TAKING THE RED TAPE OUT OF GREEN POWER

How to Overcome Permitting Obstacles to Small-Scale Distributed Renewable Energy

SUMMARY SEPTEMBER 2008

NNEC

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The mission of the Network for New Energy Choices (NNEC) is to promote policies that ensure safe, clean, and environmentally responsible energy options. NNEC collaborates with all levels of government, planning agencies, public interest organizations, government and industry associations, professional societies, labor groups, businesses, and the public. NNEC, formed in 2006, is a program of GRACE.

For more information about the Network for New Energy Choices, or for additional copies of this report summary and the full report, please visit: www.NewEnergyChoices.org.

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ENDORSING ORGANIZATIONS

"Taking the Red Tape Out of Green Power" has been endorsed by the following organizations and associations:

- The American Institute of Architects
- American Wind Energy Association
- Apollo Alliance
- Environment, Natural Resources and Energy Division of the American Planning Association
- Florida Solar Energy Center
- ICLEI-Local Governments for Sustainability USA
- Institute for Local Self-Reliance
- Interstate Renewable Energy Council
- Natural Resources Defense Council
- Northwest Sustainable Energy for Economic Development
- Pace Energy and Climate Center
- Sierra Club
- Solar Energy Industries Association
- Southern Alliance for Clean Energy
- The Vote Solar Initiative

Endorsing organizations recognize the report's value as an important resource to local municipalities and states, particularly in facilitating permitting of residential photovoltaic and wind energy systems.

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SUMMARY

Over the last several years Americans have become increasingly aware of the importance of renewable resources in reducing our nation's dependence on foreign sources of energy and decreasing the emission of climate-changing greenhouse gases and other pollutants. As a result, renewable energy technologies, particularly solar and wind power, are the most rapidly growing sources of electricity in the U.S. Furthermore, environmental and security concerns have sparked increasing interest in small-scale, "distributed" sources of electricity generation to reduce our reliance on large-scale, centralized power plants; however, individual homeowners and small business owners looking to invest in these new sources of energy face multiple bureaucratic barriers to installing their own small-scale, distributed renewable energy systems.

The greatest barriers to the expanded use of distributed renewable energy systems in the United States stem not from technical obstacles, but from financial, political, and social hurdles. System installers often face planners and building inspectors with little experience permitting renewable energy systems and with no formal education for certifying system safety and reliability. Complex permitting requirements and lengthy review processes delay installations and add significant costs to distributed renewable energy systems. Multiple permitting standards across jurisdictions create additional complications and inefficiencies for system installers. In many cases, these remaining bureaucratic hurdles stymie efforts by homeowners and business owners to install systems and hinder the development of a national market for distributed renewable energy systems.

The term "distributed renewable energy systems" is used to describe the distributed applications of clean renewable electricity that are the subject of this report. Distributed renewable energy systems can take many forms, including geothermal systems, micro-hydroelectric systems, and various solar and wind energy applications. While solar thermal systems, which use the sun for space or water heating, are an important form of clean renewable energy, the focus of this report is the unique set of issues facing electricity-generating systems, particularly those that are interconnected to the local electricity distribution grid. The term distributed generation distinguishes these systems from the large, centralized generation facilities that provide the vast majority of the nation's power.

This report focuses specifically on solar photovoltaics (PV) and small wind turbines, as these are the most common distributed renewable energy technologies and the ones with the greatest potential for expansion. The most significant municipal-level planning and permitting obstacles to these distributed renewable energy systems are identified, and include:

- Complex and/or unclear local permitting requirements;
- Inspectors and permitting authorities that are inexperienced with renewable electricity systems;
- Permitting requirements that vary significantly across jurisdictions;
- Permit fees that vary across jurisdictions and are sometimes not consistent with municipal resources expended; and
- Unfair and often illegal enforcement of restrictive housing covenants.

"Taking the Red Tape Out of Green Power" also discusses ways to overcome these hurdles and identifies policies from states and municipalities that have successfully streamlined certification and permitting guidelines. From this analysis seven sets of recommendations were developed for overcoming the remaining hurdles to widespread deployment of distributed renewable energy systems. These recommendations cover local government policies for distributed PV, local government policies for small wind turbines and state policies for distributed renewable energy systems (see Final Recommendations on Page 5).

LOCAL GOVERNMENT POLICIES FOR DISTRIBUTED PV

This report's recommendations reflect actions that can be taken by municipalities (e.g., cities, towns, or counties) to ease permitting processes and remove barriers for distributed PV systems.

Perhaps the most obvious step that local governments can take in support of PV is to remove barriers that are inherent in their building or zoning codes, such as by exempting PV systems from building height limitations or building permit and design review requirements.

Many of these recommendations are intended to reduce the time, paperwork and unnecessary inconvenience associated with building and electrical permit applications for PV installations. This includes creating simplified permit application processes and working with surrounding jurisdictions to develop standardized application procedures that support the increased use of PV systems across entire regions.

It is recommended that electrical permitting requirements be based on a common set of standards – Underwriters Laboratory (UL) 1741 and IEEE (formerly the

Institute of Electrical and Electronics Engineers) 1547 – which ensure the safety and reliability of PV systems if they are installed according to the National Electric Code (NEC). This would streamline the electrical permitting process for grid-tied PV systems by allowing it to focus only on ensuring that the system has been installed properly and is ready for grid interconnection. Local governments could further reduce permitting delays by providing their building and electrical inspectors with the necessary training to understand and properly evaluate PV systems.

While this report focuses specifically on permitting issues for distributed renewable energy systems, the high cost of these technologies continues to be a major obstacle to their widespread use. The cost and permitting obstacles converge with the issue of permit fees. Flat permit fees are encouraged, as opposed to "valuation-based" fees that are based on project value and thus discourage investment in larger systems. Also, the approach taken by some municipalities to encourage PV and other distributed renewable energy systems by exempting them from permit fees and/or providing rebates or other types of financial incentives is recommended.

LOCAL GOVERNMENT POLICIES FOR SMALL WIND TURBINES

The greatest permitting obstacle to small wind turbines often is not the presence of overly burdensome permitting requirements for this technology, but rather a lack of applicable guidelines, which often leads to evaluation of small turbines using the same detailed permitting processes that are required for large wind turbines or other types of major energy infrastructure.

Local governments should identify areas in their jurisdictions where wind energy development may conflict with surrounding land uses. A number of factors should be considered when identifying these areas, including locations of endangered bird and bat habitat, density of existing or planned development and the location of sensitive land uses. Small wind turbines should then be designated as conditional uses in the areas of potential conflict and as permitted uses in all other areas of the jurisdiction. Designating small wind turbines as permitted uses does not mean that their potential impacts must be ignored. Appropriate design guidelines and performance standards can be established to mitigate the potential impacts for most proposed small wind turbines, allowing the more rigorous conditional use permit application and review process to be used only in areas where the potential impacts are greatest.

Local governments can further expedite the permitting process by adopting a list of pre-approved small wind turbine models and by providing local inspectors with the necessary training to properly evaluate proposed small wind installations.

STATE POLICIES FOR DISTRIBUTED RENEWABLE ENERGY

While this report focuses primarily on local government policies to remove planning and permitting barriers to distributed renewable energy systems, three ways in which state governments can help to overcome those barriers are identified.

First, states can ease distributed renewable energy permitting processes for their localities by establishing statewide standards for renewable energy equipment and providing statewide training and education to familiarize local building and electrical inspectors with distributed generation technologies. Such statewide programs would also help to mitigate the problem of inconsistent permitting requirements across jurisdictions.

Second, states can pass legislation to preempt home rule and require local governments to develop efficient permitting processes and reasonable review criteria for distributed renewable energy systems. This approach has been used with some success in both California and Wisconsin among other states.

Third, states can pass laws banning private covenant restrictions that prohibit or restrict PV and other distributed renewable energy systems on aesthetic grounds. Several states have passed such laws already, but their effectiveness has been limited. Therefore, it is recommended that in addition to passing laws banning private covenant restrictions, states actively work to educate community associations about their obligations under the law and inform homeowners about their right to install distributed renewable systems with the proper government permits.

Most of the suggestions in this report require only minor policy changes that could be implemented expeditiously by state and/or local officials. These minor changes could have a profound impact on the ability to safely and rapidly expand the use of on-site, renewable energy systems and may even help jump-start a robust domestic renewable energy market that benefits all Americans.

RECOMMENDATION 1: REMOVE BARRIERS TO PV SYSTEMS FROM BUILDING AND ZONING CODES.

RECOMMENDATION 1-A: Exempt roof-top PV systems from building height limitations.

RECOMMENDATION 1-B: Allow "over-the-counter" building permits for standard roof-mounted PV systems that do not exceed the roof support capabilities of a structure meeting minimum building code requirements.

RECOMMENDATION 1-C: Do not restrict PV systems on aesthetic grounds.

RECOMMENDATION 2: SIMPLIFY PV PERMIT APPLICATION FORMS AND REVIEW PROCESSES.

RECOMMENDATION 2-A: Coordinate PV permitting procedures with nearby jurisdictions.

RECOMMENDATION 2-B: Base PV electrical permitting requirements on IEEE 1547 and UL 1741.

RECOMMENDATION 2-C: Provide training to educate building and electrical inspectors about PV technology and installations.

RECOMMENDATION 3: ADOPT FLAT PERMIT FEES OR FEE WAIVERS FOR PV AND SMALL WIND SYSTEMS.

RECOMMENDATION 4: INCORPORATE INFORMATION ABOUT WIND ENERGY OPPORTUNITIES INTO MUNICIPAL COMPREHENSIVE PLANNING.

RECOMMENDATION 5: ESTABLISH SMALL WIND TURBINES AS PERMITTED USES, WITH APPROPRIATE DESIGN GUIDELINES, PERFORMANCE STANDARDS, AND REVIEW PROCESSES.

RECOMMENDATION 5-A: Identify areas within jurisdictions where small wind turbines may conflict with surrounding land uses.

RECOMMENDATION 5-B: Identify small wind turbines as conditional or special uses in areas of potential conflict and as permitted uses in all other areas of the jurisdiction.

RECOMMENDATION 5-C: Establish limitations on maximum rated capacity and turbine height that are unambiguous and are sufficient to allow modern residential-scale small wind turbines.

RECOMMENDATION 5-D: Establish appropriate setbacks, measured in terms of the turbine height and distance from the nearest property line.

RECOMMENDATION 5-E: Establish performance-based sound standards based on a maximum decibel reading of 55-60 dBA measured at the nearest property line.

RECOMMENDATION 5-F: Streamline permitting requirements for small wind turbine equipment meeting Small Wind Certification Council requirements.

RECOMMENDATION 5-G: Provide training to educate building and electrical inspectors about small wind technology and installations.

RECOMMENDATION 5-H: As an alternative to recommendations 5-A and 5-B, consider adopting a wind energy overlay zone that identifies appropriate areas for wind energy use, designates small wind turbines as permitted uses and establishes appropriate design guidelines and performance standards.

RECOMMENDATION 6: EASE PERMITTING PROCESSES BY ESTABLISHING STATEWIDE INTERCONNECTION STANDARDS AND EDUCATING BUILDING AND ELECTRICAL INSPECTORS ABOUT PROPER INSTALLATION PROCEDURES FOR DISTRIBUTED RENEWABLE ENERGY SYSTEMS.

RECOMMENDATION 6-A: Establish statewide PV interconnection standards that use IEEE 1547, UL 1741, and the NEC.

RECOMMENDATION 6-B: Establish statewide training and education programs for building and electrical inspectors about distributed renewable energy systems.

RECOMMENDATION 7: ADOPT LEGISLATION AT THE STATE LEVEL MANDATING CONSISTENT AND APPROPRIATE PERMITTING REQUIREMENTS FOR DISTRIBUTED RENEWABLE ENERGY SYSTEMS.

RECOMMENDATION 7-A: Adopt legislation requiring local governments to establish time-efficient permitting processes and reasonable review criteria for distributed renewable energy.

RECOMMENDATION 7-B: Adopt "solar rights" legislation banning private covenant restrictions on distributed renewable energy systems.

RECOMMENDATION 7-C: Create enforcement procedures and penalties for non-compliance with solar rights laws and develop an education program to inform homeowners of their rights and community associations of their obligations under the law.

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