

US EPA ARCHIVE DOCUMENT

APPENDIX B

State and Local Clean Energy LBE Programs: Examples, Tools, and Information Resources

This appendix presents a series of tables that provide examples of clean energy LBE activities that state and local governments have implemented, as well as resources for each of the six activities described in Chapter 3, *Identifying Options: Potential LBE Activities and Measures*.

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TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES

State or Title	Description	URL
Examples of State and Local Programs		
California	Title 24, Part 6 of the California Code of Regulations, contains the state's Energy Efficiency Standards for Residential and Non-residential Buildings .	http://www.energy.ca.gov/title24/2005standards/index.html
Illinois	The state has adopted an Energy Conservation Code for State Buildings based on the ASHRAE 90.1 Standard for all state-funded construction projects.	http://www.commerce.state.il.us/dceo/Bureaus/Energy_Recycling/IECC.htm
Maine	Through the Maine State Building Program , the Bureau of General Services has developed a "Maine Benchmark" to assist state agencies in meeting the requirement that public buildings be 20% more energy efficient than code, as directed by Title 5 MRSA 1764-A .	http://www.energymaine.com/other_programs_sbp.htm
Michigan	The Michigan Energy Office State Facility Energy Efficiency program assists state agencies in reducing energy consumption by 10% by 2009, as directed by Executive Directive 2005-4 .	http://www.michigan.gov/cis/0,1607,7-154-25676_25689_33337---,00.html
Minnesota	The Energy Conservation Information for Minnesota State Employees Web site provides strategies for reducing energy consumption in state-owned buildings by 10% by the end of 2006, as directed by Executive Order 05-16 .	http://www.savingenergy.state.mn.us/index.htm

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Missouri	The State has adopted State Building Minimum Energy Efficiency Standards for new and existing state buildings based on the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards.	http://www.sos.mo.gov/adrules/csr/current/10csr/10c140-7.pdf
New Hampshire	The state Building Energy Conservation Initiative analyses state buildings for energy efficiency investment opportunities, such as lighting upgrades; HVAC upgrades; domestic hot water systems; energy management controls; water conservation measures; and building envelope improvements.	http://www.nh.gov/oep/programs/energy/beci.htm
New York	The state New Construction Program provides assistance to state agencies to incorporate energy efficiency measures into the design, construction, and operation of new state buildings.	http://www.nyserda.org/programs/New_Construction/default.asp?i=PON%20815%27
North Carolina	The Utility Savings Initiative provides assistance to each state agency and public university in an effort to reduce energy consumption by at least 20%. The program concentrates on four key areas: utility accounting, operations and maintenance, performance contracting, and awareness and training.	http://www.energync.net/programs/usi.html
Oregon	The State Energy Efficiency Design program assists state agencies in meeting the state's requirement that all renovation and construction projects exceed Oregon's energy conservation building codes by at least 20%. The Oregon Department of Energy provides technical consulting services to help agencies meet standards outlined in the <i>SEED Guidelines</i> .	http://www.oregon.gov/ENERGY/CONS/SEED/SEEDhome.shtml#work
	The Energy Savings Performance Contracting program under the state Department of Energy provides public facilities with assistance in using performance contracts to audit and improve energy use.	http://www.oregon.gov/ENERGY/CONS/school/perfcontract.shtml http://www.oregon.gov/ENERGY/CONS/school/docs/ESPCGuide.pdf (Guide to Performance Contracting)
Utah	The state Energy Efficiency Strategy included 23 policy options, including three LBE activities. This report provides information on how the state screened and selected these policy options.	http://www.swenergy.org/pubs/UT_Energy_Efficiency_Strategy.pdf
	Under its <i>Local Climate Action Plan</i> , Salt Lake City has significantly reduced its energy costs by adopting aggressive energy efficiency measures.	http://www.slcgreen.com/CAP/default.htm
Vermont	The <i>Guidelines for Energy Efficiency Commercial Construction</i> establish minimum energy use and application criteria to complement the Vermont Fire Prevention and Building Code, existing energy requirements in the state, and regional efforts to coordinate and simplify commercial energy codes among neighboring states.	http://publicservice.vermont.gov/energy-efficiency/ee_commstandards.html
Wisconsin	The Wisconsin Energy Initiative was initiated in 1992 to comprehensively address energy savings opportunities, with a goal of reducing energy use in state buildings by 15%. The state Department of Administration (DOA) hired an ESCO to conduct audits of energy use in state facilities and to implement improvements.	http://www.doa.state.wi.us/press_releases_detail.asp?prid=123&divid=4

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Resources for Energy Efficiency in Buildings		
ASHRAE Standard 90.1—Energy Standard for Buildings Except Low-Rise Residential Buildings	This standard is one of a series developed by ASHRAE relating to HVAC systems. ASHRAE standards are often referenced in building codes.	http://www.constructionbook.com/ashrae-standard-901-2007-energy-standard-for-buildings-except-low-rise-residential-buildings-ip-edition-ansi-approved-iesna-co-sponsored-1041-2336/ashrae-standards/
Benchmarking Fact Sheet	This Green California fact sheet describes opportunities for building managers to improve a building's performance through frequent assessment and rating.	http://www.documents.dgs.ca.gov/green/eeproj/BenchmarkingFactSheet.doc
Best Practices Guide	This South Carolina Energy Office document provides guidance to facility directors of each state agency with useful strategies for reducing energy consumptions.	http://www.energy.sc.gov/publications/Energy%20Plan%20Guide%203-07.pdf
<i>Blueprint for Madison's Sustainable Design and Energy Future</i>	The Madison Mayor's Energy Task Force has developed a <i>Blueprint for Madison's Sustainable Design and Energy Future</i> to recommend strategies for the city to lead by example in energy efficiency and renewable energy.	http://www.cityofmadison.com/sustainable_design/
Building Investment Decision Support	This document provides an overview of the qualitative and quantitative benefits of high-performance buildings.	http://www.aia.org/SiteObjects/files/BIDS_color.pdf
California Handbook for Energy Efficiency in State Facilities	The Green California Online Handbook outlines a program for implementing and funding energy efficiency projects in state facilities.	http://www.green.ca.gov/EnergyEffProj/default.htm
<i>Community Jobs in the Green Economy</i>	The Apollo Alliance developed this report to outline the community economic benefits of investing in energy efficiency and renewable energy.	http://www.urbanhabitat.org/files/Community-Jobs-in-the-Green-Economy-web.pdf
Connecticut Report on Energy Efficiency Opportunities at State Facilities	The Connecticut Department of Public Utility Control produced an <i>Energy Efficiency Opportunities at State Facilities</i> report for Governor Jodi Rell that highlights energy efficiency opportunities in state buildings.	http://www.neep.org/newsletter/1Q2005/Report_to_Gov_Rell_05.pdf
<i>Energy-Aware Planning Guide</i>	This guide, developed by the California Energy Commission with the assistance of representatives from 49 local governments, identifies energy-related planning opportunities in land use, transportation, buildings, water use, and waste management.	http://www.energy.ca.gov/energy_aware_guide/P700-93-001.PDF
Energy Conservation Measures	The New Hampshire Office of Energy and Planning has compiled a list of energy conservation measures as a framework around which ESCOs are required to plan upgrades.	http://www.nh.gov/oep/programs/energy/EnergyConservationMeasureDescriptions.htm
<i>Energy and Cost Savings through Telecommunication and Tele-conferencing</i>	The state of Nebraska conducted this study to assess available information on cost and energy saving opportunities through telecommunications and teleconferencing. The report also highlights the features of other state programs.	http://www.nlc.state.ne.us/epubs/E5700/B044-1994.pdf
<i>Energy and Environment: Best Practices</i>	This report by the U.S. Conference of Mayors provides examples of clean energy activities undertaken by local governments across the nation. Topics include public facilities, fleets, and energy sources.	http://www.usmayors.org/climateprotection/AtlantaEESummitCDROMVersion.pdf

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Energy Conservation Standards for New Federal Buildings	In 2006, DOE issued regulations requiring all new federal buildings to be designed in accordance with new energy efficiency standards based on ASHRAE 90.1 Standard.	http://energycode.pnl.gov/pdf/71FR-70275-FedCom.pdf
Energy Design Resources Web Site	The Energy Design Resources Web site provides a guide to energy-efficient design practices, including building commissioning, integrated energy design, and energy-efficient technologies.	http://www.energydesignresources.com/
<i>Energy Efficiency Policy Toolkit</i>	This document, produced by the Regulatory Assistance Project, summarizes clean energy regulatory policies for policymakers. It covers four primary subjects: energy efficiency, renewable energy, distributed resources, and rate design.	http://www.arkansas.gov/psc/EEInfo/EEPToolkit-Pt1.pdf
<i>Energy Efficiency: The Smart Way to Reduce Global Warming Pollution in the Northeast</i>	This report by the National Association of State PIRGs discusses the benefits of energy efficiency in the Northeast, and outlines the potential impacts of energy-efficient policy.	http://www.rggi.org/docs/rggi_energy_8_24_05.pdf
<i>Energy Performance Contracting Success Story</i>	This case study from the Colorado Energy Office provides an overview of the performance contracting activities of one Colorado state agency.	http://www.colorado.gov/energy/in/uploaded_pdf/CDHSCaseStudy.pdf
ENERGY STAR Labeling	The ENERGY STAR certification program is based on EPA's national energy performance rating system. State and local facilities that achieve a rating of 75 or higher (based on a performance rating scale of 1 to 100) and are professionally verified to meet current indoor environment standards are eligible to apply for the ENERGY STAR label.	http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_intro
ENERGY STAR Portfolio Manager	The ENERGY STAR Portfolio Manager software program allows building managers to benchmark the energy performance of their buildings against that of similar buildings across the nation.	http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager
<i>ENERGY STAR Upgrade Manual for Buildings</i>	The ENERGY STAR <i>Upgrade Manual for Buildings</i> is a guide for planning and implementing profitable upgrades that will improve energy performance. The guide also provides information that can assist in the development of a comprehensive energy management plan.	http://www.energystar.gov/index.cfm?c=business.bus_upgrade_manual
<i>Energy Use Policy and Energy Design Guidelines</i>	The Wisconsin Department of Administration's Division of State Facilities has developed <i>Energy Use Policy and Energy Design Guidelines</i> for state buildings.	http://www.doa.wi.gov/category.asp?linkcatid=785&linkid=135&locid=4
EnviroCalc	EnviroCalc is a Vermont Department of Buildings and General Services spreadsheet-based tool designed to estimate the environmental benefits of purchasing recycled-content and energy-efficient products. This tool combines a wide range of available methodologies and models for assessing the environmental impacts of purchasing.	http://bgs.vermont.gov/purchasing/epp
Federal Energy Management Program	FEMP has issued a ruling requiring federal government buildings to achieve at least 30% energy savings over prevailing ASHRAE standards for the private sector.	http://www.ornl.gov/sci/femp/
<i>Financing Energy Efficiency Projects</i>	This ENERGY STAR article describes how energy cost savings can be used to finance energy-efficiency investments.	http://www.energystar.gov/ia/business/government/Financial_Energy_Efficiency_Projects.pdf

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Green Office Guide</i>	The <i>Green Office Guide</i> was developed by the City of Portland, Oregon, Office of Sustainable Development as a guide to resource-saving strategies for companies and agencies to implement within the office.	http://www.rmi.org/images/other/GDS/GDS-GrnOfficeGuide.pdf
<i>Greening the Building and the Bottom Line</i>	This Rocky Mountain Institute report provides case studies of businesses that have experienced tangible productivity benefits as a result of improving energy efficiency in their facilities.	http://www.rmi.org/images/other/GDS/D94-27_GBBL.pdf
<i>A Guide to Energy-Efficient Lighting Upgrades in State Facilities</i>	Developed by the Virginia Department of Mines, Minerals, and Energy, this document provides state agencies with energy-efficient lighting measures. It demonstrates energy-efficient lighting as a cost-effective measure that can produce significant cost savings.	http://www.mme.state.va.us/de/chap8b.html
<i>Guide to Reducing Energy Use in Office Equipment</i>	This guide, developed by the City of San Francisco and the Lawrence Berkeley National Laboratory, describes how to develop and implement programs for reducing electricity use in offices by focusing on "plug load" and proper use of office equipment.	http://eetd.lbl.gov/bea/sf/GuideR6.doc
<i>High Performance Building Renovation Guidelines</i>	The <i>Philadelphia High Performance Building Renovation Guidelines</i> provide guidance on major government renovation projects. Each guideline includes an overview of project materials, implementation strategies, and benefits.	http://www.phila.gov/pdfs/PhiladelphiaGreenGuidelines.pdf
<i>Jobs from Renewable Energy and Energy Efficiency</i>	This fact sheet provides statistics on the economic and jobs impacts of investing in renewable energy and energy efficiency in the U.S.	http://www.eesi.org/briefings/2007/Energy%20&%20Climate/11-8-07_green_jobs/EEREJobsFactSheet_11-8-07.pdf
LEED for Existing Buildings (LEED-EB)	The U.S. Green Building Council's LEED-EB standard maximizes operational efficiency while minimizing environmental impacts. It provides a performance-based benchmark for building owners and operators to measure operations, improvements, and maintenance on a consistent scale.	http://www.usgbc.org/DisplayPage.aspx?CMSPageID = 221
Model Energy Audit Agreement	The Florida Department of Management Services has developed this model for state agencies to use when contracting with private energy auditing firms. The agreement includes requirements for collecting facility information, analyzing existing systems, establishing baselines, recommending energy conservation measures, and reporting results.	http://dms.myflorida.com/content/download/26976/126434/version/1/file/Audit+agreement+(DMS+-+Progress+Energy).doc
Nevada Energy Conservation Plan for State Government	This guidance document is intended to assist agencies in the development of individual energy conservation plans. It provides immediate, short-term, and long-term measures that can be incorporated into agency plans.	http://energy.state.nv.us/conservation%20plan%20for%20state%20government.pdf
New Building Design	This ENERGY STAR Web site provides an number of information resources and tools to assist in designing energy-efficient buildings.	http://www.energystar.gov/index.cfm?c=new_bldg_design.new_bldg_design
<i>New Energy for States: Energy Saving Policies for Governors and Legislators</i>	The Apollo Alliance produced this best practices guidebook to provide state policy makers with information and examples of how energy conservation practices can be incorporated into state policy.	http://www.apolloalliance.org/downloads/resources_apollostate_report.pdf

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
New York "Green and Clean" State Buildings and Vehicles Guidelines	<i>Executive Order No. 111 "Green and Clean" State Buildings and Vehicles Guidelines</i> were developed by NYSERDA to assist state agencies in implementing energy efficiency measures in state buildings.	http://www.nyserda.org/programs/State_Government/exorder111guidelines.pdf
North Carolina Measures to Conserve Energy	The State Energy Office has compiled a collection of web-based conservation resources for residential consumers, schools, government buildings, and industry; these tools range from no- and low-cost to significant capital improvement incentives such as performance contracting.	http://www.energync.net/efficiency
Office Building Energy Use Profile	The National Action Plan for Energy Efficiency has developed a profile of office buildings in the U.S. that provides information on average energy consumption, cost, and end-use figures.	http://www.epa.gov/cleanenergy/documents/sector-meeting/4bi_officebuilding.pdf
Performance Contracting	This Virginia Department of Mines, Minerals, and Energy Web site provides guidance for state agencies on how to use energy performance contracting to improve energy efficiency in state facilities.	http://www.dmme.virginia.gov/DE/StateAgencyProgs/performancecontracting.shtml
<i>Potential for Energy Efficiency, Demand Response, and Onsite Renewable Energy in Texas</i>	This ACEEE report provides a number of policy recommendations for the state of Texas to increase the use of clean energy. One of the recommendations is for a program to implement energy efficiency measures in public buildings at the state and local government level.	http://www.aceee.org/pubs/e073.htm
Rebuild America Technical Assistance Services	The DOE Rebuild America Technical Assistance Services provide targeted tools and analysis that can facilitate major energy efficiency or renewable energy improvements in public local and state governments.	http://www.eere.energy.gov/buildings/program_areas/rebuild_ta_guidance.html
<i>Reduce Energy Use in State Facilities Through Conservation Measures</i>	This Flex Your Power guidance document provides strategies and examples of California efforts to improve energy conservation in state facilities.	http://www.fypower.org/pdf/BPG_State1_Con&Eff.pdf
State Building Operators and Managers Energy Conservation Action Plan	The State of Minnesota has compiled a list of 37 energy conservation measures for immediate implementation, as well as nine items for long-term future implementation, that are expected to significantly improve energy efficiency in state government buildings.	http://www.savingenergy.state.mn.us/managers_plan.htm
State Energy Codes Database	DOE created a State Energy Codes Database that details the status and nature of each state's commercial and residential energy codes.	http://www.energycodes.gov/implement/state_codes/index.stm
Resources for Building Commissioning		
<i>California Commissioning Guide: Existing Buildings</i>	This Green California guide provides an overview of the commissioning process for facility managers and discusses the benefits and costs of commissioning existing buildings.	http://www.documents.dgs.ca.gov/green/commissioninguideexisting.pdf
<i>Cost-Effectiveness of Commercial Buildings Commissioning</i>	This LBNL document provides a quantitative review of energy and non-energy impacts in existing buildings and new construction in the United States.	http://eetd.lbl.gov/EMills/PUBS/Cx-Costs-Benefits.html
Federal Energy Management Program Operations and Maintenance Best Practice Guide	This FEMP guidance document highlights O&M programs for reducing energy costs by 5% to 20% and provides federal energy managers with information and actions aimed at achieving these results.	http://www1.eere.energy.gov/femp/pdfs/omguide_complete.pdf

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Practical Guide for Commissioning Existing Buildings</i>	Produced by the Oak Ridge National Laboratory, the <i>Practical Guide for Commissioning Existing Buildings</i> guides building managers through commissioning processes.	http://eber.ed.ornl.gov/commercialproducts/retrocx.htm
<i>Resource Guide to Building Energy Management</i>	The Iowa Energy Bank Building Energy Management Program uses energy cost savings to assist in the financing of improvements to public and nonprofit facilities.	http://www.iowadnr.com/energy/efficiency/schools.html
Retro-Commissioning Buildings in New York State	This NYSERDA Web site, Retro-Commissioning Buildings in New York State , describes New York's retro-commissioning approach and provides numerous case studies and resources.	http://www.nyserda.org/programs/Commissioning/default.asp
Retro-Commissioning Fact Sheet	This Green California fact sheet was completed as part of the California online handbook for energy efficiency in state facilities. It presents quantified estimates of the benefits and costs of retro-commissioning.	http://www.documents.dgs.ca.gov/green/eeproj/retrocommfactsheet.doc
<i>Retro-Commissioning Handbook for Facility Managers</i>	The <i>Retro-commissioning Handbook for Facility Managers</i> was developed for the Oregon Office of Energy to provide building owners and managers with basic information about retro-commissioning.	http://www.oregon.gov/ENERGY/CONS/BUS/comm/docs/retrocx.pdf
	The Oregon <i>Retro-Commissioning Handbook</i> has an accompanying Commissioning Toolkit that helps guide facility managers through the commissioning process.	http://egov.oregon.gov/ENERGY/CONS/BUS/comm/Cx_Guide.shtml
Resources for Energy Efficiency in K-12 Schools		
American School and University Energy Resources	The American School and University Web site provides numerous energy-related resources for school administrators and facility operators.	http://asumag.com/energy/
Benchmarking Energy Use in Schools	This report by the Oak Ridge National Laboratory discusses methods for benchmarking energy performance in schools.	http://eber.ed.ornl.gov/commercialproducts/98%20Schools%20Energy%20Benchmarking.pdf
Daylighting in Schools: An Investigation into the Relationship Between Daylighting and Human Performance	This report was produced for the California Board on Energy Efficiency to assess the benefits of daylighting on student performance in schools located in California, Colorado, and Washington.	http://www.coe.uga.edu/sdpl/research/daylightingstudy.pdf
<i>Dwindling Support: Annual School O&M Cost Study</i>	This American School and University report addresses the trend of decreasing school maintenance and operation budgets across the country.	http://asumag.com/images/archive/04as21.pdf
Energy Design Guidelines for High Performance Schools	The DOE has published eight reports that provide guidance for designing high performance schools in eight unique climate regions.	http://www.eere.energy.gov/buildings/info/publications.html#energysmartschools
Energy Efficiency and Indoor Air Quality in Schools	This ENERGY STAR report describes the relationship between energy efficiency upgrades, such as HVAC retrofits, and indoor air quality in schools.	http://www.energystar.gov/ia/business/k12_schools/Ee&iaq.pdf

TABLE B.1 ENERGY EFFICIENCY IN BUILDINGS STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Energy Resources for Schools	This EnergyIdeas Clearinghouse fact sheet provides information on energy efficiency in K-12 schools.	http://www.energyideas.org/documents/factsheets/EIC_schools.pdf
EnergySmart Schools "How-to" Guides	The DOE EnergySmart Schools program has developed "how-to" guides for planning, designing financing, and operating and maintaining energy-efficient schools.	http://www.eere.energy.gov/buildings/energysmartschools/howto.html
Energy Solutions for School Buildings	This DOE Office of Energy Efficiency and Renewable Energy Web site provides a wealth of information and examples showing opportunities for energy efficiency in school building design, construction, and operation.	http://www.eere.energy.gov/buildings/info/schools/index.html
<i>ENERGY STAR Building Upgrade Manual</i>	The ENERGY STAR Building Upgrade Manual provides information on implementing a staged upgrade approach to improving energy efficiency in buildings.	http://www.energystar.gov/index.cfm?c=business.bus_upgrade_manual
ENERGY STAR Operations and Maintenance Reports	ENERGY STAR has collected a number of resources on energy-efficient operations and maintenance practices.	http://www.energystar.gov/index.cfm?c=business.bus_om_reports
Energy-Efficient Education – Cutting Utility Costs in Schools	This Texas State Energy Conservation Office guidance document provides ten strategies for reducing energy costs in public schools.	http://www.window.state.tx.us/tspr/energy/
Green Schools: Attributes for Health and Learning	This report by the National Research Council of the National Academies offers recommendations for green school guidelines based on health and productivity benefits associated with green schools.	http://www.masstech.org/renewableenergy/green_schools/NRCreport10_2_06.pdf
Green Schools Program	The Alliance to Save Energy has used this program to reduce energy use in participating schools by 5% to 15%.	http://www.ase.org/section/program/greenschl
<i>Greenhouse Gas Reductions Manual for Schools</i>	The New Jersey Sustainable Schools Network has developed this guidebook for New Jersey schools to help them reduce their GHG emissions.	http://www.globallearningnj.org/GHGmanual.doc
<i>Greening America's Schools: Costs and Benefits</i>	This Capital E report discusses the cost-effectiveness of designing new school buildings with energy-efficient and sustainable features.	http://www.cap-e.com/ewebeditpro/items/O59F11233.pdf
Greening Schools	This Illinois state initiative seeks to inform school district administrators and teachers of ways to incorporate green practices and lessons into school design and operations.	http://www.greeningschools.org/
<i>Hawaii High Performance Schools Guidelines</i>	These technical guidelines were developed by the state Department of Business, Economic Development, and Tourism.	http://www.archenergy.com/services/sda/hi%20high%20performance%20school%20guidelines.pdf
<i>High Performance School Characteristics</i>	This American Society of Heating, Refrigeration, and Air Conditioning Engineers' report addresses the features, benefits, and costs associated with designing high performance schools.	http://www.chps.net/info/ASHRAE%20Journal%20May%202006.pdf
Indoor Air Quality Tools for Schools Program	This EPA program provides information to school district officials, teachers, and parents on ways to monitor and maintain good indoor air quality in schools.	http://www.epa.gov/iaq/schools/index.html

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State or Title	Description	URL
Maine High Performance Schools	The state of Maine has developed a program to provide energy-efficient design and implementation assistance to public schools. The program offers various workshops and seminars, as well as project financing opportunities.	http://www.energycymaine.com/other_programs_hps.htm
<i>Managing the Costs of Green Buildings</i>	This report for the California Sustainable Buildings Task Force describes the costs of incorporating energy and environmental features in several types of buildings, including K-12 schools, and addresses opportunities and strategies for managing these costs.	http://www.ciwmb.ca.gov/greenbuilding/Design/ManagingCost.pdf
Massachusetts Green Schools Initiative	Administered by the Massachusetts Technology Collaborative and the Massachusetts School Building Authority, this program provides school districts with information and resources to help them build high performance schools.	http://www.masstech.org/renewableenergy/green_schools.htm
Menu of ENERGY STAR Offerings for K-12 Education	This table provides school officials with guidance on how ENERGY STAR can assist with energy efficiency upgrades.	http://www.energystar.gov/index.cfm?c=k12_schools.bus_schoolsk12
<i>National Best Practices Manual for Building High Performance Schools</i>	This report presents design strategies covering ten different disciplines, such as building envelope, lighting and electrical systems, ventilation, maintenance, and water conservation.	http://www.epa.gov/iaq/schools/high_performance.html
National Clearinghouse for Educational Facilities	NCEF maintains a collection of resources relevant to improving energy performance in schools.	http://www.edfacilities.org/rl/high_performance.cfm
National Energy Foundation	This non-profit organization promotes the development, dissemination, and implementation of energy-related educational materials.	http://www.nef1.org/
<i>National Review of Green Schools: Costs, Benefits, and Implications for Massachusetts</i>	This report was produced by Capital E for the Massachusetts Technology Collaborative. It describes the financial costs and benefits of green schools compared to conventional schools, and presents the cost-effectiveness of greening schools in Massachusetts.	http://www.cap-e.com/ewebeditpro/items/O59F7707.pdf
National Science Teachers Association	This organization offers guidance to educators and administrators on how to incorporate energy-related learning into classroom studies.	http://www.nsta.org/
School Energy Efficiency Program	This Resource Solutions Group program – funded by the California Public Utilities Commission - offers no-cost technical and financial assistance to California school districts for energy efficiency upgrades.	http://www.schoolsenergyefficiency.com/
<i>School Operations and Maintenance: Best Practices for Controlling Energy Costs</i>	Prepared for DOE, this guidebook is designed to provide school district staff with technical information and information on barriers to implementing energy efficient O&M practices.	http://www.ase.org/uploaded_files/greenschools/School%20Energy%20Guidebook_9-04.pdf
<i>Tips for Implementing a School-Wide Energy Efficiency Program</i>	The Alliance to Save Energy has developed a list of 10 action items for implementing energy efficiency measures in K-12 schools.	http://www.ase.org/content/article/detail/637
Vermont High Performance Schools	The Vermont High Performance Schools partnership coordinates stakeholders from state agencies, industry groups, and trade organizations.	http://www.neep.org/HPSE/vt.php

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State or Title	Description	URL
Washington Sustainable School Protocol Pilot Program	This protocol is a variant of the California CHPS standard that requires high performance in public schools throughout the state.	http://www.k12.wa.us/SchFacilities/SustainableSchools.aspx
Information Resources on Commissioning K-12 Schools		
Commissioning for Schools	This Hawaii Department of Business, Economic Development, and Tourism fact sheet provides information on the estimated costs of commissioning a broad range of school building components.	http://www.hawaii.gov/dbedt/info/energy/publications/schools/commissioning.pdf
<i>The Cost-Effectiveness of Commercial Buildings Commissioning</i>	This Lawrence Berkeley National Laboratory report assesses the cost and benefits of commissioning several types of buildings, including schools.	http://eetd.lbl.gov/emills/PUBS/PDF/Cx-Costs-Benefits.pdf
<i>Lessons Learned from Commissioning 15 Schools</i>	This report identifies a number of commissioning issues and challenges encountered by California schools undergoing building commissioning processes.	http://resources.cacx.org/library/holdings/202.pdf
Information Resources on CHPS Initiatives		
CHPS Best Practices Manual	The Collaborative for High Performance Schools has developed guidance for planning, designing, constructing, and operating high performance schools.	http://www.chps.net/manual/index.htm
CHPS web site	Collaborative for High Performance Schools Web site. The Collaborative for High Performance Schools is a program that has been used in several states that oversees a green building rating program designed exclusively for K-12 schools.	http://www.chps.net/
Massachusetts Collaborative for High Performance Schools	The Massachusetts Technology Collaborative adapted the California CHPS model, building on the model's strongest features and adding more stringent requirements in certain aspects.	http://www.masstech.org/renewableenergy/green_schools/gs_publications.html
New York Collaborative for High Performance Schools	The New York CHPS is based on the Massachusetts CHPS, but is tailored to meet New York state building energy codes.	http://www.emsc.nysed.gov/facplan/documents/NY-CHPS_Sep2007finalNYSERDA.doc
Northeast Energy Efficiency Partnerships	The Northeast Energy Efficiency Partnerships have developed a protocol for designing high performance schools in the Northeast.	http://www.neep.org/HPSE/NECHPS/Northeastchpsmay2007edits.pdf

TABLE B.2 ENERGY MANAGEMENT IN GREEN BUILDINGS

State or Title	Description	URL
Examples of State Programs		
California	The state Green Building Action Plan , and resultant Green Building Program , were designed in response to Executive Order S-20-04 .	http://www.green.ca.gov/GreenBuildings/default.htm Green Building Action Plan: http://www.documents.dgs.ca.gov/green/GreenBuildingActionPlan.pdf
Massachusetts	Executive Office for Administration and Finance Bulletin 12 outlines the " Massachusetts LEED Plus " standard. Agencies are required to follow this new design and construction standard for projects 20,000 square feet or larger.	http://www.mass.gov/Eeoaf/docs/administrativebulletin12.doc
Minnesota	The state Green Building Program began with the publication of a sustainable design guide.	http://www.pca.state.mn.us/oea/greenbuilding/design.cfm
New Jersey	The SmartStart Buildings Initiative was created to provide energy-efficient alternatives to conventional buildings.	http://www.njsmartstartbuildings.com/
New York	NYSERDA's Green Building Services provide assistance for state agencies to ensure compliance with Executive Order 111 .	http://www.nyserda.org/Programs/Green_Buildings/Default.asp
Pennsylvania	The Pennsylvania Governor's Green Government Council Green Building Program provides guidelines and resources for designing and constructing high performance state facilities.	http://www.gggc.state.pa.us/gggc/cwp/view.asp?a=515&q=156866
Wisconsin	The Wisconsin <i>Sustainable Facilities Policy</i> , created in response to Executive Order 145 , sets forth sustainable "guidelines and minimum standards" to be incorporated in all state facilities.	ftp://doafpt04.doa.state.wi.us/master_spec/Sustainable%20Facilities%20Guidelines/Sustainable%20Facilities%20Guidelines.pdf
Resources for Designing State Green Buildings		
<i>A Blueprint for Sustainable State Facilities</i>	The California Sustainable Building Task Force produced <i>A Blueprint for Sustainable State Facilities</i> that provides guidance for interagency collaboration in the development of California's green building program.	http://www.ciwm.ca.gov/GreenBuilding/Blueprint/2001/Blueprint.pdf
<i>Analysis of State Green Building Programs</i>	This report, prepared for the Massachusetts Executive Office of Environmental Affairs and Sustainable Design Roundtable, assesses features of progressive green building programs in four states.	http://www.mass.gov/Eoea/docs/eea/lbe/report_iec.pdf
California Online Guidebook for Energy Efficiency in State Facilities	The Green California Online Guidebook outlines a program for the streamlined implementation of green principles in state buildings.	http://www.green.ca.gov/EnergyEffProj/default.htm
<i>California Commissioning Guide: New Buildings</i>	This Green California guide provides an overview of the commissioning process for facility managers and discusses the benefits and costs of commissioning new buildings.	http://www.documents.dgs.ca.gov/green/commissioninguidenew.pdf
Commissioning Toolkit for Small Buildings	This resource was developed as part of the Green California Online Handbook for energy efficiency in state facilities. It includes a sample commissioning plan and a list of suggested performance tests.	http://www.green.ca.gov/CxToolkit/default.htm

TABLE B.2 ENERGY MANAGEMENT IN GREEN BUILDINGS (cont.)

State or Title	Description	URL
<i>Costing Green: A Comprehensive Cost Database and budgeting Methodology</i>	This report, produced by Davis Langdon, uses actual building construction cost data to compare the cost of green buildings with conventional buildings. The paper also presents a green building budgeting methodology.	http://www.davislangdon.com/USA/Projects/CostingGreen/
Daylighting Standard	The Wisconsin Department of Administration Division of State Facilities has developed a daylighting design standard for new state facilities.	http://www.doa.state.wi.us/dsf/masterspec_view_new.asp?catid=21
Energy Design Resources: Guide to Energy Efficiency Design Practices	This Energy Design Resources Web site provides energy efficiency tools and information for designing and building high performance buildings.	http://www.energydesignresources.com/
<i>Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest</i>	This ACEEE report describes the economic benefits of energy efficiency activities related to natural gas prices in the Midwest. The study examines how energy efficiency can be used to stabilize the natural gas market in the region.	http://www.aceee.org/pubs/u051full.pdf
<i>Green Building Costs and Financial Benefits</i>	This report by Capital E provides an overview of green building opportunities, costs, and benefits particular to the state of Massachusetts.	http://www.cap-e.com/ewebeditpro/items/O59F3481.pdf
Green Building Initiative	The Green Building Initiative's Green Globes™ system allows building managers to assess, rate, and track the progress of environmentally friendly building designs. This Web-based system is integrated with EPA's ENERGY STAR Target Finder tool.	http://www.thegbi.org/home.asp
Green Building Toolkit	The American Institute of Architects has developed a toolkit to provide information on green building. The toolkit includes sample policy language that local governments have used to implement green building policies.	http://www.aia.org/static/state_local_resources/adv_sustainability/
<i>Green Buildings: Breaking New Ground With Sustainable Design</i>	This presentation by the Pennsylvania Governor's Green Government Council examines the cost-effectiveness of green buildings.	http://www.gggc.state.pa.us/gggc/lib/gggc/documents/green_for_le\$01.pdf
<i>Greening Federal Facilities</i>	DOE's <i>Greening Federal Facilities</i> provides strategies for energy efficiency, water conservation, and resource conservation.	http://www1.eere.energy.gov/femp/pdfs/29267.pdf
<i>Greening Georgia Facilities</i>	This report presents the analysis by the Georgia Environmental Facilities Authority of the impacts of various green building programs and policies on the state.	http://www.gefa.org/Index.aspx?page=192#a2
<i>Guideline for High Performance Building</i>	The University of Buffalo's <i>Guideline for High Performance Building</i> uses LEED criteria, but arranges the credits to match the chronology of the pre-design, design, and construction process.	http://wings.buffalo.edu/ubgreen/leos/hbhpguidelines.pdf
Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings	These <i>Guiding Principles</i> were established as a collaborative effort between multiple federal agencies. The memorandum of understanding establishes standards for integrated design, energy performance, water conservation, and indoor environmental quality.	http://www.energystar.gov/ia/business/Guiding_Principles.pdf
<i>High Performance Building Design in Minnesota</i>	The Weidt Group performed a study of the costs and benefits of 41 high performance buildings in Minnesota for the state Office of Environmental Assistance. This report documents the study's findings.	http://www.pca.state.mn.us/oea/publications/highperformance-weidt.pdf

TABLE B.2 ENERGY MANAGEMENT IN GREEN BUILDINGS (cont.)

State or Title	Description	URL
<i>High Performance Building Guidelines</i>	The New York City Department of Design and Construction <i>High Performance Building Guidelines</i> include a chapter on technical strategies for achieving optimal energy efficiency.	http://www.nyc.gov/html/ddc/downloads/pdf/guidelines.pdf
<i>High Performance Building Renovation Guidelines</i>	The <i>Philadelphia High Performance Building Renovation Guidelines</i> provide guidance on major government renovation projects. Each guideline includes an overview of project materials, implementation strategies, and benefits.	http://www.phila.gov/pdfs/PhiladelphiaGreenGuidelines.pdf
<i>High Performance Buildings</i>	This presentation by the Weidt Group describes in visual detail the integrated aspect of high performance buildings design.	http://www.swenergy.org/workshops/2006/Leaf.pdf
<i>High Performance Green Building Guidelines</i>	The Pennsylvania Governor's Green Government Council <i>High Performance Green Building Guidelines</i> are intended to familiarize decision-makers with both theoretical and practical concepts and provide recommendations.	http://www.gggc.state.pa.us/gggc/cwp/view.asp?a=38q=151854
<i>High Performance Green Buildings</i>	This EPA State Clean Energy-Environment Technical Forum paper addresses public sector opportunities for green buildings and their associated energy and environmental benefits.	http://www.keystone.org/html/documents.html
High Performance Guidelines for Public Buildings	The North Carolina High Performance Buildings Guidelines were developed by the Triangle J Council of Governments as part of the statewide high performance buildings pilot project. The Guidelines cover all aspects of design and construction including quality management, site planning, water management, energy and atmosphere, materials and resources, indoor environment and innovation.	http://www.energync.net/programs/docs/buildings/hpg.doc
<i>Impacts on Energy Efficiency and Renewable Energy on Natural Gas Markets</i>	This ACEEE report assesses the positive impacts of energy efficiency and renewable energy activities on the national prices for natural gas.	http://www.aceee.org/pubs/e052full.pdf
<i>Integrated Building Design</i>	Energy Design Resources has published this design brief explaining the process and benefits of integrated building design.	http://www.energydesignresources.com/resource/13/
<i>Jobs from Renewable Energy and Energy Efficiency</i>	This fact sheet provides statistics on the economic and jobs impacts of investing in renewable energy and energy efficiency in the U.S.	http://www.eesi.org/briefings/2007/Energy%20&%20Climate/11-8-07_green_jobs/EEREJobsFactSheet_11-8-07.pdf
<i>Leading by Example: A Green Building Action Plan</i>	This action plan was completed by the Massachusetts Sustainable Design Roundtable as a guide to developing the state's Green Building in State Construction Program . The plan presents five recommendations for state action to develop the program.	http://www.mass.gov/Eoea/docs/eea/lbe/susdesign_report.pdf
LEED Initiatives in Governments and Schools	This U.S. Green Building Council Web site provides a list of LEED requirements in governments and schools, including a number of state government initiatives.	https://www.usgbc.org/ShowFile.aspx?DocumentID=691
<i>Los Alamos National Library (LANL) Sustainable Design Guide</i>	This LANL guide presents a specific planning and design process for creating and meeting sustainability goals, including energy reduction, indoor environmental quality, water quality, and site preservation. The recommendations are based largely on research conducted at the LANL.	http://www.eere.energy.gov/buildings/highperformance/pdfs/sustainable_guide/32763_sustainable_guide.pdf

TABLE B.2 ENERGY MANAGEMENT IN GREEN BUILDINGS (cont.)

State or Title	Description	URL
Michigan Major Project Design Manual for State Agencies	The manual, produced by the Michigan Department of Management and Budget, outlines the requirements for planning major capital outlay design and construction projects for agencies and consultants and lists other requirements for State of Michigan buildings.	http://www.michigan.gov/documents/dmb/DMB494January2007final_187868_7.pdf
Municipal Green Building Compliance Guide	The <i>San Francisco Municipal Green Building Compliance Guide</i> provides guidance for the design and construction of new government buildings in San Francisco.	http://sfenvironment.org/downloads/library/gbcomplianceguide.pdf
Professional Engineer's Guide to the ENERGY STAR Label for Buildings	This ENERGY STAR document provides design modules to help engineers better understand the requirements of their role in ensuring optimal performance in new construction. The document is structured in modules.	http://www.energystar.gov/ia/business/evaluate_performance/pm_pe_guide.pdf
Sustainable Design Guide	This Minnesota guide, developed with assistance from the state Office of Environmental Assistance, provides guidance for incorporating regional values into LEED standards.	http://www.sustainabledesignguide.umn.edu
Sustainable Facilities Policy	The Wisconsin <i>Sustainable Facilities Policy</i> , created in response to Executive Order 145 , sets forth sustainable guidelines and minimum standards to be incorporated in all state facilities.	http://www.doa.state.wi.us/docs/view2.asp?docid=5396
Top 6 Benefits of High Performance Buildings	This fact sheet highlights the findings of a study that quantified the benefits of 41 high performance buildings in Minnesota.	http://www.pca.state.mn.us/oea/publications/highperformance-brochure.pdf
Towards a Climate-Friendly Built Environment	This Pew Center on Global Climate Change report outlines current trends in building-related GHG emissions, barriers to improvement, needs for research and development, and viable policy options for governments.	http://www.pewclimate.org/docUploads/Buildings%5FFINAL%2Epdf
2030 Challenge	Architecture 2030 has issued the 2030 Challenge asking the global building communities to adopt specific fossil fuel reduction targets. This Web site includes case studies and relevant resources.	http://www.architecture2030.org/open_letter/index.html
Washington High-Performance Building Submittal Template	The Washington Department of Administration developed this template to assist planners in complying with standards for designing and constructing high-performance state government buildings. The template includes a worksheet detailing elements of high performance design.	http://www.ga.wa.gov/EAS/green/GASubmittalForms.xls
"Whole-Building" Design Guide	The <i>"Whole-Building" Design Guide</i> is a Web-based portal providing access to information on a wide range of building-related guidance.	http://www.wbdg.org/index.php
Resources on the Costs of Green Buildings		
Costs and Financial Benefits of Green Buildings	This comprehensive report to the California Sustainable Building Task Force by Capital E and LBNL reviews existing research on the financial implications of green buildings.	http://www.usgbc.org/Docs/News/News477.pdf
Green Building Costs and Financial Benefits	This report provides a summary of the report to the California Sustainable Building Task Force by Capital E and LBNL. This report applies the findings of the original within the context of the state of Massachusetts.	http://www.cap-e.com/ewebeditpro/items/O59F3481.pdf
U.S. General Services Administration (GSA) LEED Cost Study	The GSA produced a <i>LEED Cost Study</i> to estimate the costs of developing green federal facilities using the rating system.	http://www.resourcesaver.org/file/toolmanager/CustomO16C45F60590.pdf

TABLE B.2 ENERGY MANAGEMENT IN GREEN BUILDINGS (cont.)

State or Title	Description	URL
Resources for Designing High Performance Schools		
<i>Best Practices Manual</i>	The <i>Best Practices Manual</i> produced by the California Collaborative for High Performance Schools includes a list of energy and performance criteria.	http://www.chps.net/manual/documents.htm
<i>Building Healthy, High Performance Schools</i>	This Environmental Law Institute report describes the components, challenges, and keys to high performance school building programs in three states.	http://www.elistore.org/reports_detail.asp?ID = 10925
<i>Energy Design Resources: Resources for Schools</i>	This Energy Design Resources Web site contains a number of design briefs, online tools, and case studies on high performance schools.	http://www.energydesignresources.com/category/schools/
<i>High-Performance Schools Guidelines</i>	The New York Collaborative <i>High-Performance Schools Guidelines</i> includes a score sheet for benchmarking schools.	http://www.emsc.nysed.gov/facplan/
Maine High Performance Schools Program	This Efficiency Maine program provides local school officials and their design teams with information regarding energy-efficient technologies and funding mechanisms available through the state high performance schools program.	http://www efficiencymaine.com/other_programs_hps.htm
New Jersey High Performance Schools Information Center	Created in response to an executive order that requires all schools to incorporate LEED standards, this information clearinghouse provides resources on planning, design, construction, and operation of high performance educational facilities in New Jersey.	http://www.hpsnj.org/
High Performance Design Tools		
ENERGY STAR Target Finder	ENERGY STAR offers a Target Finder tool for determining appropriate energy targets for new buildings.	http://www.energystar.gov/index.cfm?c = new_bldg_design.bus_target_finder
ENERGY-10	ENERGY-10 is a conceptual design tool for conducting “whole-building” analysis and evaluating energy and cost savings achieved by applying energy-efficient strategies.	http://www.nrel.gov/buildings/energy10.html
Leadership in Energy and Environmental Design	The U.S. Green Building Council’s LEED system is a widely-accepted measurement for rating the performance of buildings.	http://www.leedbuilding.org/
Resources for Case Studies		
Green Building Technology Database	The state of North Carolina Green Building Technology Database collects information on green buildings in the state. The database allows searches by 140 techniques and sorts by location, building type, and site condition.	http://www.ncgreenbuilding.org/site/ncg/
High Performance Building Database	The DOE High Performance Building Database collects data on high performance buildings.	http://www.eere.energy.gov/buildings/database/
High Performance Federal Building Database	The DOE High Performance Federal Building Database showcases examples of high performance federal government buildings.	http://www.eere.energy.gov/femp/highperformance/

**TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT
STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES**

State or Title	Description	URL
Examples of State and Local Programs		
Arizona	The Arizona State Procurement Office has developed a policy to guide state agencies in purchasing energy-efficient products, as required by Arizona Revised Statute 34-451 .	http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/34/00451.htm
California	The Department of General Services issued a <i>Memo on Procurement of Energy-Efficient Products</i> directing state agencies to purchase only those products that meet recommended standards. Department guidelines for major construction projects require that equipment, appliances, and roofing systems purchased for these projects be ENERGY STAR compliant.	http://www.documents.dgs.ca.gov/osp/sam/memos/mm01_14.pdf
Connecticut	The Environmental Purchasing Program requires the state to buy products that may contain recycled content, minimize waste, conserve energy or water, and reduce the amount of toxins disposed of or consumed.	http://www.das.state.ct.us/purchase/Epp/Index.htm
Massachusetts	The state's Environmentally Preferable Products (EPP) Procurement Program features ENERGY STAR-labeled appliances, air conditioners, and office equipment. and provides resources to assist states and other organizations in developing procurement programs.	http://www.mass.gov/?pageID=osdtopic&L=3&sid=Aosd&L0=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+(EPP)+Procurement+Program
	<i>Green Spending: An Update on Massachusetts' Environmental Purchasing Program Incorporating ENERGY STAR Office Equipment</i> provides information on Massachusetts' experiences, including associated benefits and challenges, with incorporating ENERGY STAR products into an existing environmentally preferable products purchasing program.	http://www.cee1.org/gov/purch/mass-case.pdf
Minnesota	The Environmentally Preferable Purchasing program assists state agencies in meeting the energy-efficient product procurement requirements of Executive Order 04-08. The program includes a quarterly newsletter and procurement workshops.	http://www.pca.state.mn.us/oea/epp/index.cfm
New York	NYSERDA has developed energy-efficient product procurement standards for a number of products, as required by Article 5, Section 5-108a of the New York State Laws.	http://www.nyserda.org/programs/equipstds.asp
	New York City WasteLe\$\$ program provides assistance for municipal agencies in complying with the energy-efficient product purchasing requirements laid out in NYC Local Law 30 of 2003 .	http://www.nyc.gov/html/nycwasteless/html/at_agencies/energy_efficiency.shtml
North Carolina	Executive Order 156 requires state agencies to purchase ENERGY STAR qualified electronic equipment. The state Environmentally Preferable Procurement program provides agencies with model templates for developing procurement policies.	http://www.p2pays.org/epp/stagencies.asp
Vermont	To assist state agencies in meeting the energy-efficient product procurement requirements of Executive Order 14-03 , the state Environmentally Preferable Program provides numerous resources, including a tool for calculating the environmental benefits of using ENERGY STAR products.	http://www.bgs.state.vt.us/PCA/epp/envirocalc_guide.doc

TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Resources on Energy-Efficient Product Procurement		
Consortium for Energy Efficiency (CEE) State and Local Government Purchasing Initiative	The CEE initiative was launched to assist government officials in procuring energy-efficient products. The CEE has produced four purchasing guidebooks designed to inform policymakers and purchasing officials.	http://www.cee1.org/gov/purch/guides.php3
<i>Energy-Efficient Procurement Resources</i>	Washington State University has compiled this collection of energy-efficient procurement information resources.	http://www.energy.wsu.edu/documents/engineering/Proc_Resources.pdf
<i>Energy-Efficient Purchasing by State and Local Governments</i>	This CEE paper reviews state and local purchasing programs and discusses how such programs are initiated. The paper also examines the strategic role of governments in fostering the development of energy-efficient product markets.	http://www.cee1.org/gov/purch/2004_purchasing.pdf
<i>Energy-Efficient Traffic Signals</i>	This Consortium for Energy Efficiency fact sheet provides information on the benefits of converting traffic signals to energy-efficient LEDs.	http://www.cee1.org/resrc/facts/led-fx.pdf
ENERGY STAR Purchasing and Procurement	This ENERGY STAR Web site provides savings calculators for energy-efficient products and equipment.	http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing
FEMP Purchasing Energy Efficiency Requirements	FEMP issues energy efficiency specifications for more than 50 types of products commonly purchased by federal government agencies.	http://www1.eere.energy.gov/femp/procurement/index.html
Flex Your Power Best Practices	Flex Your Power, a California PUC initiative, has developed multiple local government guidance documents on various topics. Many of these guides address issues of relevance to energy-efficient product procurement.	http://fypower.org/res/tools/res_search_results.html?skip=220&keywords=&topic=all&res_facts=on&region=all
<i>Guide to Energy-Efficient Heating and Cooling</i>	This ENERGY STAR resource provides comprehensive checklists for improving HVAC system energy efficiency.	http://www.energystar.gov/ia/products/heat_cool/GUIDE_2COLOR.pdf
<i>Helping Agencies Buy Energy-Efficient Products</i>	DOE has developed this paper to provide information to federal purchasers on the benefits of purchasing energy-efficient products and how to obtain assistance in developing energy-efficient product procurement programs.	http://www1.eere.energy.gov/femp/pdfs/eeproducts_fs.pdf
<i>Institutional Purchasing: Save Money, Time and the Environment</i>	This ENERGY STAR document provides an overview of the benefits of purchasing energy-efficiency products at the institutional level.	http://www.energystar.gov/ia/partners/rep/pt_reps_purch_procu/files/general_purchasing_new_10-4.pdf
<i>Jobs from Renewable Energy and Energy Efficiency</i>	This fact sheet provides statistics on the economic and jobs impacts of investing in renewable energy and energy efficiency in the U.S.	http://www.eesi.org/briefings/2007/Energy%20&%20Climate/11-8-07_green_jobs/EEREJobsFactSheet_11-8-07.pdf
NYSERDA Minimum Efficiency Standards	Following legislative mandate, NYSERDA established minimum efficiency standards for specific energy-using products and appliances purchased by or for New York State or any of its agencies.	http://www.nyserdera.org/programs/equipStandardRegulations.pdf

TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Online Guide to Energy-Efficient Commercial Equipment	This American Council for an Energy Efficient Economy (ACEEE) guide provides building owners and managers with information on purchasing office equipment. The guide provides detailed information on applications that favor one type of equipment over another.	http://aceee.org/ogeece/ch1_index.htm
Online Guide to Energy-Efficient Office Equipment	This ACEEE guide provides an overview of the costs and benefits of purchasing different energy-efficient office products.	http://www.aceee.org/ogeece/ch5_office.htm
<i>Potential Energy, Cost, and CO₂ Savings from Energy-Efficient Government Purchasing</i>	This LBNL report estimates the potential energy, cost, and CO ₂ savings from government purchasing of energy-efficient products. The report presents detailed FEMP analyses of 21 products.	http://www1.eere.energy.gov/femp/pdfs/government_purchasing.pdf
<i>Procuring Energy-Efficient Products</i>	This document was produced by the Consortium for Energy Efficiency as a guidebook for state and local government purchasing agencies.	http://www.cee1.org/gov/purch/gb1-rev2.pdf
Purchasing Specifications for Energy-Efficient Products	FEMP's <i>Purchasing Specifications for Energy-Efficient Products</i> helps government purchasers identify types of highly efficient products. A list of all ENERGY STAR-qualified or FEMP-designated products is available for download.	http://www.eere.energy.gov/femp/procurement/
State and Local Government Purchasing Initiative	Though no longer active, this Consortium for Energy Efficiency project provides information on state and local government purchasing, including guidebooks and case studies.	http://www.cee1.org/gov/purch/purch-main.php3
<i>Strength in Numbers: An Introduction to Cooperative Procurements</i>	This National Association of State Procurement Officials resource provides an overview of the benefits of and strategies for entering into cooperative procurement agreements.	http://www.naspo.org/documents/CooperativePurchasingBrief.pdf
Resources on Environmentally Preferable Product Procurement		
<i>Assessment of Massachusetts' EPP Procurement Program</i>	This Office of Environmental Affairs report provides a history of the state EPP procurement program, describes the program's basics, and includes quantitative and qualitative program benefits.	http://www.mass.gov/Aosd/docs/EPP/EPP%20Program%20Assessment%20Final%20Report%20Dec02.doc
California Environmentally Preferable Purchasing Best Practices Manual	The Green California <i>Environmentally Preferable Purchasing Best Practices Manual</i> provides state purchasing officials with information on environmentally friendly products and services.	http://www.green.ca.gov/EPP/Introduction/default.htm
Environmentally Preferable Purchasing	This New American Dream Web site serves as a clearinghouse of resources on environmentally preferable purchasing. It includes case studies and model policies as well as guidance on developing comprehensive purchasing programs.	http://www.newdream.org/work/rpn.php
Environmentally Preferable Purchasing Database	This EPA database provides information on EPPs and services sorted by category.	http://yosemite1.epa.gov/oppt/epstand2.nsf
EPA Environmentally Preferable Purchasing	This EPA program encourages and assists agencies in purchasing products and services that have a reduced impact on the environment.	http://www.epa.gov/opptintr/epp/pubs/about/about.htm

TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Final Guidance on Environmentally Preferable Purchasing	This EPA guidance was developed in response to federal Executive Order 13101, which requires federal agencies to implement EPP purchasing policies.	http://www.epa.gov/epp/pubs/guidance/finalguidance.htm#GuidingPrinciple1
Green Procurement Initiative	The California Energy Commission has compiled a list of state, county, and local purchasing programs.	http://www.cec.org/files/PDF/ECONOMY/Green-Procurement_Initiatives_en.pdf
<i>Green Purchasing: A Guide for Local Governments and Communities</i>	This document, developed by the New Jersey Department of Environmental Protection, provides guidance to New Jersey communities in establishing and implementing green purchasing activities.	http://www.state.nj.us/dep//opsc/docs/green_purchasing_guide_local_governments.pdf
<i>Green Spending: A Case Study of Massachusetts' Environmental Purchasing Program</i>	This EPA report provides background information on the state's purchasing program and outlines its achievements. It also includes a discussion of program challenges that might inhibit the success of the program.	http://www.epa.gov/epp/pubs/case/mass.pdf
<i>Guide to Greening Government Through Powerful Purchasing Decisions</i>	The National Association of Counties has developed an Environmental Purchasing Starter Kit to assist local governments. The kit was produced with the assistance of EPA.	http://www.naco.org/Content/ContentGroups/Programs_and_Projects/Environmental1/Energy/Introduction.pdf
Hennepin County, Minnesota Lead by Example Initiative Guidelines	The Board of Commissioners in Hennepin County has authorized the creation of a Lead by Example Incentive Fund that will award a combined \$100,000 to county departments that invest in EPPs. The Board has developed a set of guidelines to assist department staff in meeting the program's requirements.	http://www.hennepin.us/portal/site/HCIInternet/menuitem.3f94db53874f9b6f68ce1e10b1466498/?vgnextoid=43ac9bb82e9fc010VgnVCM1000000f094689RCRD
<i>Implementation Guidelines for Model Policy</i>	These guidelines for implementing a model procurement policy were developed by Alameda County. The county's model policy has been adopted by several California local governments.	http://www.ciwmb.ca.gov/epp/LawPolicy/AlaPollmp.doc
<i>Introduction to Cooperative Procurement</i>	The National Association of State Procurement Officials has developed a primer on the benefits and strategies of cooperative procurement.	http://www.naspo.org/content.cfm/id/About_Coop
King County Environmental Purchasing Policy	King County, Washington, provides county personnel with information and technical assistance to help them identify and evaluate economical and effective EPP. This Web site includes environmental purchasing bulletins that focus on different purchasing opportunities.	http://www.metrokc.gov/procure/green/index.htm
Massachusetts Recycled and EPP and Services Guide	The Massachusetts <i>Recycled and EPP and Services Guide</i> provides information on how to use state contracts, tips on writing green specifications, definitions, and model "buy recycled" policies. The <i>Product, Contract, and Vendor Information</i> section provides up-to-date details on existing state contracts for EPPs, including contract terms, vendor contact information, and pricing, when available.	Recycled and EPP and Services Guide: http://www.mass.gov/?pageID=osdterminal&L=4&L0=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+(EPP)+Procurement+Program&L3=Download+Publications%2C+Reports+and+Tools&sid=Aosd&b=terminalcontent&f=EPP_osd_es_epp_download_publications_guides&csid=Aosd

TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Massachusetts Recycled and EPP and Services Guide (cont.)		Product, Contract, and Vendor Information: http://www.mass.gov/?pageID=osds_uhopic&L=3&L0=Home&L1=Buy+from+a+Contract&L2=Environmentally+Preferable+Products+(EPP)+Procurement+Program&sid=Aosd
Minnesota Environmentally Preferable Purchasing Guide	The Minnesota <i>Environmentally Preferable Purchasing Guide</i> is a reference tool for Minnesota government and school purchasers. It provides strategies to reduce energy consumption and protect natural resources by identifying environmentally preferable alternatives in 16 green building product areas and building services.	http://greenguardian.com/EPPG/
National Association of State Procurement Officials	This organization works with state procurement officials to facilitate information exchange and to aid purchasers in obtaining cost-effective products through cooperative procurement.	http://www.naspo.org/
National Institute of Governmental Purchasing	This non-profit organization provides assistance and information to public purchasers on a range of issues.	http://www.nigp.org/genlinfo/AboutUs.htm
Responsible Purchasing Network	The Responsible Purchasing Network is a project initiated by purchasing stakeholders. The Network has compiled multiple responsible purchasing guides on fleets, electronics, office equipment, and paints.	http://www.responsiblepurchasing.org/
Information Resources for End-of-Life Management of Electronic Products		
Electronics Waste Management in the United States	This EPA report presents a national analysis of current trends in disposal and management of electronic products.	http://www.epa.gov/epaoswer/hazwaste/recycle/ecycling/manage.htm
End-of-Life Management	The Federal Electronics Challenge has developed a Web site to provide federal facilities with information on purchasing green electronics products. The Challenge maintains a collection of resources on end-of-life management.	http://www.federelectronicschallenge.net/resources/eolmngt.htm
Guidelines for the Procurement, Use, and End-of-Life Management of Electronic Equipment	This report was developed for the California Integrated Waste Management Board to provide state agencies with tools to implement cost-saving procurement practices that have minimal energy and environmental impacts.	http://www.ciwm.ca.gov/Electronics/Procurement/PUEOL/FinalGuide.pdf
Model Policies for Energy-Efficient and EPP Procurement		
Environmental Purchasing Policies 101	The Center for a New American Dream has developed this guidance document to provide purchasers with a collection of best practices relating to environmentally preferable purchasing. This document includes a sample EPP purchasing policy.	http://www.cec.org/files/pdf//NAGPI%20Policy%20Paper2e.pdf
Model Environmentally Preferable Products Policy	The King County Environmental Purchasing Program has established this model policy for cities and other organizations.	www.kingcounty.gov/operations/procurement/Services/Environmental_Purchasing/~/_media/operations/.../EP_Policy_Model.ashx

TABLE B.3. ENERGY-EFFICIENT PRODUCT PROCUREMENT STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
New American Dream Collection of Green Purchasing Policies	The New American Dream has collected a list of annotated examples of green purchasing policies.	http://www.newdream.org
Tools and Certification for Energy-Efficient and EPP Procurement		
ENERGY STAR Purchasing and Procurement	ENERGY STAR provides certification for energy-efficient products. In general, ENERGY STAR-qualified products use up to 50% less energy than conventional products of the same utility.	http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing
ENERGY STAR Purchasing and Procurement Briefings	ENERGY STAR provides monthly Webcasts that identify the resources available, including the product calculators.	http://www.energystar.gov/index.cfm?c=business.bus_internet_presentations_actionplans
EPEAT	EPEAT is a system to help purchasers compare and select computer equipment based on a product's environmental attributes. EPEAT certification is intended to meet ENERGY STAR qualification standards for energy efficiency.	http://www.epeat.net/
Green Purchasing Training	The Office of the Federal Environmental Executive provides opportunities for free online training and frequent classroom training to procurement officials interested in green purchasing.	http://ofee.gov/gp/training.asp
Green Seal	Green Seal is a non-profit organization that establishes standards for EPPs and administers its own certification program. The organization produces Choose Green Reports that provide information on a range of EPPs.	http://www.greenseal.org/

TABLE B.4 GREEN POWER PURCHASES STATE EXAMPLES, TOOLS, AND RESOURCES

State or Title	Description	URL
Examples of State Programs		
Connecticut	The State of Connecticut has locked in electric supply for state facilities through June 30, 2012. The supply contracts include 19% (not including RPS) to be green power from Class I renewable sources. This equates to 112 million kWh of green power annually. When RPS requirements are factored in, as of 2012 28% of the electricity used by Connecticut State Government will come from Class I renewable resources.	http://www.ctclimatechange.com/documents/DetailedUpdatesonRAs2006Progress.pdf CTClean Energy Options: http://www.ctcleanenergyoptions.com/index.htm
Iowa	The Department of Natural Resources provides implementation guidance for Executive Order 41 , which includes a requirement that state agencies obtain 10% of energy from renewable sources.	http://www.iowadnr.com/energy/eo41.html
Maine	More than 800 individual state accounts were aggregated to facilitate green power purchasing. As of November 2005, approximately 30% of the state government's electricity was generated by renewable-energy resources -- mostly hydropower and biomass.	http://www.maineenergyinfo.com/docs/Maine%20Renewable%20Energy.pdf
New Jersey	Over 180 accounts have been aggregated to purchase approximately 12% of the state's energy from renewable sources.	http://www.state.nj.us/dep/dsr/bscit/GreenPower.pdf
New York	NYSERDA's Power Naturally program assists state agencies in meeting the renewable energy requirements established by Executive Order 111 .	http://www.powernaturally.org/
Oregon	The <i>Renewable Energy Action Plan</i> requires that 25% of all state government electricity needs be met by new renewable energy sources by 2010 and 100% by 2025.	http://www.oregon.gov/ENERGY/RENEW/docs/FinalREAP.pdf
Wisconsin	The Governor's Task Force of Energy Efficiency and Renewables has drafted a report on the cost of using renewable energy use in state government buildings.	http://energytaskforce.wi.gov/docview.asp?docid=32
Resources on Green Power Purchases		
A Check List for Local Government Green Power RFPs	The Local Government Commission has developed this checklist to guide local governments through the competitive process of selecting green power providers.	http://www.lgc.org/freepub/energy/factsheets/fact3.html
Assessing the Economic Development Impacts of Wind Power	This report provides examples that document the economic development implications of investing in wind power.	http://www.nationalwind.org/publications/economic/econ_final_report.pdf
Clean Energy Funds: An Overview of State Support for Renewable Energy	This LBNL report provides examples of states that have used system benefits charges to promote renewable energy throughout state and local organizations and communities.	http://eetd.lbl.gov/ea/ems/reports/47705.pdf
<i>Customer Aggregation: An Opportunity for Green Power</i>	This NREL report assists state and local governments in negotiating lower green power prices with utilities.	http://www.eere.energy.gov/greenpower/resources/pdfs/lb29408.pdf
DSIRE	The Database of State Incentives for Renewable Energy provides information on state and local government renewable energy and energy efficiency incentives.	http://www.dsireusa.org/

TABLE B.4 GREEN POWER PURCHASES STATE EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Emerging Markets for Renewable Energy Certificates: Opportunities and Challenges</i>	This LBNL report describes the current market for RECs. It provides an overview of how RECs are marketed and identifies key challenges to broader expansion of REC markets.	http://www.eere.energy.gov/greenpower/resources/pdfs/37388.pdf
Environmental Resources Trust	The Environmental Resources Trust certifies RECs through its EcoPower certification program.	http://www.ert.net/
EPA Clean Energy-Environment Guide to Action	Chapter 5.5, Fostering Green Power Markets, of the EPA <i>Clean Energy-Environment Guide to Action</i> provides states with a framework for developing suitable environments in which green power markets can become effective and productive.	http://www.epa.gov/solar/documents/gta/guide_action_chap5_s1.pdf
<i>EPA Communications Guide for Green Power Partners</i>	The EPA Green Power Partnership has developed this communications and outreach guide to assist partners in promoting their organizations' green power purchases.	http://www.epa.gov/greenpower/pubs/index.htm
EPA Green Power Partnership	EPA's Green Power Partnership is a voluntary partnership between EPA and organizations that are interested in buying green power. Through this program, EPA supports organizations that are buying, or planning to buy, green power.	http://www.epa.gov/greenpower/
FEMP Renewable Energy	The DOE FEMP program provides information on federal government initiatives for using renewable energy, including on-site generation.	http://www1.eere.energy.gov/femp/renewable_energy/index.html
<i>Green Power Marketing in the United States, A Status Report</i>	This NREL report provides an overview of current trends in green power prices and the state of renewable energy technologies.	http://erendev.nrel.gov/greenpower/resources/pdfs/40904.pdf
Green-e	Green-e is a voluntary certification and verification program for wholesale, retail, and commercial electricity products, tradable renewable certificates, and utility green pricing programs in the United States. Green-e certifies about 100 retail and wholesale green power marketers across the country.	http://www.green-e.org/
<i>Guide to Purchasing Green Power</i>	This EPA Green Power Partnership guide provides information on planning and implementing green power purchases.	http://www1.eere.energy.gov/femp/pdfs/purchase_green_power.pdf
<i>Power Quality Problems and Renewable Energy Solutions</i>	This Massachusetts Technology Collaborative report looks at the relative benefits of renewable energy compared to conventional energy generation with regard to power reliability, power quality, and power availability.	http://www.mtpc.org/Project%20Deliverables/PP_General_Power_Quality_Study.pdf
<i>Jobs from Renewable Energy and Energy Efficiency</i>	This fact sheet provides information on existing and projected energy efficiency- and renewable energy-related jobs in the U.S. by sector.	http://www.eesi.org/briefings/2007/Energy%20&%20Climate/11-8-07_green_jobs/EEREJobsFactSheet_11-8-07.pdf
Power Scorecard	The Power Scorecard is a Web-based information tool created by a coalition of environmental groups, which enables consumers to compare the environmental impacts of green power and conventional power products.	http://www.powerscorecard.org/

TABLE B.4 GREEN POWER PURCHASES STATE EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate</i>	This University of California – Berkeley report shows the economic benefits of investing in renewable energy in terms of jobs created.	http://rael.berkeley.edu/files/2004/Kammen-Renewable-Jobs-2004.pdf
<i>Regulator's Handbook on Renewable Energy Programs & Tariffs</i>	This report by the Center for Resource Solutions provides an overview of state renewable energy programs. The report includes case studies on different states' methods of implementing renewable energy programs.	http://www.resource-solutions.org/policy/TariffHandbook/Handbook_on_Renewable_Energy_Programs_&_Tariffs.pdf
Renewable Energy Certificates: An Attractive Means for Corporate Customers to Purchase Renewable Energy	This World Resources International report provides an overview of RECs, including funding opportunities for procuring RECs and steps for selecting appropriate options.	http://pdf.wri.org/gpmdg_corporate_5.pdf
Renewable Energy Certificates and Generation Attributes	This Regulatory Assistance Project report provides an overview of the concept behind marketing renewable energy attributes.	http://www.raponline.org/Pubs/IssueLtr/RenewableEnergyCertificates.pdf
<i>Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century</i>	This report was developed by the American Solar Energy Society to describe the existing and projected breakdown of renewable energy and energy efficiency-related employment in the United States.	http://www.ases.org/ASES-JobsReport-Final.pdf
<i>Switching to Green</i>	This World Resources Institute report provides guidance to offices and retail companies on procuring green power. The report gives an overview of steps to consider when deciding to switch to green power.	http://pdf.wri.org/switching_to_green.pdf
<i>Tackling Climate Change in the U.S.: Potential Carbon Emissions Reductions from Energy Efficiency and Renewable Energy</i>	This report by the American Solar Energy Society addresses the potential contributions of different energy-efficient and renewable technologies toward GHG emissions reductions. It provides an overview of the status and potential of each renewable energy resource type.	http://maine.sierraclub.org/Maine%20Cool%20Tackling%20Climate%20Change%20in%20the%20US.pdf
<i>Tradable Renewable Certificates Handbook</i>	This handbook provides information on basics and benefits of RECs and provides an overview of the regulator's role in facilitating REC transactions.	http://www.resource-solutions.org/policy/TRChandbook/TRC_Handbook.htm
<i>Treatment of Renewable Energy Certificates, Emissions Allowances, and Green Power Programs in State Renewable Portfolio Standards</i>	This LBNL report provides an overview of the treatment of renewable energy attributes in states that enforce renewable portfolio standards. The report identified implementation issues that arise when RECs are used for RPS compliance.	http://eetd.lbl.gov/ea/ems/reports/62574.pdf
<i>Trends in Utility Green Pricing</i>	This NREL report presents data on trends in green pricing for renewable energy products and provides an overview of utility green pricing program implementation since 1999.	http://www.nrel.gov/docs/fy07osti/40777.pdf

TABLE B.4 GREEN POWER PURCHASES STATE EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Using Wind Power to Hedge Volatile Electricity Prices for Commercial and Industrial Customers in New York</i>	This report, prepared for the New York State Energy Research and Development Authority, provides a financial analysis of the comparative benefits of relying on wind power as compared to conventional fossil fuels.	http://www.powernaturally.org/About/documents/WindHedgeExSumm.pdf
Resources for Estimating the Benefits of Green Power Purchases		
CACP Software	The National Association of Clean Air Agencies' CACP is a Windows-based software tool designed to help state and local governments develop harmonized strategies to reduce both GHG and air pollution emissions. It allows users to create a cross-sector emissions inventory at the entire community level or at the government operations level.	http://www.cacpsoftware.org/
eGRID	EPA's eGRID is a comprehensive source of data on the environmental characteristics of domestic electric power generation. It compiles data from 24 federal sources on emissions and resource mixes for virtually every power plant and company that generates electricity in the United States. It also provides user search options, including aspects of individual power plants, generating companies, states, and regions of the power grid.	http://www.epa.gov/cleanenergy/egrid/index.htm
EPA Green Power Locator	This tool enables users to locate green power options available in each state.	http://www.epa.gov/greenpower/pubs/gplocator.htm
EPA Power Profiler Tool	This EPA tool provides emission factors for any utility, to help calculate the pollution benefits of energy consumption reduction.	http://www.epa.gov/cleanenergy/powerprofiler.htm
GHG Equivalencies Calculator	Local governments can use this calculator to translate GHG emissions reductions into more tangible quantities (e.g., vehicle miles reduced or trees planted).	http://www.usctcgateway.net/tool/
Green-e	Green-e is a voluntary certification and verification program for wholesale, retail, and commercial electricity products, RECs, and utility green pricing programs.	http://www.green-e.org/
Power Scorecard	The Power Scorecard is a Web-based information tool created by a coalition of environmental groups. It enables consumers to compare the environmental impacts of green power and conventional power products.	http://www.powerscorecard.org/

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES

State or Title	Description	URL
Examples of State and Local Programs		
Arizona	The <i>Arizona Working Group on Renewable Energy and Energy Efficiency</i> has advised the governor to require state facilities to produce 5% of their own energy needs through renewable sources by 2012.	http://www.azsolarcenter.com/policy/documents/pdfs/GovREEE_ReportFinal.pdf
California	The <i>Green Building Action Plan</i> calls for all state-owned buildings to reduce the volume of energy purchased from the grid by 20% by 2015 from 2003 levels by pursuing energy efficiency measures and on-site renewable technologies.	http://www.documents.dgs.ca.gov/green/GreenBuildingActionPlan.pdf
	The City of San Francisco passed a resolution calling for the installation of solar panels and wind turbines on city-owned property in the city.	http://www.californiasolarcenter.org/sfbond2001.html
Connecticut	The Connecticut Clean Energy Fund's On-Site Renewable DG Program assists public and private entities with installing renewable energy generating equipment on site.	http://www.ctcleanenergy.com/YourBusinessorInstitution/OnSiteRenewableDG/tabid/95/Default.aspx
Iowa	In FY 2005, the <i>SIF/C</i> began implementing a comprehensive energy efficiency upgrade project that included installation of a biomass boiler capable of burning wood waste. The boiler will be integrated into a CHP system.	http://www.iowadnr.com/energy/ebank/sfp.html
Utah	The governor's Energy Policy calls for the state to establish programs to evaluate the potential for installing on-site renewable energy sources in state buildings to reduce energy consumption by 2% by 2015 compared to 2005 levels.	http://energy.utah.gov/energy/governors_priorities/utah_policy_to_advance_energy_efficiency_in_the_state.html
Wisconsin	The state Renewable Energy Task Force has proposed renewable energy targets that include a recommended strategy of incorporating on-site generation at state facilities.	http://energytaskforce.wi.gov/docview.asp?docid=35
Resources on Renewable Energy Generation		
<i>Annual Report on U.S. Wind Power Installation, Cost, and Performance Trends: 2006</i>	This DOE report provides statistics on national wind power capacity, turbine size and cost, wind power prices, and policy efforts driving wind power development.	http://www1.eere.energy.gov/windandhydro/pdfs/41435.pdf
APS Energy	APS Energy has partnered with multiple local governments to install solar energy systems at municipal facilities. This APS Energy Web site provides information on a sample of these projects.	http://www.aps.com/my_community/Solar/Solar_22.html
American Wind Energy Association	The American Wind Energy Association has a number of helpful resources available to consumers interested in on-site renewable energy, including fact sheets and cost estimates.	http://www.awea.org/pubs/
Clean Power Estimator	This tool provides quick cost-benefit analysis for PV, solar thermal, wind, and energy efficiency technologies for residential and commercial buildings in specified geographic regions.	http://www.consumerenergycenter.org/renewables/estimator/index.html
<i>Community Jobs in the Green Economy</i>	This Apollo Alliance and Urban Habitat report describes the potential for job creation from investing in energy efficiency and renewable energy.	http://www.urbanhabitat.org/node/931

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Database of State Incentives for Renewable Energy	This database is a comprehensive source of information on state, local, and selected federal incentives that promote renewable energy and energy efficiency.	http://www.dsireusa.org
EPA Power Profiler Tool	This EPA tool provides emission factors for any given utility, to help calculate the pollution benefits of energy consumption reduction.	http://www.epa.gov/cleanenergy/powerprofiler.htm
FEMP Renewable Energy	The DOE FEMP program provides information on federal government initiatives for using renewable energy, including on-site generation.	http://www1.eere.energy.gov/femp/renewable_energy/index.html
Find Solar	Find Solar is a collaborative project involving DOE and the American Solar Energy Society that enables a user to calculate the costs, savings, and GHG emissions reductions of converting a portion of a building's energy use to solar generation.	http://www.findsolar.com/index.php?page=rightforme
Fuel Cell Technology	This Web site, developed as a component of the Whole Building Design Guide, provides information on fuel cell technologies and applications.	http://www.wbdg.org/resources/fuelcell.php
<i>Fuel Cells</i>	This EPA fact sheet presents the benefits and costs behind fuel cell technology as a form of energy generation. It also addresses the barriers to large-scale fuel cell technology adoption.	http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BULTK/\$File/fuelcells.pdf
Geothermal Heat Pumps	This DOE Web site provides information on the basics of geothermal exchange. The site includes fact sheets on the logistics of using geothermal heat pumps in different building types.	http://www1.eere.energy.gov/geothermal/heatpumps.html
Geothermal Resources Maps	DOE has collected information on the location of geologic resources that could make geothermal applications potentially feasible.	http://www1.eere.energy.gov/geothermal/maps.html
Government Facilities Case Studies	The Geo-thermal Heat Pump Consortium has collected fact sheets on municipal government examples of geothermal applications.	http://www.geoexchange.org/geothermal/publications/cat_view/37-case-studies/60-government-facilities.html?limit=10&limitstart=0&order=name&dir=DESC
<i>Green Power from Landfill Gas</i>	This EPA fact sheet provides information and statistics on how landfills can be used to produce electricity in a manner that is protective of natural resources.	http://www.epa.gov/lmop/docs/LMOPGreenPower.pdf
<i>Guide to Photovoltaic System Design and Installation</i>	This California Energy Commission guidebook provides information on issues to consider when designing and installing PV solar power systems.	http://www.abcsolar.com/pdf/2001-09-04_500-01-020.pdf
<i>Guide to Purchasing Green Power</i>	This EPA guide provides information on purchasing green power. Chapter 7 addresses on-site renewable energy projects.	www.eere.energy.gov/femp/pdfs/purchase_green_power.pdf
<i>High Performance Technologies: Solar Thermal & Photovoltaic Systems</i>	This DOE report provides information on building zero-energy homes using solar thermal and PV technologies. Local governments can find information on site planning and orientation of solar thermal and PV applications.	http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/41085.pdf
<i>Jobs from Renewable Energy and Energy Efficiency</i>	<i>Jobs from Renewable Energy and Energy Efficiency</i> . This fact sheet provides information on existing and projected energy efficiency- and renewable energy-related jobs in the U.S. by sector.	http://www.eesi.org/briefings/2007/Energy & Climate/11-8-07_green_jobs/EEREJobsFactSheet_11-8-07.pdf

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Money from the Sun: An Investor's Guide to Solar-Electric Profits</i>	This article describes the long term benefits of investing in solar energy systems.	http://www.scottsdaleaz.gov/Assets/documents/greenbuilding/SolarEconomics.pdf
<i>Potential for Energy Efficiency, Demand Response, and On-site Renewable Energy to Meet Texas's Growing Electricity Needs</i>	This ACEEE report provides policy recommendations to meet growing energy demand in Texas. Recommendations include development of the public buildings program and providing incentives for onsite renewable energy.	http://aceee.org/pubs/E073.htm
<i>Power Quality Problems and Renewable Energy Solutions</i>	This Massachusetts Technology Collaborative report looks at the relative benefits of renewable energy compared to conventional energy generation with regard to power reliability, power quality, and power availability.	http://www.mtpc.org/Project%20Deliverables/PP_General_Power_Quality_Study.pdf
ProForm	This tool, developed by LBNL, calculates the financial indicators and reduced GHG emissions of renewable energy projects.	http://poet.lbl.gov/Proform/
<i>Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate</i>	This University of California – Berkeley report shows the economic benefits of investing in renewable energy in terms of jobs created.	http://rael.berkeley.edu/files/2004/Kammen-Renewable-Jobs-2004.pdf
PV Watts	This NREL performance calculator estimates the energy and cost savings from grid-connected PV systems from various locations around the country. The calculator allows the user to adjust various data assumptions to accommodate for regional and system specifics.	http://rredc.nrel.gov/solar/calculators/PVWATTS/
<i>Renewable Energy and Distributed Generation Guidebook</i>	This Massachusetts Division of Energy Resources report provides an overview of implementation issues associated with siting and generating distributed energy and connecting to the grid.	http://www.mass.gov/Eoca/docs/doer/pub_info/guidebook.pdf
<i>Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century</i>	This report was developed by the American Solar Energy Society to describe the existing and projected breakdown of renewable energy and energy efficiency-related employment in the United States.	http://www.ases.org/ASES-JobsReport-Final.pdf
Renewable Energy Basics	NREL provides basic information on seven forms of renewable energy applications.	http://www.nrel.gov/learning/re_basics.html
RETScreen	This tool was developed by the Canada national Natural Resources department to evaluate the energy production and savings, emissions reductions, and financial viability of different types of energy efficiency and renewable energy investments, including on-site renewable energy generation.	http://www.retscreen.net/ang/d_o_view.php
<i>Single, Paired, and Aggregated Anaerobic Digester Options</i>	This study presents an overview of the feasibility of installing anaerobic digesters to turn dairy farm waste into usable biofuels.	http://www.manuremanagement.cornell.edu/Docs/Perry%20Feas%20Study%20fact%20sheet%20FINAL%205-31-05.pdf
Solar Energy Technologies Program	DOE's Solar Energy Technologies Program leads the effort to research, develop, and implement technologies toward improving solar energy. Through such programs as the Million Solar Roofs Initiative and the Solar America Initiative , the federal government partners with state and local governments to deploy the program's resources.	http://www1.eere.energy.gov/solar/about.html

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>Solar Water Heaters for Swimming Pools</i>	This fact sheet provides information on the technical aspects and benefits of installing solar water heaters on swimming pools.	http://www.infinitepower.org/newfact/new96-825-No11.pdf
Supplemental Environmental Projects Toolkit	EPA's toolkit helps state governments pursue clean energy projects through enforcement settlements. The toolkit provides information on the SEP process, including a step-by-step regulatory roadmap for pursuing SEPs.	http://www.epa.gov/cleanenergy/documents/sep_toolkit.pdf
<i>Wind Energy Economics</i>	The Iowa Energy Center has developed this resource to provide information on the cost-effectiveness of wind turbines.	http://www.energy.iastate.edu/renewable/wind/wem/wem-13_econ.html
Resources on Distributed Generation		
<i>The Benefits of Distributed Resources to Local Governments</i>	This NREL report addresses how local government can benefit from increased deployment of DG technologies. The benefits addressed within the report include environmental improvement, economic development, system reliability, price stability, and disaster relief support.	http://www.clean-power.com/research/distributedgeneration/DGandLocalGovernments.pdf
Calculating Reliability Benefits	This EPA CHP Partnership Web site provides information on how to calculate the reliability benefits of installing CHP systems as opposed to non-CHP back-up power generators.	http://www.epa.gov/chp/basic/benefits.html
<i>California Distributed Energy Resources Guide</i>	The CEC has developed an online guide to techno-economic characteristics of several clean energy generation technologies.	http://www.energy.ca.gov/distgen/equipment/equipment.html
<i>Catalog of CHP Technologies</i>	This EPA CHP Partnership manual provides an overview of multiple CHP systems. It also provides information on the benefits and costs of CHP applications.	http://www.epa.gov/chp/basic/catalog.html
CHP Calculation Methodology for LEED-NC v2.2 EA Credit 1	This document provides guidance on accounting for CHP systems when using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system for new construction.	https://www.usgbc.org/ShowFile.aspx?DocumentID=1354
CHP Emissions Calculator	This EPA tool can be used to compare the anticipated CO ₂ , SO _x , and NO _x emissions from a CHP system to the emissions from a conventional system.	http://www.epa.gov/chp/basic/calculator.html
CHP Guide #1: Q&A on Combined Heat and Power for Multi-family Housing	This Department of Housing and Urban Development guide provides information to affordable housing administrators on the benefits of CHP systems.	http://www.hud.gov/offices/cpd/library/energy/pdf/chpguide1.pdf
CHP on Campus Online Guidebook	The International District Energy Association has developed this guidebook to demonstrate the feasibility of siting	http://www.districtenergy.org/guidebook/CHP.Webdoc.Homepage.htm
Combined Heat and Power: An Emerging Technology	This ENERGY STAR article describes the energy, environmental, and economic benefits of using CHP technology.	http://www.energystar.gov/index.cfm?c=healthcare.ashe_nov_dec_2005
<i>Combined Heat and Power: Capturing Wasted Energy</i>	This ACEEE report provides a basic primer on CHP technology and an overview of the benefits of CHP.	http://www.aceee.org/pubs/ie983.htm

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
Combined Heat and Power Resource Guide	This guide was prepared by the Midwest CHP Application Center to provide answers to FAQs pertaining to CHP and to provide basic 'rules of thumb' about CHP applications.	http://www.chpcentermw.org/pdfs/Resource_Guide_10312005_Final_Rev5.pdf
<i>Customer-Owned Utilities and Distributed Energy: Potentials and Benefits</i>	This DOE report provides an overview of the potential for distributed energy technologies, including CHP for customer-owned utilities, including municipally-owned utilities.	http://www.ornl.gov/~webworks/cpr/y2007/rpt/124344.pdf
Distributed Energy Case Study Database	DOE maintains this database of distributed energy projects, including CHP. Users can narrow database searches based on market sector, power size range, prime mover, thermal energy use, and fuel type.	http://www.eere.energy.gov/de/casestudies/
Distributed Energy Information Resources	This DOE Distributed Energy Program Web site provides numerous resources on distributed generation and CHP applications, technologies, and market studies.	http://www.eere.energy.gov/de/publications.html
Distributed Generation Strategic Plan	This CEC guidance document includes a section on opportunities for state agency involvement in promoting DG development.	http://www.energy.ca.gov/reports/2002-06-12_700-02-002.PDF
EPA Combined Heat and Power Partnership	This EPA program works closely with energy users, the CHP industry, state and local governments, and other stakeholders to support the development and implementation of CHP technology.	http://www.epa.gov/chp
<i>Experiences with Combined Heat and Power During the August 14, 2003 Northeast Blackout</i>	This Oak Ridge National Laboratory report addresses the reliability benefits of CHP systems in light of the 2003 blackout, in which many non-CHP back-up generators failed at New York City hospitals.	http://www.ornl.gov/~webworks/cpr/y2001/pres/121715.pdf
FEMP DG and CHP Programs	DOE's FEMP program uses this Web site to provide information on DG and CHP technologies to facility managers. The site includes substantial information on various applications of these forms of clean energy generation.	http://www.ornl.gov/sci/femp/
Funding Database	The EPA CHP Partnership maintains a database of funding opportunities available for CHP projects.	http://www.epa.gov/chp/funding/funding.html
<i>Gas-Fired Distributed Energy Resource Technology Characterizations</i>	This NREL report provides techno-economic characteristics of several clean energy generation technologies.	http://www.eea-inc.com/dgchp_reports/TechCharNREL.pdf
<i>Guidance on CHP Systems in LEED Rating Systems</i>	This methodology provides information on how the benefits of CHP systems can be recognized under the energy requirements of the LEED rating system for new construction.	http://www.usgbc.org/ShowFile.aspx?DocumentID=1384
<i>High-Density Housing, Mega-Developments: An Assessment of Arizona and Nevada Comparing Central Power to a Distributed Energy Approach</i>	This report assesses the relative contribution potential of distributed energy and CHP technologies for reducing energy costs and minimizing impacts on the environment resulting from energy generation.	http://www.eea-inc.com/natgas_reports/FinalMegaDevelopmentReport.pdf
HUD CHP Screening Tool	The Department of Housing and Urban Development has created this tool to help housing administrators determine the feasibility of installing CHP systems at multi-family housing developments.	http://www.hud.gov/offices/cpd/library/energy/software.cfm

TABLE B.5 CLEAN ENERGY SUPPLY STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>An Integrated Assessment of the Energy Savings and Emissions-Reduction Potential of Combined Heat and Power</i>	This American Council for an Energy-Efficient Economy paper provides an overview and a prospectus of U.S. deployment of CHP technologies across different sectors, such as buildings and district energy services.	http://www.aceee.org/industry/Resources/assessment.pdf
International District Energy Association	The IDEA Web site provides information on district energy systems, which can often be configured to use CHP. IDEA maintains a list of CHP-related district energy resources.	http://www.districtenergy.org/DE_CHPResearch.htm#IEA%20Report%20Summaries
Monetizing Environmental Benefits	This EPA CHP Partnership Web site provides guidelines for calculating the monetary value of environmental benefits resulting from CHP systems as compared to SHP systems.	http://www.epa.gov/chp/funding/monetizing.html
Municipal Wastewater Treatment Facilities	This EPA CHP Web site provides information on the compatibility of CHP systems with wastewater treatment facilities.	http://www.epa.gov/CHP/markets/wastewater.html
<i>Opportunities for CHP at Wastewater Treatment Facilities</i>	This EPA guide describes the benefits of installing CHP systems at wastewater treatment facilities that have anaerobic digesters. It is intended primarily for facility operators and CHP project developers.	http://www.epa.gov/chp/documents/chp_wwtf_opportunities.pdf
<i>Procurement Guide: CHP Financing</i>	This EPA CHP Partnership guide provides an overview of financing strategies for CHP applications.	http://www.epa.gov/combdhpp/documents/pguide_financing_options.pdf
<i>Public Buildings Manual</i>	The National Association of State Energy Officials published this manual as a guide to state and local governments. The manual addresses financing, benchmarking, retro-commissioning, and CHP applications.	http://naseo.org/committees/buildings/documents/NASEO_Public_Buildings_Manual.pdf
<i>The Role of Distributed Generation in Power Quality and Reliability</i>	This NYSEDA report assesses the power quality and supply reliability benefits of distributed generation technologies, including on-site renewable energy generation.	http://www.eea-inc.com/dgchp_reports/The_Role_of_DG_in_Power_Quality_Final_Report_R1.pdf
Screening Sheet for CHP Applications	This EPA Web page provides a list of criteria that local governments can use to assess the appropriateness of installing CHP systems at their facilities.	http://www.epa.gov/chp/project-development/qualifier_form.html
<i>State Opportunities for Action: Update of States' Combined Heat and Power Activities</i>	This ACEEE report provides detailed information on state legislative policies toward CHP.	http://www.aceee.org/pubs/ie032full.pdf
<i>Survey of Emissions Models for Distributed Combined Heat and Power Systems</i>	This ACEEE report surveys different models for quantifying the emission-reducing benefits of CHP technologies. The report describes how each model operates and handles emissions and it also identifies the best qualities of each model so that a more efficient, universally useful tool can be designed.	http://aceee.org/pubs/ie071.htm
United States Combined Heat and Power Association (USCHPA)	The USCHPA provides numerous resources for state and local governments, including information for policymakers interested in increasing government involvement in CHP-related state and regional actions.	http://www.uschpa.org/i4a/pages/index.cfm?pageid=1
<i>Using Distributed Energy Resources</i>	This DOE fact sheet provides an overview of the benefits of using distributed energy resources, such as on-site energy generating technologies, and describes the process for determining the need for distributed energy resources at a facility.	http://www1.eere.energy.gov/femp/pdfs/31570.pdf

TABLE B.6 OTHER ENERGY SAVING OPPORTUNITIES STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES

State or Title	Description	URL
Examples of State and Local Programs		
California	The Sacramento Municipal Utility District developed a Shade Tree Program that has resulted in average energy cooling load savings of 153 kWh per year. Its Cool Roof Program has resulted in 20% savings on cooling loads as well.	http://www.smud.org/en/news/Documents/08archive/09_29_08_tree_benefits_estimator.pdf
Ohio	The Ohio EPA Office of Pollution Prevention produced a report on <i>State Examples of Pollution Prevention Regulatory Integration</i> .	http://www.epa.state.oh.us/opp/p2regint/othrstat.pdf
Pennsylvania	The Municipal Waste Program regulates the collection, transportation, transfer, processing, composting, beneficial use, and disposal of municipal waste. Pennsylvania has 49 active landfills and five resource recovery (waste-to-energy) facilities that manage over 20 million tons/year of municipal waste.	http://www.depweb.state.pa.us/landrecwaste/cwp/view.asp?a=1216&q=462227
Texas	The state legislature directed SECO to develop a set of water efficiency standards for state agencies. This document describes the office's water efficiency guidelines for state buildings and equipment.	http://www.seco.cpa.state.tx.us/waterconservation.pdf
Vermont	The state Comprehensive Environmental & Resource Management Program was developed to identify opportunities for increasing environmental sustainability in government operations.	http://www.bgs.state.vt.us/pdf/CERMP.pdf
Resources on Additional Energy-Saving Opportunities		
FEMP Water Efficiency	DOE has produced guidance materials to assist federal agencies in complying with federal government water efficiency improvement requirements. The material includes water management plan guidelines and best management practices.	http://www1.eere.energy.gov/femp/water/
GreenCO	GreenCO developed a guideline of best management practices on how to reduce water consumption and protect water quality.	http://www.greenco.org/index.htm?bmps.htm~contentFrame
<i>Making Business Sense of Energy Efficiency and Pollution Prevention</i>	This ACEEE report exhibits a number of case studies and provides various resources related to pollution prevention.	http://aceee.org/p2/index.htm
Pollution Prevention Information Clearinghouse	The Pollution Prevention Information Clearinghouse is an EPA information service dedicated to reducing and eliminating industrial pollutants through technology transfer, source reduction, education, and public awareness.	http://www.epa.gov/opptintr/ppic/index.htm
Protect and Conserve Water	The Whole Building Design Guide Web site contains links to ten FEMP best management guides for protecting and conserving water.	http://www.wbdg.org/design/conserve_water.php
Recycling Measurement	EPA developed a voluntary, standard methodology for measuring recycling rates. Presently, few state or local governments define recycling in the same way, use the same approach for measuring recycling rates, or include the same materials in their rates.	http://www.epa.gov/epaoswer/non-hw/recycle/recmeas/
Tree Benefit Estimator	The American Public Power Association-designed Tree Benefit Estimator presents a Web-based method for estimating the amount of energy savings, capacity savings, and carbon and CO ₂ sequestration resulting from trees planted individually in urban and suburban settings.	http://www.appanet.org/treeben/calculate.asp

TABLE B.6 OTHER ENERGY SAVING OPPORTUNITIES STATE AND LOCAL EXAMPLES, TOOLS, AND RESOURCES (cont.)

State or Title	Description	URL
<i>The Urban Heat Island, Photochemical Smog, and Chicago</i>	This study addresses the heat island effect in the city of Chicago. The study considers unique local features of the problem and provides recommended solutions.	http://www.epa.gov/heatisland/resources/pdf/the_urban_heat_island.pdf
Water to Air Model	The Pacific Institute has created two models—one for agricultural districts, the other for urban districts—that quantify the energy and air emissions implications of water management decisions.	http://www.pacinst.org/resources/water_to_air_models/index.htm
Watergy	The Alliance to Save Energy's Watergy program provides information on reducing energy use associated with water supply and wastewater treatment on both the supply and demand side, and provides a range of case studies highlighting such efforts.	http://www.watergy.org/
WaterSense	EPA's WaterSense Web site provides generation information on water efficiency opportunities, water-efficient products and services, and links to more information.	http://www.epa.gov/watersense/