

## Recommended Reading List for Solar and Renewable Energy Technologies

### Biogas and Biomass Energy

#### Books

*A Sourcebook on Wood Waste Recovery and Recycling In the Southeast.* C.T. Donovan Associates, Inc. Southeast Regional Biomass Program, Department of Energy, Muscle Shoals, AL. 1994.

*Biodiesel Production Potential from Industrial Rapeseed in the Southeast.* P.L. Raymer and D.L. Van Dyne. Southeast Regional Biomass Program, Department of Energy, Muscle Shoals, AL. 1992. (contract # TV-8644V)

*Woody Biomass Analysis for 13 Southeast States.* T.A. Waldrop and R.T. Brooks. Southeastern Regional Biomass Program, Department of Energy, Muscle Shoals, AL. 1994. (Technical Note B52. TVA/ONRED/LER-84/6)

*Anaerobic Digestion of Biomass.* D. Chynoweth and R. Isacson. Elsevier Science Publishing Company, Chapman & Hall Publications, Florence, KY. 1987.

*Handbook of Biogas Utilization.* C. Ross and J. Walsh. Southeast Regional Biomass Energy Program, Department of Energy, Muscle Shoals, AL. 1996.

*Livestock Waste: A Renewable Resource.* American Society of Agriculture Engineers, St. Joseph, MI. 1994.

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### Geothermal Energy

#### Books

*Commercial Ground-Source Heat Pump Systems, a collection of papers from ASHRAE transactions.* Kevin D. Rafferty and Stephen P. Kavanaugh. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA. 1995.

*Geothermal Heat Pumps: Introductory Guide.* Oklahoma State University, Division of Engineering Technology for National Rural Electric Cooperative Association, Rural Electric Research, and Electric Power Research Institute., Arlington, VA: NRECA; Palo Alto, Calif.: EPRI; Stillwater, Okla.: OSU. Distributed by International Ground Source Heat Pump Association. 1997.

*Ground-Source Heat Pumps: Design of Geothermal Systems for Commercial and Institutional Buildings.* Stephen P. Kavanaugh and Kevin Rafferty. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Atlanta, Ga. 1997.

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### Micro-Hydroelectric Energy

#### Books

*Micro-hydro Power: A Guide for Development Workers.* Peter Fraenkel Peter et al. Intermediate Technology Publications in association with the Stockholm Environment Institute, London, UK. 1991.

*Micro-hydro Design Manual: A Guide to Small-scale Water Power Schemes.* Adam Harvey et al. Intermediate Technology, London, UK. 1993.

*Guide to Development of Small Hydroelectric and Micro-hydroelectric Projects in North Carolina.* John L. Warren and Paul Gallimore. North Carolina Alternative Energy Corporation, Research Triangle Park, NC. 1983.

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## **Passive Solar/Energy Efficient Buildings**

### **Non-Residential**

#### **Books**

*Bioclimatic Building Design.* David Lloyd Jones. Penguin Putnam Inc. 1998.

*Climate Considerations in Building and Urban Design.* Baruch Givani, John Wiley & Sons. 1998.

*Climate Design.* Donald Watson and Kenneth Labs. McGraw-Hill Book Co., New York, NY. 1983.

*Daylight in Architecture.* Benjamin H. Evan. McGraw-Hill, New York, NY. 1971.

*Daylight for Sustainable Design.* Mary Guzowski. McGraw-Hill. 2000.

*The HOK Guidebook to Sustainable Design.* Sandra F. Mendler, AIA, William Odell, AIA. John Wiley & Sons. 2000.

#### **Websites**

*Whole Building Design Guide*, a world wide web site located at: <http://www.wbdg.org>.

*Sustainable Building Sourcebook, Passive Solar Section*, a world wide web site located at: <http://www.greenbuilder.com/Sourcebook/PassiveSol.htm>

### **Residential**

#### **Books**

*Builder's Guide Series: Mixed-Humid Climates.* Joe Lstiburek, PE. Building Science Corporation. 1998.

*Buildings for a Sustainable America.* Burke Miller. American Solar Energy Society, Boulder, CO. 1997.

*Healthy House Building for the New Millenium – A Design and Construction Guide.* John Bower. The Healthy House Institute, Bloomington, IN. 2000.

*Passive Solar Design Strategies: Guidelines for Home Building.* Sustainable Buildings Industry Council, Washington, DC.

*Passive Solar Energy.* Bruce Anderson and Malcolm Wells. Brickhouse Publishing Co. Inc., Andover, MA. 1994.

*Residential Windows: A Guide to New Technologies and Energy Performance.* John Carmody, Stephen Selkowitz and Lisa Hescong. W.W. Norton & Company. 1996.

*Solar Homes for North Carolina, vol. 2.* State Energy Office, NC Department of Administration, Raleigh, NC. 1999.

*Sunbook, 2nd. Edition.* State Energy Office, NC Department of Administration, Raleigh, NC. 1999.

*The Climatic Dwelling: An Introduction to Climate-Responsive Residential Architecture.* Eoin O. Cofaigh and John A. Olley. James & James Science Publishers Ltd., London, UK. 1996.

*The Efficient House Sourcebook.* Robert Sardinsky. Rocky Mountain Institute, Snowmass, CO. 1992.

*The Passive Solar Design and Construction Handbook.* Michael J. Crosbie. John Wiley and Sons Ltd., New York, NY. 1997.

*The Passive Solar House: Using Solar Design to Heat and Cool Your Home.* James Kachadorian. Chelsea Green Publishing Co., White River Junction, VT. 1997.

#### **Solar Center Factsheets**

*A Word to the Wise – SC114*

*Passive Cooling for Your North Carolina Home - SC113*

*Passive Solar Design Checklist - SC122*

*Passive Solar Options for North Carolina Homes - SC102*

*Passive Solar Retrofit for North Carolina Homes - SC101*

*Sources of Solar House Plans - SC116*

*Summer Shading and Exterior Insulation for North Carolina Windows - SC103*

*Sunspace Design Basics - SC121*

## **Passive Solar Interiors**

#### **Books**

*Healthy House Building for the New Millenium--A Design and Construction Guide. Part 5: Interior Finishing.* John Bower. The Healthy House Institute, Bloomington, IN. 2000.

*The Solar Home...How to Design and Build a House You Heat with the Sun.* Mark Freeman, Chapter 23. Stackpole Books, Mechanicsburg, PA. 1994.

*The Passive Solar House...Using Solar Design to Heat & Cool Your Home.* James Kachadorian, Chapter 10. Real

Goods Independent Living Books, Chelsea Green Publishing Company, White River Junction, Vermont. 1997.

### **Solar Center Factsheet**

*Decorating Your Passive Solar Home* - SC100

## **Passive Solar Sites**

### **Book**

*Energy-Efficient and Environmental Landscaping*. Anne Simon Moffat and Marc Schiler. Appropriate Solutions Press, South Newfane, VT. 1994.

### **Website**

*Michigan State University Extension, Home Maintenance and Repair, Energy Efficient Interior Design,-01500594*, a world wide web site located at: <http://www.msue.msu.edu/imp/mod02/01500594.html>.

### **Solar Center Factsheet**

*Energy-Saving Landscaping for Your Passive Solar Home* - SC109

*Selecting a Site for Your Passive Solar Home* - SC107

## **Photovoltaics**

### **Books**

*From Space to Earth: The Story of Solar Electricity*. John Perlin. AATEC Publications, Ann Arbor, MI. 1999.

*Connecting to the Grid, Third Edition*. Chris Larsen. NC Solar Center, Raleigh, NC. 2000.

*Photovoltaics in Buildings: A Design Handbook for Architects and Engineers*. Fredrich Sick and Thomas Edge. James and James Science Publishers, London. 1996.

*Solar Radiation Data Manual for Flat-Plate and Concentrating Collectors*. William Marion and Stephen Wilcox. National Renewable Energy Laboratory, Golden, CO. 1994. NREL/TP-463-5607.

*National Electrical Code, NEC 1999*. National Fire Protection Agency Inc., Quincy, MA. 1998.

*Achieving Energy Independence One Step at a Time*. Jeffrey R. Yago. Dunimis Technology Inc., Gum Spring, VA. 1999.

*Stand-Alone Photovoltaic Systems: A Handbook of Recommended Design Practices*. Photovoltaic Design Assistance Center, Sandia National Laboratories, Albuquerque, NM. 1995. SAND87-7023.

*Photovoltaic Applications for Disaster Relief*. William R. Young. Florida Solar Energy Center, Cocoa, FL. 1995.

*The New Solar Electric Home*. Joel Davidson and Richard J. Komp. AATEC Publications, Ann Arbor, MI. 1990.

*The Solar Electric Independent Home Book*. Paul Jeffrey Fowler. Fowler Enterprises, Worthington, MA. 1991.

*Practical Photovoltaics: Electricity from Solar Cells (3rd edition)*. Richard J. Komp. AATEC Publications, Ann Arbor, MI. 1999.

*Photovoltaic Engineering Handbook*. France Lasnier and Tony Gan Ang. Adam Hilger, New York, NY. 1990.

*Building Integrated Photovoltaic Designs for Commercial and Institutional Structures*. Patrina Eiffert, Ph.D. and Gregory J. Kiss. National Renewable Energy Laboratory, Golden, CO. 2000. NREL/BK-520-25272.

*Photovoltaic Systems Engineering*. Roger Messenger and Jerry Ventre. CRC Press, Boca Raton, FL. 2000.

### **Journals/Magazines**

*Home Power*. Home Power Inc., PO Box 520, Ashland, OR 97520.

*Solar Today*. American Solar Energy Society, 2400 Central Avenue, G-1, Boulder, CO 80301-2843.

*Solar Energy*. Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK.

*PHOTON International*. Solar Verlag GmbH, Wilhelmstrasse 34, 52070 Aachen, Germany.

*Renewable Energy World*. James & James Science Publishers Ltd., 35-37 William Road, London NW1 3ER, UK.

*REFOCUS*. Elsevier Advanced Technology, PO Box 150, Kidlington, Oxford OX5 1AS, United Kingdom.

### **Newsletters**

*PV Insider's Report*. 1011 W. Colorado Blvd., Dallas, Texas 75208.

*Photovoltaic News*. 4539 Old Auburn Road, Warrenton, VA 20187.

*CADDET Renewable Energy Newsletter*. CADDET Centre for Renewable Energy, ETSU, 168 Harwell, Didcot, Oxfordshire OX11 0QJ, United Kingdom.

## **Solar Center Factsheets**

*Photovoltaic Applications* - SC124

*The Photovoltaic Power System for the NCSU Solar House*  
- SC115

*Siting of Active Solar Collectors and Photovoltaic Modules*  
- SC112

*Photovoltaics: Electricity from the Sun* - SC108

## **Solar Tax Credits**

### **Publications**

*Guidelines for Determining the Tax Credit for Investing in Renewable Energy Property.* North Carolina Department of Revenue, Raleigh, NC, 2000.

*National Summary Report on State Financial and Regulatory Incentives for Renewable Energy.* Chris Larsen and Henry Rogers. North Carolina Solar Center, Raleigh, NC. 2000.

### **Website**

*Database of State Incentives for Renewable Energy*, a world wide web site located at: <http://www.dsireusa.org>.

## **Solar Water Heating**

### **Books**

*Consumer Guide to Solar Energy.* S. Sklar and K. Sheinkopf. Bonus Books, Inc., Chicago, IL. 1991.

*Solar Water and Pool Heating Design and Installation Manual.* Harrison, Holbaugh and Merrigan. Florida Solar Energy Center, Cocoa, FL. 1992.

*The Water Heater Workbook: Hands-on Guide to Water Heaters.* Elemental Enterprises, Monterey, CA. 1992.

*Directory of SRCC Certified Solar Water Heating System Ratings and Directory of SRCC Certified Solar Collector Ratings.* Solar Rating and Certification Corporation, c/o Florida Solar Energy Center, Cocoa, FL.

*Solar Engineering of Thermal Processes.* Duffie and Beckman. John Wiley & Sons, Inc., New York, NY. 1991.

*Active Solar Heating Systems Design Manual and Active Solar Heating Systems Installation Manual.* American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Atlanta, GA. 1990.

*Modern Hydronic Heating.* John Siegenthaler. Delmar Publishers. 1995.

### **Articles**

*Let the Sun Provide Your Shower.* S. Baldassari; Countryside & Small Stock Journal (78):55, November/December 1994.

*Simulation-Based Ratings for Solar Hot Water Systems.* J. D. Burch, J. C. Huggins, B. D. Wood and J. W. Thornton. Solar '93: Proceedings of the 1993 Annual Conference of the American Solar Energy Society 316-321, 1993.

*Solar Hot Water for the Home.* J. Davidson, B. Wood. Mechanical Engineering 118(8):60-62, 1996.

*Solar Hot Water for the 90's.* M. Rosenbaum. Solar Today 5(5):20, September/October 1991.

*Solar Water Heaters Now.* Home Mechanix 87(760):67, November 1991.

*Solar Water Heating: A Viable Technology Alternative.* M. Sheffer. Energy User News 19(9):44, September 1994.

*Solar Assisted In-Floor Heating Systems.* Bill Brooks. Builder Review Magazine, Louisville, KY. February 1990.

*Hydronic Radiant Floor Heating.* John Siegenthaler. Fine Homebuilding Magazine, Newtown, CT. November 1996.

*Solar Pool Heaters: The Simplest Active Solar Energy.* Ken Sheinkopf. Solar Today, (22-25), November/December 1997.

*Household Energy Consumption and Expenditures 1993.* U.S. Dept. of Energy, Energy Information Administration Publication, DOE/EOA-0321(93), Washington, DC. 1995.

## **Student Activities**

### **Books**

*Schools Going Solar.* Bob Gibson, Jenna Mayotte, Jacquie Cochran and Seth Kalish. Utility Photovoltaic Group, Washington, DC. 1998.

*Schools Going Solar: Volume 2.* Bob Gibson, Seth Kalish, Jacquie Bokow and Susan Tyler Hitchcock. Utility Photovoltaic Group, Washington, DC. 1999

*Energy, Technology, and Society - The Energy Education Teaching Package For Grades 9-12.* National Energy Foundation. Salt Lake City, UT. 1990.

*Energy Education Resources (K-12)*. National Energy Information Center, Energy Information Administration, U.S. Department of Energy, Washington, DC. 2000. DOE/EIA-0546(2000).

*Science Projects in Renewable Energy and Energy Efficiency*. National Renewable Energy Laboratory, Golden, CO. 1991.

### **Solar Center Factsheet**

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### **Articles**

*Now You're Cooking – With the Sun*. Florida Middle School Energy Education Project. Florida Solar Energy Center, Cocoa, FL. 1989.

*Solar Energy Science Projects*. National Renewable Energy Laboratory, U.S. Department of Energy, Golden, CO. 1995.

### **Websites**

*Schools Going Solar*, a world wide web site located at:  
<http://www.schoolsgoingsolar.org>.

*Watts on Schools*, a world wide web site located at:  
<http://www.wattsonschoools.com>.

## **Wind Energy**

### **Books**

*Introduction to Small Wind Systems: Basic Operating Principles*. Thomas Newell et al. American Wind Energy Association, Washington, DC, 1993.

*Economics of Small Wind Turbines*. American Wind Energy Society, Washington, DC. 1993.

*Wind Power for Home and Business: Renewable Energy for the 1990s and Beyond*. Paul Gipe. Chelsea Green Publishing Company, White River Junction, VT. 1993.

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## Take advantage of the state tax credit for renewable energy!

North Carolina offers a personal tax credit of 35 percent of the construction, equipment and/or installation costs for renewable energy systems. The maximum credit per year and per system is \$10,500 for residential photovoltaic, micro-hydro, biomass, biogas and wind systems; \$3,500 for residential passive and active space heating; and \$1,400 for solar water heating systems.

For commercial and industrial installations of solar equipment for production of heat or electricity, the corporate tax credit per year and per system is 35 percent, with a maximum credit of \$250,000 for all solar, wind, hydro and biomass applications. For solar systems, additional tax incentives also are available from the federal government (10 percent tax credit and 5-year accelerated depreciation). For wind and biomass, there is also a kWh production tax credit. There is also a corporate tax credit for North Carolina of 25 percent for the costs of constructing a photovoltaic manufacturing plant, with no maximum credit, which can be carried over to the next year for up to five years.

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