

APPENDIX B – RENEWABLE ENERGY FOR GREAT NEIGHBORHOODS

Wisconsin Focus on Energy is a resource to find out about how you may incorporate renewable energy into your home or business. The following information comes from their website and can be found at www.focusenergy.com.

Considering Renewable Energy for Your Home or Business

Many people are interested in using renewable energy to meet their home or business energy needs, but sometimes the process is not clear and people don't know where to turn for help. Use the steps below as a guide, to help you discover whether renewable energy can work for you.

1. Learn all about it.

It is important to be an educated consumer. Find out as much information as you need to feel comfortable with your energy decision. To learn more about renewable energy events and trainings in your area visit the Focus on Energy Web site at www.focusonenergy.com or call the Focus on Energy information center at 800.762.7077. For hands-on learning, workshops offered by the Midwest Renewable Energy Association (MREA) are held around the state. These workshops cover everything from tips on living with renewable energy to detailed technical information. You can find the MREA course catalog at www.the-mrea.org or by calling 715.592.6595 for a catalog.

2. Get a site assessment.

The best way to find out whether you have a good location for renewable energy is to have a site assessment. A site assessment will bring an expert to your site to evaluate and provide a basic analysis of your energy needs, evaluate renewable energy resource availability at your location, provide energy efficient suggestions and make recommendations on specific renewable energy systems that are right for you. A site assessment also provides information on the best place to locate a system and offers a general cost estimate – all summarized in a report. A site assessment is helpful for any type of renewable energy installation but a necessity when looking to install a wind system. Contact Focus on Energy to arrange for a site assessment.

3. Call an installer; get estimates.

Finding a reputable installer can be as easy as visiting the Wisconsin Renewable Energy Yellow Pages online at the Focus on Energy Web site. The Yellow Pages allow you to find a contractor near you and select lists of full-service installers who provide a whole package of design, equipment, installation and maintenance services for solar and wind energy systems. A good contractor will also help you through steps 4 through 6 in the process. It is best to get more than one installation estimate. An estimate should include the cost of hardware, shipping, installation and connecting to the utility grid, travel and sales tax. Remember, the lowest price is not always the best price. If available, have bids for photovoltaic systems specify the system capacity in AC (alternating current) watts. This will allow you to compare the cost per watt of each estimate and the estimated amount of energy the system will actually produce on an annual basis, measured in kilowatt-hours. If considering a solar water heater, compare the cost for the expected amount of hot water produced per year. Many people may think about installing their own system. Unless you have applicable experience in all aspects of renewable energy system installations, hire a professional.

4. Check zoning, utility requirements, insurance and other legalities.

Your renewable energy system installation will need to comply with the zoning and building codes of the county, city, village or town where the installation will be located. Permits may not be needed until you are ready to do the work. Many installers may even get the permits for you. If you choose to connect your renewable energy system to the utility grid, contact your electric utility for an interconnection application at the early stages of the project. (See Madison Gas and Electric's resources for Customer-Owned Parallel Generation Systems on opposite page.) Wisconsin utilities are required to connect a renewable energy, electric-generating installation to its utility system. Except for rural electric cooperatives, Wisconsin utilities are also required to buy your excess electricity for the same price that you pay the utility for electricity, if your system is less than 20 kilowatts. It is also important to contact your insurance agent to be certain the proposed renewable energy system is covered by your homeowners liability insurance policy. Other legalities might include contacting your homeowners association or checking neighborhood covenants. A covenant that does not allow solar or wind renewable energy systems is against the law in Wisconsin, but there may be additional specifications for your area. State law prohibits restrictions on platted land that unduly restricts the construction and operation of solar and wind energy systems. The Focus on Energy program can assist you in overcoming many issues that could arise.

5. Secure financing.

There are several places to turn for funding your renewable energy system. Many people do not realize that financing for a renewable energy home project might come from a home equity loan. A capital improvement loan may apply for commercial projects. Another option for your business is to lease a solar hot water system. In this case, the solar hot water contractor would install and maintain the system at their expense, while your lease provides the solar heated water. You can contact Focus on Energy to see whether your project qualifies for a Cash-Back Reward, implementation grant, or low-interest rate loan to help offset project costs. Be sure to apply for any Focus on Energy incentives before purchasing equipment or signing a contract with an installer. Wisconsin allows a property tax exemption for renewable energy equipment, so your renewable energy system will not affect your property tax bill.

6. Learn how to maintain your system – safely.

Ask your installer to give detailed, written instructions on how to maintain your system properly and safely. Keep an eye on metering systems and utility bills to be sure your system functions effectively and efficiently. You might also ask your installer how you can perform simple troubleshooting or maintenance, such as greasing moving parts on a wind turbine. Be sure to learn basic safety requirements and procedures, like how to shut down the system in emergencies such as a flood or other situations that could damage the system; and how to power up the system after it has been shut down.

7. Enjoy saving money and energy.

Congratulations! After your initial investment, you will start seeing money and energy savings on your utility bill. You also have a source of pride that produces energy without additional fuel costs, noise or air pollution, and you're doing your part to protect Wisconsin's environment.

Connecting to Your Local Electric Grid

Madison Gas and Electric offers special rates for customer-owned electric generation systems. The following section can also be found at www.mge.com/home/rates/cust_gen.htm.

Customer-Owned (Parallel) Generation

Customers can receive credit on their MGE utility bills for the electricity they produce from their own renewable energy system or generator that exceeds the amount of electricity they use from MGE's distribution system.

If you are planning to purchase your own parallel generation system and intend to connect it to MGE's electricity distribution system, please contact:

Jeff Ford
Madison Gas Electric Co.
Post Office Box 1231
Madison, WI 53701-1231
800-245-1125

We'll review your application, inspect your system, test the protection equipment and set up the metering. If you have questions about the application, rates or systems, contact jford@mge.com.

For more information

Wisconsin's Focus on Energy program (www.wifocusonenergy.com) can help with the system design, finding contractors and financing the system. Wisconsin utility customers fund this program through charges on their utility bills.

The U.S. Department of Energy has created consumers' guides on small wind electric systems and solar photovoltaic systems available at:
www.eere.energy.gov/consumerinfo/factsheets.html.

The Database of State Incentives for Renewable Energy is a comprehensive source of information on state, local, utility, and selected federal incentives that promote renewable energy. Visit <http://www.dsireusa.org> and click on Wisconsin on the map.

ENDNOTES

- ¹ *Linking Vision with Capital: Challenges and Opportunities in Financing Smart Growth*, Research Institute for Housing America, Institute Report No. 01-01, by Robert W. Burchell and David Listokin, Center for Urban Policy Research, Edward J. Bloustein School of Planning and Public Policy, Rutgers, The State University of New Jersey. Per dwelling unit savings include \$5,792 in housing costs, \$1,325 in local road costs, \$964 in fiscal impacts, and the remaining savings from cost reductions in non-residential costs, land, state roads, and water and sewer laterals.
- ² Robert Burchell, "Economic and Fiscal Costs and Benefits of Sprawl," *The Urban Lawyer* (1997). Jeffrey Dorfman, et al, "The Economic Costs of Development for Local Government," University of Georgia (2002).
- ³ Dane County Regional Planning Commission, U.S. Census.
- ⁴ *Assessing the impact of urban form measures in nonwork trip mode choice after controlling for demographic and level-of-service effects*, Jayanthi Rajamani, Chandra R. Bhat, Susan Handy, Gerritt Knaap, and Yan Song, TRB 2003: Submitted for Presentation and Publication August 1, 2002.
- ⁵ *Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity*, Reid Weing, Tom Schmid, Richard Killingsworth, Amy Zlot, and Stephen Raudenbush, *American Journal of Health Promotion*, September, 2003.
- ⁶ Dane County Regional Planning Commission and U.S. Census.
- ⁷ Witold Rybczynski. *Looking Around: A Journey Through Architecture*. (Penguin Books, New York: 1992), p. 78.
- ⁸ Zimmerman/Volk Associates (ZVA) analyzed demographic data, in- and out-migration figures for the county, housing turn-over rates (how often people move), and the housing preferences of different types of households. They used this data to determine the full range of household types that will likely be looking for a place to live in an area including the three sites.
- ⁹ Dane County Regional Plan Commission, 2000 Land Use Inventory. Right-of-way includes sidewalks and street terraces.
- ¹⁰ Ray Oldenberg. "Our Vanishing Third Places." *Planning Commissioner Journal*: 25 (Winter, 1997).
- ¹¹ "Back to Basics." *Urban Land* (February 2003).
- ¹² "Main Street Survey Shows Strength in American Communities," 2002 Main Street Trends Survey, National Main Street Center press release, <http://www.mainstreet.org/index.htm>
- ¹³ National Main Street Center. Over the past 22 years, Main Street revitalization efforts have created 227,000 jobs and 56,000 businesses and have saved 89,000 historic buildings all across the country.
- ¹⁴ Warrick and Alexander, "Looking for Hometown America." Quoted from the American LIVES survey, 1995.
- ¹⁵ *Raising the Bar: Town Centers are Outperforming Traditional Suburban Real Estate Products*, Charles Lockwood, *Urban Land*, February 2003.
- ¹⁶ *Commercial Market Study: State Street Corridor, Madison, Wisconsin*, Prepared for JJR, Inc., by Gibbs Planning Group, April 22, 1999.
- ¹⁷ Paris Rutherford. "Reinventing Suburbia." *Urban Land* (July 2002).
- ¹⁸ New Urbanism: Comprehensive Report and Best Practices. Quote from Robert Tiscareno of LMN Architects.
- ¹⁹ Reid Ewing. *Best Development Practices*.
- ²⁰ Peter Swift, Richard A. Hall, and Rick Chellman, "Context Driven Street Design," audio seminar, (March 18, 2003).
- ²¹ AASHTO, "A Policy on Geometric Design of Highways and Streets," (2001).
- ²² UW Extension, "A Model Ordinance for a Traditional Neighborhood Development," (2000).
- ²³ The 2002 Summary of Safe Routes to School Programs in the US, Surface Transportation Policy Project, Washington, D.C.
- ²⁴ www.cdc.gov

GREAT NEIGHBORHOODS GLOSSARY

Aquifer: A geological formation, group of formations, or part of a formation capable of yielding, storing, or transmitting a usable amount of groundwater to wells or springs for human and animal consumption.

“American Dream:” A post World War II, pop culture inspired ideal of American life that features a nuclear family in a single-family house set on a large lawn in a development pattern that necessitates auto-dependent lifestyles.

Apartment Buildings: (also referred to as multi-family units) Buildings that come in a range of sizes and shapes but typically have one common entrance for the residence of multiple families.

Auto-Dependent: Development that is separated from other developed areas, by distance or barriers such as streets unfriendly to walking or bicycling, such that it precludes travel by modes other than motor vehicles.

Blocks: The aggregate of lots and tracts, circumscribed by streets; A critical element in neighborhood development relating to walkability.

Building Code: The State of Wisconsin has a uniform dwelling code that must be followed for the construction and inspection of all one- and two-family dwellings in the state. Local communities in the state have enforcement responsibilities related to the code, which can be found in the Administrative Rules for the Department of Commerce.

Civic Buildings: Any building held, used, or controlled exclusively for public purposes by any department or branch of government, state, county, or municipal entity.

Civic Center: An area developed, or to be developed, with any of the following public buildings or uses: offices, libraries, playgrounds, parks, assembly halls, police stations, fire stations.

Civic Plaza: a public space at the intersection of important streets set aside for civic purposes and commercial activities; A plaza is circumscribed by frontages, its landscape consists of durable pavement for parking and trees requiring little maintenance.

Civic Squares: a public space, seldom larger than a block, at the intersection of important streets; A square is circumscribed by frontages, its streetscape consists of paved walks, lawns, trees, and civic buildings all formally disposed and requiring substantial maintenance.

Cluster Development: A development design technique that concentrates buildings in specific areas on a site to allow remaining land to be used for recreation, common open space, or the preservation of historically or environmentally sensitive features.

Compact Development: The development of buildings, parking areas, streets, driveways, and public spaces in a way that maximizes proximity and connectivity, which facilitates alternative transportation choices.

Commercial Use: A business use or activity at a scale greater than a home industry involving marketing of goods and services.

Condominium: A form of property ownership in which each owner holds title to his/her individual unit, plus a fractional interest in the common areas of the multi-unit project. Each owner pays taxes on his/her property and is free to sell or lease the unit.

Corridor: A broad geographical band with a directional flow of traffic and/or activities that may involve a number of streets, highways, and transit route alignments. (There are also environmental, historic, mixed-use, pedestrian, scenic, transportation, and wildlife corridors.)

Demographic: A statistic characterizing human populations (or segments of human populations broken down by age or sex or income, etc.).

Density: The number of dwelling units permitted per net acre of land designated for residential or mixed-use, exclusive of public right-of-ways.

Design Guidelines: Standards of appropriate construction activity that will preserve the character (e.g. historic and architectural) of a structure or area.

Districts: A section or sections of a municipality within which certain regulations and requirements of various combinations apply.

Duplexes: A house divided into two living units or residences, usually having separate entrances.

Edges: A dividing line; a border that can be created through a variety of design elements in the built environment.

Fannie Mae: (refers to the Federal National Mortgage Association) Created to establish a secondary market for home mortgages to extend ownership opportunities.

Federal Housing Administration: (FHA) A government agency whose primary purpose is to insure residential mortgage loans.

First Places: Private spaces (e.g. homes).

Granny Flats (Accessory Apartments): A separate and complete dwelling unit that is contained on the same lot as the structure of a single-family dwelling or business.

Great Neighborhoods: Refers to traditional neighborhood developments (TND), new-traditional development, New Urbanism, transit oriented development (TOD), close-knit communities (CKC), and other development patterns that promote walkable, diverse, safe and attractive mixed-use neighborhoods.

Household: All persons living in a housing unit regardless of whether they are related to the householder.

Housing Demand: A function of the price of services (rent/ownership), household income, the cost of other goods and services, household preference/lifestyle stages, consumer expectations, and the number of households in the market (also affected by the rate of household formation and the net migration of households).

Housing Preference: Refers to what housing consumers desire in terms of housing type, location, amenities, costs, etc.

Housing Trends: Change over time in housing preferences, and housing supply and demand in particular markets.

Housing Types: Refers to the variety of housing unit styles, such as single-family detached homes, duplexes, townhouses, multi-family structures, mobile homes, manufactured housing, etc.

Housing Unit: A house, apartment, mobile home/manufactured housing, single room or group of rooms occupied (or intended for occupancy) as separate living quarters. Occupants may be one person, one or more families, or a group of unrelated persons who share living arrangements.

Infrastructure: Facilities and services needed to sustain industry, residential, commercial, and all other land use activities, including water, sewer lines, and other utilities, streets and roads, communications, and public facilities such as fire stations, parks, schools, etc.

Impact Fee: A payment of money imposed on development activity as a condition of granting development approval in order to finance the facilities needed to service the new growth and development activity.

Live/Work Units: A rear yard, fully mixed-use building type with one dwelling above or behind a commercial space.

Main Streets: Districts that accommodate a variety of commercial activities in conjunction with civic open spaces and buildings in a denser, fully mixed-use part of a community; Within this district, the predominant land and building use is commercial, but may include residential and workplace uses; Its location is along an important street and draws customers primarily from surrounding neighborhoods.

Mixed Use Development: A single building containing more than one type of land use or a single development of more than one building and use, where the different types of uses are in close proximity, planned as a unified complimentary whole, and functionally integrated (also may share vehicular and pedestrian access and parking areas).

Multi-Family Housing: A detached building designed and used exclusively as a dwelling by three or more families occupying separate suites.

Natural/Scenic Features: Environmental or aesthetic characteristics, typically considered amenities. For instance, natural features might include soil types, geology, slopes, vegetation, drainage patterns, aquifers, recharge areas, climate, floodplains, aquatic life and wildlife.

Neighborhood: urbanized sectors that are compact, diverse and walkable; Neighborhoods provide for a balanced set of activities: shopping, work, schooling, recreation and dwelling; It also provides housing for people with a range of incomes.

Neighborhood Revitalization: Refers to activities with outcomes, often including redevelopment efforts, which impart new life or activity, and increased economic value and exchange, into a neighborhood.

New Town Development: A community projected on a greenfield site with buildings for dwelling, shopping, working, and schooling assembled on a neighborhood structure. Similar buildings, when assembled into single-use districts, create Edge Cities.

New Urbanism: A development pattern that reintegrates the components of modern life – housing, workplace, shopping and recreation – into compact, pedestrian-friendly, mixed-use neighborhoods linked by transit and set in a larger regional open space framework.

NIMBYism: “Not in my backyard.” An attitude referring to resistance people have to siting locally unwanted land uses near their residence, including prisons, hazardous waste facilities, landfills, power plants, etc.

Nodes: Points that are activity centers in the urban landscape created through transportation intersections and/or design elements in the built environment.

Open Space: Any land or area, the preservation of which in its present use would: (1) conserve and enhance natural or scenic resources; or (2) protect streams of water supply; or (3) promote conservation of soils, wetlands, beaches, or tidal marshes; or (4) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, natural reservations, or sanctuaries; or (5) enhance opportunities for passive enjoyment of public spaces.

Parks: Larger open areas, usually with lawns, trees, and user amenities; A noncommercial, public or not-for-profit facility designed to serve the recreation needs of the residents of a community. (Such facilities include neighborhood parks, community parks, regional parks and special use facilities among others.)

Pedestrian Shed: A theoretical area, typically surrounding a neighborhood activity center, representing the distance most people are willing to walk to get to the center; A quarter-mile is used as a rule-of-thumb measure for walkable distances. A generalized pedestrian shed would thus be a circle with a quarter mile radius, or approximately 160 acres. In reality, the shape and size of pedestrian sheds is determined by the ease of walking (barriers, street patterns, topography, activities) and the appeal of the destination (shorter to a neighborhood park, longer to shopping or a transit stop).

Pedestrian-oriented Development: Development designed with an emphasis on the street sidewalk, walkability and pedestrian access.

Public Transit: A system of regularly scheduled buses and/or trains available to the public on a fee-per-ride basis. (Also called mass transit)

Residential: Premises available for long-term human habitation by means of ownership and rental, but excluding short-term letting of less than a month’s duration.

Runoff: The rainfall, snowmelt, or irrigation water flowing that has not evaporated or infiltrated into the soil, but flows over the ground surface; types include surface runoff, groundwater runoff, or seepage.

Second Places: Public spaces (e.g. parks).

Secondary Market: Mortgage lending markets into which originating lenders sell their loans to investors who are seeking longer-term investments (such as “Fannie Mae”).

Single Family Houses: Housing types consisting of single dwelling units on their own lots with separate entrances; Most single-family housing consists of stand-alone buildings (detached), some are attached such as townhouses.

Squares: Open spaces that are typically a block in size, surrounded by streets and faced by building frontages such that they are designed to function as ‘outdoor rooms’ (providing places to eat lunch, take a walk, or read a book).

Stormwater Management: Any stormwater management technique, apparatus or facility that controls or manages the path, storage or rate of release of stormwater runoff. Such facilities may include storm sewers, retention or detention basins, drainage channels, drainage swales, inlet or outlet structures, or other similar facilities.

Street (Grid System): A street system based on a standard grid pattern (e.g. checkerboard blocks); however, offset intersections, loop roads, and cul-de-sacs as well as angled or curved road segments may also be used on a limited basis.

Street Hierarchy: A street layout that separates traffic routes passing through an area from streets that provide access to people living within the area. The hierarchy forms the basis for a classification system and design standards (e.g. residential access streets connect to residential collector streets, which connect to arterial streets that connect to limited access highways or expressways.)

Subdivision Regulation: The control of the division of a tract of land by requiring development to meet the design standards and procedures adopted by ordinance.

Suburban: Urban growth at the edge of, and dependent upon a city.

Third Places: A location that fulfills a necessary social role in between the private and public realms; a space that balances the familiar with the anonymous (such as a café, pub, exercise club, etc.).

Traditional Neighborhood Development: A neighborhood that exhibits several of the following characteristics: alleys, grid system streets, street oriented buildings, pedestrian-oriented, compatible, mixed land uses, village squares and greens.

Transportation Choices: Refers to a range of alternatives aside from individual automobile use such as rail transit, buses, trolleys, car pools, van pools, bicycling, and walking.

Townhouse (also referred to as “town homes” or “row houses”): A two-to-three-story single-family dwelling unit, with a private entrance, that is attached to a row of similar single-family units in a linear arrangement facing the street.

Town Center: It is a mixed-use area, of greater development intensity than the Main Street District; Its location is along one or more principal arteries of the region and it encompasses more than one intersection and street; It draws customers and employees regionally; and It includes living and public gathering space.

Two- and Three-Flats: Stand alone structures, often designed to resemble single-family housing, in which separate living units are ‘stacked one on top of another.’

Urban: Urban areas are generally characterized by moderate and higher density residential development, commercial development, and industrial development as well as public services including sewer and water.

Urban Context: Refers to the location, mass, and design of various urban components from buildings to landscaping and street widths, etc.

Vest Pocket Park: A small open space in a Great Neighborhood with ‘softer features’ than a plaza, but similar functions.

Zoning District: Any section or sections of a jurisdiction for which regulations govern land use, density, bulk, height, and coverage of buildings.