) National Council of the Housing Industry (NCH). This year's project is built by John Wieland Homes and Neighborhoods and supported by IBACOS. Order no. BR-550-31470.

Process and Environmental Technology Laboratory at Sandia National Laboratories, New Mexico: Laboratories for the 21st Century Case Studies (Revision) (Brochure).

March 2002; 12 pp. This case study was prepared by participants in the Laboratories for the 21st Century program. The energy-efficient features of the laboratories in the Process and Environmental Technology Laboratory, Sandia National Laboratories, Albuquerque, New Mexico, include highly efficient heating, ventilating, and air-conditioning equipment; efficient lighting; variable-air-volume fume hoods; and variable-speed drives and motors. Order no. DOE/GO-102002-1569.

Renewable Energy Development on Tribal Lands (Brochure).

August 2002; 12 pp. Tribal Energy Program under DOE's Office of Energy Efficiency and Renewable Energy provides financial and technical assistance to Tribes for feasibility studies and shares the cost of implementing sustainable renewable energy installations on tribal lands. Order no. DOE/GO-102002-1628.

Right-Size Heating and Cooling Equipment. Office of Building Technology, State and Community Programs (BTS) Technology Fact Sheet.

January 2002; 4 pp. This series of technology fact sheets was created to help housing designers and builders adopt a whole-house design approach and energy efficient design practices. The fact sheet helps people choose the correct equipment size for heating and cooling to improve comfort and reduce costs, maintenance, and energy use. Order no. DOE/GO-102002-1490.

Save with Solar and Wind, Summer 2002 (Newsletter).

July 2002; 12 pp. This newsletter published by the Department of Energy's Federal Energy Management Program is intended for facility managers, contracting officials, energy specialists, and others involved in helping Federal agencies increase their use of cost-effective solar and wind energy systems at their facilities. This issue describes a new strategy to achieve the Federal goal for renewable energy, as well as some new solar and wind systems installed at facilities of the Department of Defense, the U.S. Geological Survey, the U.S. Postal Service, the National Park Service, and other agencies. Order no. DOE/GO-102002-1591.

Save with Solar and Wind, Winter 2001/2002 (Newsletter).

January 2002; 16 pp. This issue describes some of the ways in which our government is saving energy and money by using solar and wind systems to produce heat and electricity at Federal facilities. It focuses on successful energy efficiency and renewable energy projects sponsored by DOE's Federal Energy Management Program (FEMP) and other agencies. Included is information about software, innovative financing opportunities, and other tools that can help agencies fulfill the mandates of the Energy Policy Act of 1992 and Executive Order 13123. Order no. DOE/GO-102001-1487.

SAVEnergy Program. Federal Energy Management Program (FEMP) Program Overview (Fact Sheet).

May 2002; 2 pp. This program overview describes elements of the U.S. Department of Energy's SAVEnergy Program, which is managed by DOE's Federal Energy Management Program. The program helps agencies meet Federal goals for greater energy efficiency, water conservation, and the use of renewable energy by contracting with expert engineering firms to conduct energy and water use audits at Federal facilities. Order no. DOE/GO-102002-1564.

Sunwall Design Competition: U.S. Department of Energy National Solar Design Competition (Booklet).

October 2001; 54 pp. This booklet documents and showcases the solar design competition for the south wall of the DOE headquarters building (Forestal Building) in Washington, D.C. Competition was sponsored by DOE and the American Institute of Architects. Order no. DOE/GO-102001-1339.

Super ESPC Takes Off at NASA Glenn Research Center. Federal Energy Management Program (FEMP) ESPC Case Study

(Fact Sheet). February 2002; 2 pp. This case study describes how staff at NASA John H. Glenn Research Center (GRC) in Cleveland, Ohio, found an alternative way to fund energy efficiency projects when operating and maintenance budgets were reduced. NASA GRC used a DOE Federal Energy Management Program (FEMP) Regional Super Energy Savings Performance Contract (Super ESPC) to obtain lighting system upgrades, lighting controls, boiler economizers, and other energy-efficient equipment. Order no. DOE/GO-102002-1186.

U.S. Department of Energy Weatherization Assistance Program. Office of Building Technology, State and Community Programs (BTS)

Fact Sheet. January 2002; 2 pp. A summary of benefits of DOE's Weatherization Assistance Program for low-income families, including both energy and economic impacts on local communities. Order no. DOE/GO-102002-1473.

U.S. Team Green Building Challenge 2002

(Fact Sheet). September 2002; 4 pp. This flier describes the projects of the U.S. Team participating in the International Green Building Challenge. Order no. DOE/GO-102002-1632.

Using Distributed Energy Resources: A How-To Guide for Federal Facility Managers. Office of Energy Efficiency and Renewable Energy (EERE) Federal Energy Management Program (FEMP) Booklet. May 2002; 16 pp. The Department of Energy's Federal Energy Management Program (FEMP)

established the Distributed Energy Resources (DER) Program to assist Federal agencies in implementing DER projects at their facilities. This How-To Guide was designed to assist facility managers in evaluating potential applications and benefits. Order no. DOE/GO-102002-1520.

Utility Energy Services

Contracts: Enabling Documents (Version 2). Federal Energy Management Program (FEMP)

Book. October 2001; 130 pp. This book is intended for FEMP Utility Workshops and contains important legislative, executive, and agency mandates and legal opinions regarding energy and water efficiency improvements required at Federal facilities. Order no. DOE/GO-102000-1111.

Energy Efficiency and Renewable Energy

Easy Ways for Your City to Save Energy

(Brochure). March 2002; 3 pp. These ready-to-go ideas and technologies are proven ways that cities have easily achieved energy savings. Included are ideas for minimal-effort solutions, as well as financing suggestions and additional resources. By saving energy, you can add money to your city budget and improve your region's air quality. Order no. BR-710-30389.

Energy Savers Hot Winter Tips. Office of Building Technology, State and Community Programs (BTS) Brochure. December 2001; 2 pp. This tri-fold brochure provides wintertime energy-saving and money-saving tips for homeowners. Order no. DOE/GO-102001-1359.

Myths About Energy in Schools. EnergySmart Schools

(Brochure). February 2002; 6 pp. This document takes a look at some of the myths and misconceptions about energy in schools, and provides the facts that can help school districts make smart energy choices. Order no. DOE/GO-102002-1525.

Office of Power Technologies (OPT) Program Technology Overview Fact Sheets.

October 2001. These new fact sheets for the Department of Energy (DOE) Office of Power Technologies (OPT) provide technology overviews, descriptions of DOE programs, and market potential for each OPT program area.

Biopower Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1182.

Distributed Energy Resources Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1485.

Geothermal Energy Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1181.

Hydrogen Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1450.

Hydropower Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1452.

Solar Energy Technologies Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1453.

Superconductivity Program Technology Overview.

2 pp. Order no. DOE/GO-102001-1486.

**Technology Access Program
Technology Overview.** 2 pp.
Order no. DOE/GO-102001-1451.

**Wind Energy Program
Technology Overview.** 2 pp.
Order no. DOE/GO-102001-1180.

**Weatherization Assistance
Program Close-Up Series. Office
of Building Technology, State
and Community Programs (BTS)
Fact Sheets.** October 2001.
The United States demonstrates its
commitment to technology and
efficiency through the Weatherization
Assistance Program. Weatherization
uses advanced technologies and
techniques to reduce energy costs for
low-income families by increasing
the energy efficiency of their homes.
The following two-page fact sheets
describe the program in each state.

**Basket of Energy Benefits for
Iowa.**
Order no. DOE/GO-102001-1393.

**Dazzling Minnesota with
Energy Efficiency Savings.**
Order no. DOE/GO-102001-1401.

**Energy Savings Take Flight in
North Carolina.**
Order no. DOE/GO-102001-1411.

**Foundation of Energy
Efficiency in South Carolina.**
Order no. DOE/GO-102001-1418.

**Frosty Conditions Catalyze
Weatherization Solutions
(Maine).**
Order no. DOE/GO-102001-1397.

**Garden State Flourishes with
Weatherization (New Jersey).**
Order no. DOE/GO-102001-1408.

**Georgia Champions Energy
Efficiency Savings.**
Order no. DOE/GO-102001-1388.

**Geyser of Energy Savings in
Idaho.**
Order no. DOE/GO-102001-1390.

**Harnessing Energy Savings in
Tennessee.**
Order no. DOE/GO-102001-1420.

**Launching an Energy-Efficient
Future in Alabama.**
Order no. DOE/GO-102001-1378.

**Living History of Energy
Efficiency in Virginia.**
Order no. DOE/GO-102001-1423.

**Making Paradise More
Affordable with
Weatherization (Hawaii).**
Order no. DOE/GO-102001-1389.

**Massachusetts Fosters the
Weatherization Spirit.**
Order no. DOE/GO-102001-1399.

**Nebraska Cultivates Energy
Efficiency Savings.**
Order no. DOE/GO-102001-1405.

**New York Signals
Weatherization Savings.**
Order no. DOE/GO-102001-1410.

**Oklahoma Orchestrates
Energy Efficiency Solutions.**
Order no. DOE/GO-102001-1414.

**Oregon Blazes the Trail to
Energy Efficiency.**
Order no. DOE/GO-102001-1415.

**Pennsylvania Sparks an
Energy Efficiency Revolution.**
Order no. DOE/GO-102001-1416.

**Promoting Independence in
Rhode Island.**
Order no. DOE/GO-102001-1417.

**Racing Towards Energy
Efficiency in Indiana.**
Order no. DOE/GO-102001-1392.

So Much to Discover in Ohio.
Order no. DOE/GO-102001-1413.

**Spirit of North Dakota: Alive
in Weatherization.**
Order no. DOE/GO-102001-1412.

**Taking Weatherization to New
Heights in Colorado.**
Order no. DOE/GO-102001-1383.

**Tribute to Weatherization
Solutions in South Dakota.**
Order no. DOE/GO-102001-1419.

**Weatherization: A Gateway to
Energy Efficiency (Missouri).**
Order no. DOE/GO-102001-1403.

**Weatherization: A Grand
Program for Arizona.**
Order no. DOE/GO-102001-1380.

**Weatherization: A Savvy
Investment for Louisiana.**
Order no. DOE/GO-102001-1396.

**Weatherization Builds on
Delaware's Innovative Past.**
Order no. DOE/GO-102001-1386.

**Weatherization Creates
Spectacular Savings in Utah.**
Order no. DOE/GO-102001-1422.

**Weatherization Expands
Access to Energy Savings
(New Hampshire).**
Order no. DOE/GO-102001-1407.

**Weatherization Grows in the
Green Mountain State
(Vermont).**
Order no. DOE/GO-102001-1424.

**Weatherization in Arkansas:
A Gem of a Program.**
Order no. DOE/GO-102001-1381.

**Weatherization is a Hit in
Michigan.**
Order no. DOE/GO-102001-1400.

Weatherization is a Natural Choice for Montana.
Order no. DOE/GO-102001-1404.

Weatherization is a Sure Bet for Nevada.
Order no. DOE/GO-102001-1406.

Weatherization is a Winning Play for Wisconsin.
Order no. DOE/GO-102001-1427.

Weatherization Keeps Washington Green.
Order no. DOE/GO-102001-1425.

Weatherization Makes a Big Impact in Texas.
Order no. DOE/GO-102001-1421.

Weatherization Makes Headlines in Connecticut.
Order no. DOE/GO-102001-1384.

Weatherization Plays a Starring Role in Mississippi.
Order no. DOE/GO-102001-1402.

Weatherization Program is a Capital Idea for Washington, D.C.
Order no. DOE/GO-102001-1385.

Weatherization Radiates Energy Savings in Florida.
Order no. DOE/GO-102001-1387.

Weatherization Rises to the Top in Kansas.
Order no. DOE/GO-102001-1394.

Weatherization Sails on Maryland's Legacy of Innovation.
Order no. DOE/GO-102001-1398.

Weatherization Savings Peak in Alaska.
Order no. DOE/GO-102001-1379.

Weatherization Savings Takes Root in New Mexico.
Order no. DOE/GO-102001-1409.

Weatherization Shines in California.
Order no. DOE/GO-102001-1382.

Weatherization Spans the Efficiency Spectrum in Illinois.
Order no. DOE/GO-102001-1391.

Weatherization Works!
Order no. DOE/GO-102001-1377.

Weatherization: Wyoming's Hidden Resource.
Order no. DOE/GO-102001-1428.

West Virginia Advances Energy Efficiency.
Order no. DOE/GO-102001-1426.

Geothermal

GeoPowering the West: Geothermal Energy—The Bountiful, Clean Energy Source for the West. Geothermal Energy Program, Office of Energy Efficiency & Renewable Energy (EERE) Brochure.

September 2002; 2 pp. This is a general brochure outlining benefits and activities of the DOE Geothermal Technologies Program GeoPowering the West project.
Order no. DOE/GO-102002-1637.

Geothermal Energy—Heat from the Earth: New Mexico; GeoPowering the West Series Fact Sheet (FS). April 2002; 2 pp. New Mexico holds considerable reserves of this clean, reliable form of energy that to date have barely been tapped. New Mexico has more acres of geothermally heated greenhouses than any other state, and aquaculture, or fish farming, is a burgeoning enterprise for state residents.
Order no. DOE/GO-102002-1563.

Industry

2003 Industrial Partnership Awards. Office of Energy Efficiency and Renewable Energy (EERE) Brochure. April 2002; 6 pp. This trifold brochure describes categories and nomination procedures for outstanding Partner of the Year, Technology of the Year, and Plant of the Year.
Order no. DOE/GO-102002-1589.

Additional Steam Traps Increase Production of a Drum Oven at a Petroleum Jelly Plant. Office of Industrial Technologies (OIT) BestPractices Project Case Study (Brochure). March 2002; 4 pp. Additional steam traps were installed on the drum oven at a petroleum jelly production facility at an Exxon Mobil plant in Nigeria. The installation improved heat transfer and saved energy.
Order no. DOE/GO-102002-1515.

Advanced Quality Control System for the Thermomechanical Pulping Process Improves Quality and Reduces Energy Costs for Augusta Newsprint. Office of Industrial Technologies (OIT) Forest Products BestPractices Technical Case Study (Brochure). February 2002; 4 pp. Augusta Newsprint Co. partnered with Invensys' Pacific Simulation group to implement an advanced quality control solution for the thermomechanical pulping process at their Augusta, Georgia plant.
Order no. DOE/GO-102002-1537.

Anchor Glass Container Corporation Plant-Wide Energy Assessment Saves Electricity and Expenditures: Office of Industrial Technologies (OIT) BestPractices Glass Assessment Case Study (Brochure).

March 2002; 6 pp. Plant-wide energy assessments at the Anchor Glass Warner Robins and Jacksonville plants revealed opportunities that could result in significant annual energy savings. Order no. DOE/GO-102002-1513.

Annual Report Fiscal Year 2001: Office of Industrial Technologies (OIT) Chemical Industry of the Future (Booklet).

October 2001; 53 pp. The Chemical Annual Report provides program highlights during the past year. Included are updates on technology R&D projects, recent success, and industry trends. Order no. DOE/GO-102001-1474.

Appleton Papers Plant-Wide Energy Assessment Saves Energy and Reduces Waste: Office of Industrial Technologies (OIT) BestPractices Forest Products Assessment Case Study

(Brochure). March 2002; 6 pp. A plant-wide energy survey at the Appleton Papers, Inc. West Carrollton paper mill resulted in 21 recommendations for projects to reduce energy consumption and waste production and improve process efficiency. Order no. DOE/GO-102002-1512.

Boiler Blowdown Heat Recovery Project Reduces Steam System Energy Losses at Augusta Newsprint. Office of Industrial Technologies (OIT) Forest Products BestPractices Technical Case Study

(Fact Sheet). February 2002; 2 pp. A boiler blowdown heat recovery project at Augusta Newsprint Company's Augusta, Georgia mill will save almost \$31,000 annually in fuel costs. Order no. DOE/GO-102002-1536.

Check Burner Air to Fuel Ratios: Process Heat Tip Sheet #2. Office of Industrial Technologies (OIT) Process Heat Energy Tips Fact Sheet.

May 2002; 2 pp. Energy tip sheet recommendation on when to check and reset air/fuel ratios as well as why it's the simplest way to maximize efficiency of fuel-fired processing equipment. Order no. DOE/GO-102002-1552.

Collaborating with Industry for Innovation: Laboratory Coordinating Council (Brochure). Office of Industrial Technologies (OIT) (Brochure).

April 2002; 6 pp. This brochure describes the Laboratory Coordinating Council's network of labs and facilities to promote partnership between industry and national laboratories. Order no. DOE/GO-102002-1553.

Compressed Air Project Improves Efficiency and Production at Harland Publishing Facility. Office of Industrial Technologies (OIT) BestPractices Technical Case Study (Brochure).

May 2002; 4 pp. This case study describes a project which configured a printing machine so that it consumes less compressed air and required lower pressure to operate effectively. The project replicated throughout the company, leading to energy cost savings of \$200,000 per year, or 2.9 million kilowatt-hours. Order no. DOE/GO-102002-1546.

Compressed Air System Improvement Project Saves Foundry Energy and Increases Production. Office of Industrial Technologies (OIT) Metal Casting BestPractices Technical Case Study (Brochure).

May 2002; 6 pp. This case study highlights International Truck and Engine Corporation's optimization project on the compressed air system that serves its foundry, Indianapolis Casting Corporation. Due to the project's implementation, the system's efficiency was greatly improved, allowing the foundry to operate with less compressor capacity, which resulted in reduced energy consumption, significant maintenance savings, and more reliable production.

Order no. DOE/GO-102001-1480.

Compressed Air System Project Improves Production at a Candy-Making Facility. Office of Industrial Technologies (OIT) BestPractices Technical Case Study (Brochure). March 2002; 4 pp. The H.B. Reese Company successfully completed an upgrade of this compressed air system at its facility in Hershey, Pennsylvania. The plant took two compressors offline while increasing throughput and quality.
Order no. DOE/GO-102002-1482.

Compressed Air System Retrofit Increases Productivity at a Petroleum Packaging Facility. Office of Industrial Technologies (OIT) Petroleum BestPractices Project Case Study (Brochure). January 2002; 4 pp. This case study highlights a compressed air improvement project implemented at the Mobil lubricating-blending plant in Vernon, California. The project reduced the plant's energy production and maintenance costs, and increased reliability due to increased efficiency of the compressed air system.
Order no. DOE/GO-102002-1331.

Compressed Air System Retrofitting Project Improves Productivity at a Foundry. Office of Industrial Technologies (OIT) Metal Casting BestPractices Project Case Study (Brochure). January 2002; 4 pp. This case study highlights International Truck and Engine Corporation's optimization project on the compressed air system that serves its foundry. The system's efficiency was greatly improved, allowing the foundry to operate with less compressor capacity, which resulted in reduced energy consumption, significant maintenance savings, and more reliable production.
Order no. DOE/GO-102002-1481.

Compressed Air System Upgrade Results in Substantial Energy Savings. Office of Industrial Technologies (OIT) BestPractices Project Case Study (Brochure). January 2002; 4 pp. This case study highlights a compressed air system upgrade at BWX Technologies manufacturing plant in Lynchburg, Virginia, which replaced antiquated compressors and dryers and implemented an improved control strategy, resulting in improved energy efficiency and savings in energy and maintenance costs.
Order no. DOE/GO-102002-1372.

Consider Steam Turbine Drives for Rotating Equipment: Office of Industrial Technologies (OIT) Steam Tip Fact Sheet #21. February 2002; 2 pp. Steam turbines are well suited as prime movers for driving boiler feedwater pumps, forced or induced-draft fans, blowers, air compressors, and other rotating equipment. This service generally calls for a backpressure non-condensing steam turbine. The low-pressure steam turbine exhaust is available for feedwater heating, preheating of deaerator makeup water, and/or process requirements.
Order no. DOE/GO-102002-1475.

Consolidated Compressed Air System Reduces Power Consumption and Energy Costs. Office of Industrial Technologies (OIT) Forest Products BestPractices Technical Case Study (Brochure). April 2002; 4 pp. Augusta Newsprint Company consolidated two compressed air systems at its facility in Augusta, Georgia. The results are a more streamlined system, added storage capacity, backflow prevention, and the elimination of unused equipment.
Order no. DOE/GO-102002-1534.

Cover Heated, Open Vessels: Office of Industrial Technologies (OIT) Steam Tip Fact Sheet #19. January 2002; 2 pp. Open vessels that contain heated liquids often have a high heat loss due to surface evaporation. Both energy and liquid losses are reduced by covering open vessels with insulated lids. This fact sheet provides an estimate of the evaporative heat loss per square foot of uncovered vessel surface area for various water and dry ambient air temperatures.
Order no. DOE/GO-102002-1477.

Energy Matters (Newsletter). This quarterly newsletter from DOE's Office of Industrial Technologies promotes the use of energy-efficient industrial systems.

Energy Matters—Fall 2001. October 2001; 12 pp.
Order no. DOE/GO-102001-1454.

Energy Matters—Spring 2002. April 2002; 12 pp.
Order no. DOE/GO-102002-1573.

Energy Matters—Summer 2002. July 2002; 8 pp.
Order no. DOE/GO-102002-1605.

Energy Matters—Winter 2002. January 2002; 18 pp.
Order no. DOE/GO-102002-1501.

Fan System Optimization Improves Production and Saves Energy at Ash Grove Cement Plant. Office of Industrial Technologies (OIT) Mining BestPractices Project Case Study (Brochure). May 2002; 4 pp. This case study describes an optimization project implemented on a fan system at Ash Grove Cement Company, leading to annual energy and maintenance savings of \$16,000 and 175,000 kilowatt-hours (kWh).
Order no. DOE/GO-102002-1599.

Four Equipment Upgrade Projects Reduce System Energy Losses at Augusta Newsprint. Office of Industrial Technologies (OIT) Forest Products BestPractices Technical Case Study (Brochure). February 2002; 6 pp. Augusta Newsprint Company performed a plant-wide energy assessment that implemented four projects involving pumping systems presented in this study, which are projected to reduce energy consumption by over 5,200 megawatt hours.
Order no. DOE/GO-102002-1535.

Improve Your Boiler's Combustion Efficiency: Office of Industrial Technologies (OIT) Steam Energy Tips #4 (Fact Sheet). March 2002; 2 pp. Tips to help plants establish a program for the regular inspection, testing and repair of steam traps.
Order no. DOE/GO-102002-1506.

Improving Steam System Performance: A Sourcebook for Industry. Office of Industrial Technologies (OIT) (Book). June 2002; 107 pp. This book is a reference for industrial steam system users, outlining opportunities to improve steam system performance.
Order no. DOE/GO-102002-1557.

Inspect and Repair Steam Traps: Office of Industrial Technologies (OIT) Steam Energy Tips #1 (Fact Sheet). March 2002; 2 pp. Tips to help plants establish a program for the regular inspection, testing and repair of steam traps.
Order no. DOE/GO-102002-1503.

Insulate Steam Distribution and Condensate Return Lines: Office of Industrial Technologies (OIT) Steam Energy Tips #2 (Fact Sheet). March 2002; 2 pp. Tips to help plants establish a program for the regular inspection, testing and repair of steam traps.
Order no. DOE/GO-102002-1504.

Metlab Plant-Wide Assessment: Office of Industrial Technologies (OIT) BestPractices Assessment Case Study (Brochure). August 2002; 6 pp. This case study describes the methods and results of a plant-wide energy assessment at Metlab's aircraft component manufacturing plant in Wyndmoor, Pennsylvania. Recommendations derived from the assessment can save an estimated \$528,400 annually, reduce natural gas use by 50,070 MMBtu per year, and reduce electrical use by 329,400 kWh per year.
Order no. DOE/GO-102002-1619.

OIT Times—Spring 2002, Vol. 5, No. 2 (Newsletter). April 2002; 12 pp. The OIT Times Spring 2002 newsletter focuses on the new initiatives, services and tools of the Office of Industrial Technologies' Industries of the Future, Financial Assistance, States, and Enabling Technologies programs. The feature story reports on the findings of a National Coalition for Advanced Manufacturing study on how trade deficits affect the products and inputs of energy-intensive industries.
Order no. DOE/GO-102002-1572.

OIT Times—Winter 2002, Vol. 5, No. 1 (Newsletter). January 2002; 12 pp. This edition of the OIT Times newsletter covers the newest round of industrial R&D projects undertaken by the Industries of the Future and the Financial Assistance programs.
Order no. DOE/GO-102002-1500.

Optimizing Electric Motor Systems at a Corporate Campus Facility. Office of Industrial Technologies (OIT) Chemicals BestPractices Case Study (Brochure). May 2002; 4 pp. 3M conducted an in-house motor system study in 29 buildings at the 3M Center. The company evaluated approximately 1,000 electric motors and upgraded systems, resulting in reduced electricity use and cost savings of \$77,554 per year.
Order no. DOE/GO-102002-1502.

Preheated Combustion Air: Process Heat Tip Sheet #1. Office of Industrial Technologies (OIT) Process Heat Energy Tips Fact Sheet. May 2002; 2 pp. This tip sheet describes a fuel-fired industrial heating process and how to improve efficiency and productivity by preheating combustion air going to the burners.
Order no. DOE/GO-102002-1551.

Pump System Optimization Saves Energy and Improves Productivity at a Daishowa America Paper Mill. Office of Industrial Technologies (OIT) Forest Products BestPractices Case Study (Brochure). May 2002; 4 pp. Review of pumping system at paper mill led to installation of mechanical Adjustable Speed Drives on two pumps, which resulted in annual energy savings of \$32,000 and 700,000 kilowatt hours.
Order no. DOE/GO-102002-1558.

Replace Pressure-Reducing Valves with Backpressure Turbogenerators. Office of Industrial Technologies (OIT) Steam Tip Fact Sheet # 20.

January 2002; 2 pp. Many industrial facilities produce steam at a higher pressure than is demanded by process requirements. Steam passes through pressure-reducing valves (PRVs, also known as letdown valves) at various locations in the steam distribution system to let down or reduce its pressure. A non-condensing or backpressure steam turbine can perform the same pressure-reducing function as a PRV, while converting steam energy into electrical energy.

Order no. DOE/GO-102002-1476.

Resources and Tools for Energy Efficiency and Cost Reduction Now: Office of Industrial Technologies (OIT) Glass Industry of the Future (CD-ROM).

October 2001. This marketing CD contains OIT Glass Industry of the Future and BestPractices publications and software tools to help glass manufacturers save energy by using energy efficiency technologies and system improvements developed by the U.S. Department of Energy, Office of Industrial Technologies. Order no. DOE/GO-102001-1467.

Steam Digest 2001. Office of Industrial Technologies (OIT) Book. January 2002; 104 pp. This book chronicles the BestPractices Program's contributions to the industrial trade press for 2001, and presents articles that cover technical, financial and managerial aspects of steam optimization. Order no. DOE/GO-102002-1516.

Upgrade of Compressed Air Control System Reduces Energy Costs at Michelin Tire Plant. Office of Industrial Technologies (OIT) BestPractices Project Case Study

(Brochure). January 2002; 4 pp. This case study highlights the upgraded compressed air system at a Michelin tire manufacturing plant in Spartanburg, South Carolina. The controls upgrade project enabled multiple compressor operation without blow-off, and significantly reduced energy costs. Order no. DOE/GO-102002-1369.

Upgraded Lighting System Leads to Energy and Cost Savings at Augusta Newsprint Company. Office of Industrial Technologies (OIT) Forest Products BestPractices Technical Case Study

(Fact Sheet). March 2002; 2 pp. Augusta Newsprint Co. installed new metal halide fixtures to increase lighting levels, decrease maintenance costs, and reduce energy demand. This has resulted in annual energy savings of \$65,000. Order no. DOE/GO-102002-1538.

Use Feedwater Economizers for Waste Heat Recovery: Office of Industrial Technologies (OIT) Steam Energy Tips #3

(Fact Sheet). March 2002; 2 pp. Tips to help plants establish a program for the regular inspection, testing and repair of steam traps. Order no. DOE/GO-102002-1505.

Utica Corporation Plant-Wide Energy Assessment Report Final Summary. Office of Industrial Technologies (OIT) BestPractices Assessment Case Study

(Brochure). March 2002; 6 pp. Utica Corporation conducted a plant-wide energy assessment of the manufacturing processes and utilities at its facility in Whiteboro, NY. As a result of the assessment, the company is now implementing six energy conservation projects that will result in significant cost savings and efficiency improvements. Order no. DOE/GO-102002-1494.

National Renewable Energy Laboratory

National Renewable Energy Laboratory 2001 Information Resources Catalog. March 2002; 86 pp. NREL's eighth annual Information Resources Catalog can keep you up-to-date on the research, development, opportunities, and available technologies in energy efficiency and renewable energy. It includes five main sections with entries grouped according to subject area. Order no. BK-310-31595.

National Renewable Energy Laboratory 2002 Research Review (Booklet). July 2002; 32 pp. America is making a long transition to a future in which conventional, fossil fuel technologies will be displaced by new renewable energy and energy efficiency technologies. This research review describes NREL's R&D in seven technology areas—biorefineries, transportation, hydrogen, solar electricity, distributed energy, energy-efficient buildings, and low-wind-speed turbines. Order no. JA-810-31967.

National Renewable Energy Laboratory: 25 Years of Research Excellence 1977-2002

(Brochure). July 2002; 8 pp. NREL's major renewable energy program areas include wind, solar distributed energy resources, bioenergy, hydrogen and geothermal energy. The Lab also has efficiency programs in buildings, advanced vehicle and fuel technologies, federal energy management, and advanced industrial technologies. This brochure provides basic background information on NREL's major program areas.
Order no. BR-830-30845.

Solar Energy— General

Basics of a Solar Electric System: Better Buildings Series Solar Electric Fact Sheet.

July 2002; 2 pp. Today's solar technologies are more efficient and versatile than ever before, adding to the appeal of an already desirable energy source. This fact sheet provides information on the basics of a solar electric system, including components of a system, how to choose solar modules, and how to choose a solar system.
Order no. DOE/GO-102002-1593.

Connecting Your Solar Electric System to the Utility Grid: Better Buildings Series Solar Electric Fact Sheet. July 2002; 2 pp. In recent years, the number of solar-powered homes connected to the local utility grid has increased dramatically. This fact sheet provides information on connecting your solar electric system to the utility grid, including information on net metering.
Order no. DOE/GO-102002-1594.

Solar America: A Solar Energy Tour of the United States (CD-ROM). December 2001.

This CD contains nearly 500 photos and captions of solar energy technologies at work throughout the United States. Each state is represented, as well as Puerto Rico, the U.S. Virgin Islands, the District of Columbia, and U.S. outposts in Antarctica. The technologies represented are photovoltaics, solar thermal, solar hot water, and concentrating solar power.
Order no. DOE/GO-102001-1492.

Solar Decathlon Newsletter. This newsletter is produced bi-monthly and distributed electronically for Solar Decathlon teams. These issues highlight activities associated with the Solar Decathlon, inform student teams about competition logistics and contest updates, and keep sponsors, the media, and the public up to date on the event.

Solar Decathlon Newsletter, June/July 2002. June 2002; 4 pp.
Order no. DOE/GO-102002-1604.

Solar Decathlon Newsletter, April/May 2002. April 2002; 4 pp.
Order no. DOE/GO-102002-1588.

Solar Decathlon Newsletter, February/March 2002. February 2002; 4 pp.
Order no. DOE/GO-102002-1549.

Solar Decathlon Newsletter, December 2001/January 2002. January 2002; 4 pp.
Order no. DOE/GO-102002-1510.

Solar Financing Guide: Handbook of Resources (CD-ROM). November 2001.

As the demand for solar energy systems increases, so does the need for access to capital. This CD provides a broad range of financing information to create local, regional, and national training programs for the financing of renewable energy products.
Order no. EL-520-30672.

Solar Energy— Photovoltaics

Photovoltaics Overview:

Fiscal Year 2001 (Brochure). February 2002; 24 pp. In Fiscal Year 2001, for the third year in a row, the solar electric market grew at more than 30%. Fueling this growth is the U.S. photovoltaic industry—the companies that design, manufacture, install, operate, and maintain all components of solar generating systems. The messages of the U.S. PV industry roadmap are taken very seriously by the U.S. Department of Energy's Office of Solar Energy Technologies. Achieving industry's goals will demand aggressive work in fundamental and exploratory research, manufacturing, and system applications to reduce the cost of solar electric systems. This is an annual report of the DOE PV Program, FY2001.
Order no. DOE/GO-102002-1526.

Transportation

Alternative Fuel News: Official Publication of the Clean Cities Network and the Alternative Fuels Data Center, Vol. 5, No. 3

(Newsletter). November 2001; 16 pp. A quarterly magazine with articles on alternative fuel school buses, the market growth of biodiesel fuel, National AFV Day 2002, model year 2002 alternative fuel passenger cars and light trucks, the Michelin Challenge Bibendum road rally, and advanced technology vehicles at Robins Air Force Base, the Top Ten Clean Cities coalitions for 2000, and AFVs on college campuses. Order no. BR-540-30763.

Alternative Fuel News: Official Publication of the Clean Cities Network and the Alternative Fuels Data Center, Vol. 5, No. 4

(Newsletter). March 2002; 16 pp. Quarterly magazine with articles on creative alliances to build alternative fueling infrastructure, AFV technician training, the ProCon propane powered van, and EPA-related progress in New York. Order no. BR-540-31327.

Alternative Fuel News: Official Publication of the Clean Cities Network and the Alternative Fuels Data Center, Vol. 6, No. 1

(Newsletter). July 2002; 16 pp. Quarterly magazine with articles on auctions of used alternative fuel vehicles (AFVs), Royalty Enterprises of Ohio, and introducing AFVs in neglected urban areas. Plus Ford's new CNG school bus and electric buses in Connecticut. Order no. BR-540-31683.

Alternative Fuels and Vehicles Information Resources

(Brochure). April 2002; 2 pp. This brochure lists and describes Web sites and telephone numbers of resources for people interested in alternative fuels and related vehicles. Most are sponsored by DOE. Order no. DOE/GO-102002-1579.

Alternative Fuels and Vehicles Offer Solutions to Imported Oil, Air Pollution, Climate Change. Office of Energy Efficiency and Renewable Energy (EERE) Clean Cities Alternative Fuel Information Series Fact Sheet.

April 2002; 4 pp. This fact sheet describes available alternative fuels vehicles and the fuels themselves, written primarily for individual motorists. Order no. BR-540-31445.

Annual AFV Reporting for State and Alternative Fuel Provider Fleets. EPA Fleet Information and Regulations, State and Alternative Fuel Provider Programs Guidance Brochure.

October 2001; 6 pp. This guidance brochure walks fleets through the task of filling out the annual State & Alternative Fuel Provider Program AFV acquisition report (Form DOE/OTT/101). Order no. DOE/GO-102001-1366.

Autobuses Urbanos de Gas Natural: Separemos el Mito de la Realidad (Spanish version of Natural Gas Buses: Separating Myth from Fact) (Fact Sheet).

October 2001; 5 pp. Using a myth vs. fact format, this fact sheet addresses common public misconceptions about compressed natural gas buses. For English version see NREL/FS-540-28377. Order no. FS-540-30238.

Beyond Diesel—Renewable Diesel. Center for Transportation Technologies and Systems (CTTS) ReFUEL Laboratory Fact Sheet.

July 2002; 2 pp. CTTS fact sheet describing NREL's new Renewable Fuels and Lubricants (ReFUEL) Research Laboratory, which will be used to facilitate increased renewable diesel use in heavy-duty vehicles. Order no. FS-540-32524.

Charging Algorithm Extends the Life of Lead-acid Batteries: 2001 R&D 100 Award Recipient (Fact Sheet).

October 2001; 1 p. Fact sheet describing NREL's work with Recombination Technologies and Optima Batteries to develop a current interrupt charging algorithm to extend the deep life cycle of valve-regulated lead-acid batteries. Order no. FS-540-31119.

Ciudades Limpias: Alianza Para Promover El Uso De Vehiculos De Combustibles Alternativos (Spanish version of Partnership to Advance Alternative Fuel Vehicles) (Fact Sheet).

October 2001; 5 pp. This fact sheet provides a question and answer overview of the Clean Cities program including what it is, how it works, the accomplishments, and a map of Clean Cities throughout the United States. For English version see NREL/FS-540-24227. Order no. FS-540-30201.

Ciudades Limpias se Internacionaliza (Spanish version of Clean Cities Goes International) (Fact Sheet).

October 2001; 4 pp. This fact sheet provides information, background and the goals of the Clean Cities International program. For English version see NREL/FS-540-30233. Order no. FS-540-30234.

Clean Cities Coalition and Coordinator Awards. Clean Cities Alternative Fuel Information Series Award Winning Coalitions Fact Sheet.

May 2002; 2 pp. The U.S. DOE Clean Cities Program has awarded its Coalition awards for 2002, and the awards were presented at the Clean Cities Conference in May 2002. This fact sheet describes the winners and their contributions. Order no. FS-540-32101.

Clean Cities Facts. Clean Cities Alternative Fuel Information Series (Brochure). March 2002;

4 pp. Description of the Clean Cities Program, sponsored by the U.S. DOE and created to advance the use of cars and trucks powered by alternative fuels, thereby reducing our nation's dependence on imported petroleum. Order no. BR-540-31402.

Clean Cities National Partner Awards. Clean Cities Alternative Fuel Information Series Fact Sheet. May 2002;

4 pp. The U.S. DOE Clean Cities Program has awarded its National Partner awards for 2002, and the awards were presented at the Clean Cities Conference in May 2002. This fact sheet describes the winners and their contributions. Order no. BR-540-32100.

Evaluacion de la flotilla de GNC de la empresa SuperShuttle de Denver (Spanish version of Denver SuperShuttle CNG Fleet Evaluation) (Fact Sheet).

October 2001; 8 pp. A description of a joint effort between Denver SuperShuttle, the Gas Research Institute (GRI) and DOE that evaluated two types of bi-fuel and compressed natural gas. For English version see NREL/FS-540-26439. Order no. FS-540-30144.

Fleet Test & Evaluation (CD-ROM). U.S. Department of Energy Field Operations Program. May 2002. This CD

contains an extensive list of fact sheets and technical reports about the work performed by the team in the areas of light- and heavy-duty vehicles.

Order no. EL-540-32083.

General Evaluation Plan: Fleet Test and Evaluation Projects (Brochure). July 2002;

27 pp. This document details the process used by the NREL Fleet Test & Evaluation team to choose the types of fleets, sites, and technologies they will evaluate. Order no. BR-540-32392.

Hybrid-Electric Transit Buses: NYCT (New York City Transit) Diesel Hybrid-Electric Buses: Final Results (Brochure).

July 2002; 52 pp. Final results of the New York City Transit Hybrid-Electric Transit Bus Study. Hybrid buses had lower emissions, higher fuel economy, and higher operating costs compared with diesel buses. Order no. BR-540-32427.

New York State Overcomes Barriers to Comply with Aggressive State Legislation: EPAct Fleet Information and Regulations, State and Alternative Fuel Provider Program Success Story (Brochure). February 2002; 4 pp.

This brochure features the lessons learned by New York State when it set up its fleet to comply with a state legislation that required it to acquire only alternative fuel vehicles by the year 2010.

Order no. DOE/GO-102002-1511.

NREL's ReFUEL Laboratory: Center for Transportation Technologies and Systems (CTTS) Fact Sheet.

September 2002; 2 pp. This CTTS fact sheet describes NREL's new Renewable Fuels and Lubricants (ReFUEL) Research Laboratory, which will be used to facilitate increased renewable diesel use in heavy-duty vehicles.

Order no. FS-540-32514.

NYCT Diesel Hybrid-Electric Buses Program Status Update (Brochure). March 2002; 12 pp.

This program status update focuses on the experiences gathered during New York City Transit's deployment of hybrid electric buses in its fleet. Order no. BR-540-31668.

Program Activities and Accomplishments in FY 2002: State and Alternative Fuel Provider Program Annual Report. EPAct Fleet Information and Regulations Fact Sheet.

August 2002; 4 pp. From vehicle acquisition and credit trading to exemptions and outreach activity, the Annual Report summarizes the State and Alternative Fuel Provider Program accomplishments during FY 2002/MY2001.

Order no. DOE/GO-102002-1622.

Program Activity and Accomplishments in FY 2001: EPAct Fleet Information and Regulations, State and Alternative Fuel Provider Program, Annual Report.

December 2001; 4 pp. A detailed account of the activity and accomplishments made by fleets covered by the EPAct State & Alternative Fuel Provider Program. Order no. DOE/GO-102001-1484.

Ralphs Grocery EC-Diesel™ Truck Fleet Start-Up Experience: DOE/NREL Truck Evaluation Project (Brochure). October 2001; 8 pp. NREL is conducting the DOE Truck Evaluation Project which includes testing new lower sulfur diesel fuels and exhaust filter technologies. Start-up experiences from one of the evaluations are highlighted in this report.
Order no. BR-540-29485.

Resumen de Estudio de la Flotilla de GNC de la Empresa SuperShuttle (Spanish version of SuperShuttle CNG Fleet Study Summary) (Brochure). October 2001; 9 pp. An account of the successful use of alternative fuels in a fleet of SuperShuttle passenger vans, which offer shared-rides between Boulder and Denver International Airport. For English version see NREL/BR-540-29441.
Order no. FS-540-30250.

S&FP Program Promotes Alternative Fuels to Cut Need for Foreign Oil. EPAct Fleet Information and Regulations, State and Alternative Fuel Provider Program Fact Sheet. April 2002; 2 pp. A detailed description of the history of EPAct's State & Alternative Fuel Provider Program and what fleets need to do to comply to its regulations.
Order no. DOE/GO-102002-1574.

Thermal Comfort Project: A Cool Solution to the Nation's Energy Security Challenges. Center for Transportation Technologies and Systems (CTTS) Fact Sheet. May 2002; 2 pp. This fact sheet describes how the CTTS thermal comfort project will increase energy security by reducing fuel consumed by auxiliary loads such as air conditioning.
Order no. FS-540-32285.

Tiger Teams Help Coalitions Solve Technical Issues. Clean Cities Alternative Fuel Information Series Tiger Teams Technical Assistance Fact Sheet. April 2002; 2 pp. This fact sheet offers a general overview of the Tiger Teams program, including types of projects it tackles and how projects are evaluated.
Order no. FS-540-31626.

Tiger Teams Technical Assistance: Reliable, Universal Open Architecture for Card Access to Dispense Alternative Fuels. Clean Cities Alternative Fuel Information Series Booklet. March 2002; 53 pp. This report discusses the dilemma of incorporating consistent, convenient, universal card access (or "pay-at-the-pump") systems into alternative fueling stations across the country. Work performed by Arthur D. Little, Inc., Irvine, California.
Order no. DOE/GO-102002-1581.

Transit Users Group Supports Transit Agencies with Natural Gas Buses. Clean Cities Alternative Fuel Information Series Tiger Teams Technical Assistance Fact Sheet. April 2002; 2 pp. This fact sheet describes the benefits of the Transit Users Group, which supports transit groups with compressed natural gas (CNG) buses.
Order no. FS-540-31079.

TxDOT Goes Beyond Compliance by Purchasing 100% AFVs. EPAct Fleet Information and Regulations, State & Alternative Fuel Provider Program Success Story (Fact Sheet). January 2002; 4 pp. This fact sheet features challenges the Texas Department of Transportation (TxDOT) faced and overcame in complying to a Texas legislation that calls for the acquisition of only alternative fuel vehicles.
Order no. DOE/GO-102002-1507.

What's New: Fall 2001 Update. EPAct Fleet Information and Regulations, State and Alternative Fuel Provider Program Newsletter. October 2001; 2 pp. Bi-annual newsletter featuring articles on HEV/LSV compliance advisory, biodiesel fuel use growth in 2000, Texas Department of Transportation, and the Credit Trades Bulletin Board.
Order no. DOE/GO-102001-1447.

What's New: Spring 2002 Update. EPAct Fleet Information and Regulations, State and Alternative Fuel Provider Program Newsletter. May 2002; 2 pp. This issue features stories on where to buy used AFVs, exemption guidance updates, MY2001 reporting statistics, Iowa DOT, and 2001 Washington Day presentations.
Order no. DOE/GO-102002-1584.

What's New with the NGNGV Program? Next Generation Natural Gas Vehicle Program Newsletter, June 2002. June 2002; 1 p. This update includes Phase II RFPs, Phase I update, and near-term engine development projects. Available electronically only.
Order no. EL-540-32448.

Wind Energy

Small Wind Electric Systems: Consumer's Guide (Brochure).

These Consumer's Guides for Small Wind Electric Systems provide consumers with enough information to help them determine if a small wind electric system can provide all or a portion of the energy they need for their home or business based on their wind resource, energy needs, and their economics. Topics discussed in the guides include: how to make your home more energy efficient, how to choose the right size turbine, the parts of a wind electric system, determining if there is enough wind resource on your site, choosing the best site for your turbine, connecting your system to the utility grid, and if it's possible to become independent of the utility grid using wind energy. In addition, the cover of the guide contains a state wind resource map and a list of state incentives and state contacts for more information.

Small Wind Electric Systems: A Kansas Consumer's Guide.

October 2001; 28 pp.
Order no. DOE/GO-102001-1472.

Small Wind Electric Systems: A Montana Consumer's Guide.

May 2002; 28 pp.
Order no. DOE/GO-102002-1567.

Small Wind Electric Systems: A New Mexico Consumer's Guide.

October 2001; 28 pp.
Order no. DOE/GO-102001-1301.

Small Wind Electric Systems: A North Dakota Consumer's Guide.

January 2002; 28 pp.
Order no. DOE/GO-102002-1498.

Small Wind Electric Systems: A South Dakota Consumer's Guide.

October 2001; 28 pp.
Order no. DOE/GO-102001-1471.

Small Wind Electric Systems: A Vermont Consumer's Guide.

October 2001; 28 pp.
Order no. DOE/GO-102001-1304.

Small Wind Electric Systems: A Washington Consumer's Guide.

May 2002; 28 pp.
Order no. DOE/GO-102002-1568.

Small Wind Electric Systems: An Alaska Consumer's Guide.

October 2001; 28 pp.
Order no. DOE/GO-102001-1303.

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May 2002; 28 pp.
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October 2001; 28 pp.
Order no. DOE/GO-102001-1302.

Small Wind Electric Systems: An Oregon Consumer's Guide.

May 2002; 28 pp.
Order no. DOE/GO-102002-1576.

U.S. Small Wind Turbine

Industry Roadmap (Booklet).

June 2002; 36 pp. Small wind turbine technology can be a meaningful contributor to our energy security, strategic technology, and long-term economic growth. Small wind turbines are a "distributed" generation source with a very attractive near-term potential for low-cost, rapid growth. The purpose of the AWEA Small Wind Turbine Industry Roadmap is to address the critical needs of small wind turbine technology and provide a framework to develop strategic plans for and investments in this technology and business. The roadmap identifies

barriers to industry growth and appropriate near-term, mid-term, and long-term actions to address these barriers. It also attempts to prioritize these actions and identify priorities for R&D efforts.

Order no. DOE/GO-102002-1598.

Wind Power for America: Rural Electric Utilities Harvest New Crop (Brochure).

February 2002; 6 pp. This trifold brochure strives to educate rural landowners and rural co-op utilities about the benefits of wind power development. It provides examples of rural utilities that have successful wind energy projects and supportive statements from industry members.

Order no. DOE/GO-102002-1528.

Wind Power Today: Wind Energy Program Highlights 2001. Office of Energy Efficiency and Renewable Energy (EERE) Brochure.

May 2002; 24 pp.

Wind Power Today is an annual publication that provides an overview of the U.S. Department of Energy's Wind Energy Program accomplishments for the previous year. The purpose of Wind Power Today is to show how DOE's Wind Energy Program supports wind turbine research and deployment in hopes of furthering the advancement of wind technologies that produce clean, low-cost, reliable energy. This 2001 edition of Wind Power Today also includes discussions about wind industry growth in 2001, how DOE is taking advantage of low wind speed regions through advancing technology, and distributed applications for small wind turbines.
Order no. DOE/GO-102002-1556.



The National Renewable Energy Laboratory's (NREL) technical reports provide information on research and analysis projects performed by NREL staff and subcontractors. They are intended for technical professionals. Unless otherwise noted, NREL technical reports are available in limited quantities from NREL's Document Distribution Service at (303) 275-4363 (phone), or Document_Distribution@nrel.gov (e-mail). These documents can be accessed in PDF format through the Publications database at www.nrel.gov/publications.

Alternative Fuels

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November 2001; 79 pp.

Work performed by Marketing Horizons, Inc., St. Louis, Missouri.
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July 2002; 35 pp. Work performed by Delta T Corporation, Williamsburg, Virginia.
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Work performed by J.E. Sinor Consultants, Inc., Niwot, Colorado.
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Order no. TP-510-32438.

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February 2002; 30 pp. Work performed by Donald L. Johnson, Hertford, North Carolina.
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