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NEWS FROM THE STATES

(1) ARIZONA - ACC to Convert Proposed Interconnection Standard into Rules

The Arizona Corporation Commission (ACC) has directed its staff to begin a rulemaking process to adopt interconnection standards for distributed generation (DG), having determined that such an action is in the public interest. This process will involve converting into rules the proposed standard developed by ACC staff, with input and assistance from dozens of stakeholders, over the past two years. The proposed interconnection standard is based on the IEEE 1547 technical standard, and includes three levels of interconnection review for DG systems up to 10 megawatts (MW) in capacity. The rules will apply to all electric distribution companies in Arizona that are regulated by the commission.

In moving forward with the development of interconnection rules, the ACC noted that it is adopting a modified version of the interconnection standard contained in Section 1254 of the federal Energy Policy Act of 2005 (EPAct 2005). EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make

a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(2) ARIZONA - ACC Staff Recommends Initiating Net-Metering Rulemaking

The Arizona Corporation Commission (ACC) Staff has recommended to the commission a proposed order that would adopt the federal standard for net metering contained in Section 1251 of the federal Energy Policy Act of 2005 (EPAct 2005), and initiate a rulemaking process to draft rules on net metering. The draft rules would address, at a minimum, customer sector participation, eligible generation resources, eligible project size, total participation, metering, treatment of net excess generation (NEG) and responsibility for costs. The standard would apply to all electric utilities regulated by the ACC.

Stakeholders have been invited to file comments on the proposed order on or before August 17, 2007. The ACC may accept, amend or reject the staff's proposed order.

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(3) CALIFORNIA - CEC Asks CPUC to Take Reins of Interconnection Working Group

The California Energy Commission's (CEC), which has supported the efforts of the state's Rule 21 Working Group for the past seven years, has concluded that "the key research issues pertaining to Rule 21 have been addressed." Accordingly, the CEC has asked the California Public Utilities Commission (CPUC) to assume leadership of the working group, and has recommended that the PUC open a rulemaking to address the actions necessary to establish firm goals for the increased application of efficient in-state distributed generation (DG) that reduces greenhouse-gas emissions. "Rule 21" refers to the section of each California investor-owned utility's tariff that addresses the interconnection of DG.

Currently, the Rule 21 Working Group consists of 130 members, including representatives of utilities, municipalities, manufacturers, developers, state representatives and regulators. According to the CEC, Rule 21 has decreased the average time to interconnect from over a year to less than three months, and average cost savings per interconnection are $6,400. When all savings are considered, the overall benefit to developers is estimated to be over $30 million thus far. Furthermore, the CEC noted that Rule 21 has been adopted by several major municipal utilities in California, has become a model for utilities in other states and countries, and has become more compatible with the IEEE 1547 standard, the CEC noted.

The CEC stated that the remaining interconnection issues in California are "regulatory in nature," and that "additional research will not provide closure of these issues." In a letter sent to the CPUC, the CEC included a list of the Rule 21 Working Group's system-process accomplishments, certification accomplishments, technical accomplishments, and approximately 15 unresolved policy and technical issues.

The CEC emphasized that it is "committed to the smooth and orderly transition of the control and management of this working group to the CPUC." The working group's next meeting, scheduled for August 22, 2007, will be delayed until the CPUC has determined how the group will be managed in the future. The CEC noted that it could support the working group during this transition by processing

applications for equipment certification, hosting and maintaining the Rule 21 web site, and following up on IEEE issues that affect interconnection.

(4) CALIFORNIA - CEC Issues Final Report for Intermittency Analysis Project

The California Energy Commission (CEC) has issued the final report for its Intermittency Analysis Project, which was established to: (1) analyze the statewide system impacts of higher levels of intermittent renewables on the state's electricity and transmission infrastructure, (2) trace the historical evolution of wind-energy technologies in California and their changing impact on the grid, and (3) determine how other international regions have integrated intermittent renewables generation. The Intermittency Analysis Project team produced a total of five major reports, which included recommendations for California to integrate higher levels of variable renewables per state energy policy targets. California has a renewable portfolio standard (RPS) of 20% by 2010 and an accelerated target of 33% renewables by 2020.

The final project report, weighing in at 71 pages, summarizes the results and recommendations of a series of reports and presentations produced by the project team. It includes two appendices that address the intermittency impacts of wind and solar resources on transmission reliability, and the impact of intermittent generation on the operation of the state's power grid. The project concluded that California can incorporate the amount of renewables based on the Intermittency Analysis Project scenarios, provided appropriate infrastructure, technology and policies are in place. Specifically, this successful integration will require:

- Investment in transmission, generation, and operations infrastructure to support the additional renewables;
- Appropriate changes in operations practice, policy and market structure; and
- Cooperation among all participants, including, the California Independent System Operator (ISO), investor-owned utilities, renewable generation developers and owners, non-Federal Energy Regulatory Commission (FERC) jurisdictional power suppliers, and regulatory entities.

(5) CALIFORNIA - CPUC Adopts Tariffs, Standard Contracts for Small Renewables

The California Public Utilities Commission (CPUC) has adopted tariffs and standard contracts for the purchase of electricity generated from small renewable-energy resources at customer-sited facilities. The PUC's decision, adopted July 26, 2007, implements Public Utilities Code §399.20 (AB 1969), which allows public water and wastewater agencies to generate renewable electricity onsite and sell excess generation at a fixed price to the electric utility in its service territory. The CPUC will set the price paid under the tariffs annually, as an extension of its implementation of Public Utilities Code §399.15.

Individual participating facilities are limited to 1.5 megawatts (MW) in capacity, and the statewide aggregate capacity limit on program participation is 250 MW. The CPUC's decision also expands the program beyond public water and wastewater agencies, allowing an additional 230 MW of customer-sited generation to participate in similar tariffs. For more information about this decision, contact the CPUC.

(6) CONNECTICUT - DPUC to Review Proposed Revised Interconnection Guidelines

Pursuant to state legislation enacted in June 2007, the Connecticut Department of Public Utility Control (DPUC) has reopened its investigation into the need for interconnection standards for distributed generation (Docket No. 03-01-15). H.B. 7432, which also raised the state's net-metering limit to two megawatts (MW), requires the DPUC "to issue a final decision approving interconnection standards that meet or exceed national standards of interconnectivity." The new law provides that if the DPUC does not issue a final decision regarding interconnection standards by October 1, 2008, each electric distribution company, municipal electric energy cooperative and municipal electric utility must comply with the

interconnection standards adopted by the New Jersey Board of Public Utilities. New Jersey's interconnection standards are widely considered to be among the best in the United States.

The DPUC approved interconnection guidelines jointly filed by the state's two investor-owned utilities -- Connecticut Light and Power, and the United Illuminating Company -- in April 2004. In July 2007, the two utilities submitted revised guidelines to the DPUC. The revisions consist of a complete overhaul of the guidelines to align them with the Federal Energy Regulatory Commission's (FERC) interconnection standards for systems up to 20 MW in capacity. In their July 2007 filing, the utilities stated that, unless they "hear otherwise" from the DPUC, they will implement the revised guidelines. The DPUC intends to review the utilities' filing, and will allow public comment and the vetting of all substantive issues before issuing a final decision "substantially earlier" than January 1, 2008.

(7) DELAWARE - Net Metering Raised to 2 MW; IREC Model Interconnection Rules to Be Used

Delaware has enacted legislation (S.B. 8) that will improve net-metering opportunities significantly, and that requires the Delaware Public Service Commission (PSC) and certain utilities to develop interconnection rules based on the Interstate Renewable Energy Council's (IREC) model interconnection rules. First, net-metering eligibility has been extended from residential customers and small commercial customers to all customers classes. Second, the new law specifies that the Delaware Public Service Commission (PSC) and municipal utilities must adopt rules and regulations for net metering. Third, the maximum capacity of a net-metered energy system was set at 25 kilowatts (kW) for residential customers of DP&L, DEC and municipal electric companies; raised to two megawatts (MW) per meter for nonresidential customers of DP&L; and raised to 500 kW per meter for DEC and municipal utilities. (The new law "encourages" DEC and municipal utilities to offer net metering for nonresidential customers with eligible systems up to 2 MW in capacity.) Systems must be intended primarily to offset all or part of a customer's electricity requirements.) Fourth, net metering has been extended specifically to anaerobic digesters and to fuel cells powered by renewable fuels.

In addition, the new law states that the rules and regulations developed by the PSC and municipal electric companies shall:

- Provide for customers to be credited in kilowatt-hours (kWh), valued at an amount per kWh equal to the sum of delivery service charges and supply service charges for residential customers, and equal to the sum of the volumetric energy (kWh) components of the delivery service charges and supply service charges for non-residential customers, for any net excess generation (NEG) in a billing period. NEG is carried over to subsequent billing periods to offset a customer's consumption in those billing periods until all credits are used or until the end of a 12-month period, ending either December 31 or July 31, to be chosen at the discretion of the customer. (In essence, NEG is carried over to the customer's next bill at the utility's retail rate.) Any unused NEG at the end of a 12-month period is forfeited by the customer and credited at the utility's avoided-cost rate to Delaware's Green Energy Fund. Customers retain ownership of renewable-energy credits (RECs) associated with electricity produced and consumed by the customer-generator. However, RECs associated with NEG convey to the utility.
- Ensure that for competitive utilities -- including competitive municipal utilities and competitive electric cooperatives -- net-metered customers electric service at nondiscriminatory rates that are identical, with respect to rate structure and monthly charges, to the rates that a customer that is not net metering would be charged. Competitive utilities may not charge a net-metered customer any stand-by fees or similar charges, with the exception that the Delaware Energy Office will promulgate rules that allow DEC and municipal electric companies to request to assess non-residential net-metered customers a fee or charge "if the electric utility's direct costs of interconnection and administration of net metering for these customer classes outweigh the distribution system, environmental and public-policy benefits of allocating the costs among the [utility's] entire customer base."
- Require that all systems meet all applicable safety and performance standards established by the NEC, the IEEE and UL to ensure that net-metered customers meet applicable safety and

performance standards and comply with the utility's interconnection tariffs and operating guidelines. Competitive utilities must develop interconnection rules by using as a guide IREC's model rules and the best practices identified by the U.S. Department of Energy. Municipal utilities must establish interconnection rules by July 2008. Competitive utilities may not require eligible net-metering customers who meet all applicable safety and performance standards to install excessive controls, perform or pay for unnecessary tests, or purchase excessive liability insurance.

- Require that net metering be accomplished using a single meter capable of registering the flow of electricity in two directions. An additional meter or meters to monitor the flow of electricity in each direction may be installed with the consent of the net-metered customer, at the expense of a competitive utility. If the existing meter of an eligible customer is incapable of measuring the flow of electricity in two directions, then the utility is responsible for all expenses involved in purchasing and installing a bi-directional meter. However, if a larger capacity meter is required to serve the customer, or if a larger capacity meter is requested by the customer, then the customer must pay the utility the difference between the larger capacity meter investment and the metering investment normally provided under the customer's service classification. If an additional meter or meters are installed, the net energy metering calculation must yield a result identical to that of a single meter.
- Permit utilities to disallow additional net-metered energy systems if the aggregate capacity of all net-metered systems exceeds 1% of the capacity necessary to meet the electric utility's aggregated customer monthly peak demand for a particular calendar year.

S.B. 8 was enacted July 24, 2007. No effective date is included in the bill. For more information on net metering in Delaware, see www.dsireusa.org.

(8) DISTRICT OF COLUMBIA - Net-Metering Nightmares Persist

The District of Columbia Public Service Commission (PSC) has granted a request by an individual and the Solar Energy Industries Association (SEIA) to investigate Pepco's net-metering policies. In a complaint filed with PSC, the individual (1) noted the Pepco required the installation of two meters, (2) questioned the utility's authority to install a meter in the "middle of [her] circuitry, rather than in the customary position for a meter between [Pepco's] circuits and hers," and (3) stated that by implementing rate changes involving transmission and delivery for net metering, Pepco is not following the spirit of the law. SEIA's complaint asks the PSC to investigate Pepco's policy of levying distribution and transmission charges on the *output* of net-metering customers, and to modify Pepco's standard net-metering contract to allow net metering on the utility's Low-Voltage Alternating Current (LVAC) system.

The PSC has ordered Pepco to respond to the complaints by August 10, 2007. After reviewing Pepco's response, the PSC will determine if the relevant language in the utility's tariffs and standard contract are in the public interest and comply with the commission's policies, orders and regulations.

(9) FLORIDA - Governor Directs PSC to Develop Interconnection, Net-Metering Rules

Florida Governor Charlie Crist has issued an executive order (07-127) instructing the Public Service Commission (PSC) to initiate rulemakings to establish net metering and interconnection standards for renewables, and a 20% renewable portfolio standard (RPS) with a focus on solar and wind. The executive order states that the interconnection rulemaking would seek to adopt the IEEE 1547 technical standard in order to reduce the cost of connecting solar and other renewables to the grid. The net-metering rulemaking would seek to authorize a uniform, statewide method that allows residential and commercial customers to net meter renewable-energy systems up to one megawatt (MW) in capacity. The PSC has been directed to commence these rulemakings on or before September 1, 2007. The executive order also establishes aggressive, specific goals for reducing the Florida's greenhouse-gas emissions.

(10) ILLINOIS - ICC Approves IEEE 1547 Interconnection Standard with Puzzling Exception

The Illinois Commerce Commission (ICC) has determined that any standard arising from its current interconnection proceeding (Docket No. 06-0525) must incorporate the IEEE 1547 technical standard for systems up to 10 megawatts (MW) in capacity, with a curious exception. If there are situations in which the IEEE Standard 1547 would allow for a trip time of two seconds for frequency or voltage abnormality, a utility may require a specific trip time of less than two seconds or else require the generator to accept responsibility for any damages that might result from the generator's equipment having a longer trip time. This exception was proposed by ComEd, which argued that the IEEE 1547 standard might be interpreted to conflict with the operation of the utility's distribution system. It is highly irregular -- and perhaps unprecedented -- for a state regulatory authority to allow exceptions or modifications to the IEEE 1547 standard.

The ICC is still considering the federal interconnection standard contained in Section 1254 of the federal Energy Policy Act of 2005 (EPAct 2005). While the ICC has determined that it will adopt the IEEE 1547 technical standard (with the condition noted above), the commission noted that it is not prepared to implement an interconnection standard. Currently, stakeholders are still in the process of engaging in workshops for the purpose of developing standards regarding, among other things, technical screening, standardized fees and legal issues, such as, dispute resolution and insurance, and the method of implementation of the standards.

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(11) KANSAS - KCC Rejects Federal Interconnection Standard

The Kansas Corporation Commission (KCC) has rejected the interconnection standard contained in the federal Energy Policy Act of 2005 (EPAct 2005). The KCC sided with the state's electric utilities on most questions posed during its investigation (Docket No. 07-GIME-104-GIV), ruling that "the current tariffs are sufficient for the purposes of establishing non-discriminatory rates and service for interconnection of customer generation and for providing necessary generic requirements for each utility's interconnection process." Furthermore, the commission noted that interconnection has already been addressed by K.S.A. 66-1238 and implemented in Docket No. 04-GIME-080-GIE. However, Kansas still does not have uniform, statewide interconnection standards based on the IEEE 1547 technical standard.

The federal Energy Policy Act of 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(12) MARYLAND - PSC Staff Files Revised Interconnection Rules, Recommends Rulemaking

The Maryland Public Service Commission's (PSC) Office of Staff Counsel has filed a supplemental report of the Maryland Generator Interconnection Standards Working Group, which includes revised proposed interconnection rules for distributed generation (DG). The current version of the proposed rules includes four levels of interconnection review for DG systems up to 10 megawatts (MW) in capacity, including systems that do not export electricity. The IEEE 1547 standard is the technical foundation of interconnection. This proceeding is designated Case No. 9060.

The supplemental report provides an analysis of issues and objections raised by SunEdison to the previous version of the proposed interconnection rules. These issued were discussed at a special meeting of the working group held July 10, 2007. The report addresses the resulting resolutions, which include areas of consensus and non-consensus. The current version of the revised proposed rules, attached as an appendix to this report, incorporates many of these resolutions.

Staff noted in its filing that that the working group established for the purposes of the PSC's consideration and determination on interconnection standards in Case No. 9060 satisfies the commission's tasking under S.B. 595. This legislation, enacted in April 2007, requires the PSC to form a small generator interconnection working group to develop interconnection standards and procedures that are "consistent with nationally adopted interconnection standards and procedures," and to revise the state's interconnection standards and procedures on or before November 1, 2007.

In addition, based on the record established in Case 9060, staff recommended that the PSC issue an order in which it finds that that implementation of interconnection standards as set forth in Section 1254 of the federal Energy Policy Act of 2005 (EPAct 2005) is appropriate. Furthermore, staff recommended that the PSC initiate a rulemaking to adopt small generator interconnection rules and revise the commission's regulations, using the rules proposed by the working group as the model for such regulations. Interested parties should be given an opportunity to comment on the proposed regulations during the rule making proceeding.

S.B. 595 also raised net metering to 2 MW and implemented a more aggressive renewable portfolio standard (RPS) in Maryland, requiring a 2% solar set-aside by 2022. As a result of these policies, Maryland is projected to add 1,500 MW of solar capacity by 2022.

(13) MISSOURI - PSC Rejects Federal Net-Metering Standard, Adopts IEEE 1547

The Missouri Public Service Commission (PSC) has concluded that prior state action on "net metering" satisfies the requirement of Section 1251 of the federal Energy Policy Act of 2005 (EPAct 2005), and no further action by the commission is necessary. The "net metering" statute currently in effect in Missouri actually constitutes "dual metering," a far less favorable arrangement for customer-generators than actual net metering. However, legislation enacted in June 2007 (SB 54) will establish actual net metering (albeit with strict conditions), effective January 1, 2008. This proceeding is designated Case No. EO-2006-0493. See www.dsireusa.org for more information on net metering in Missouri.

With respect to the federal interconnection standard contained in Section 1254 of EPAct 2005, the PSC determined that "the change in IEEE standards renders the prior state action exemption partially inapplicable to the interconnection provisions of this rule." In order to adopt the latest applicable IEEE interconnection standard, the PSC ordered all regulated electric utilities to revise their tariffs to identify specifically compliance with IEEE 1547 as a criterion for approval of customer interconnection of distributed generation (DG). The utility deadline for filing revised compliance tariffs was August 1, 2007. This proceeding is designated Case No. EO-2006-0497.

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-

hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(14) NEW YORK - PSC Determination Dismisses Commercial Net Metering

The New York Public Service Commission (PSC) has rejected the standard for net metering contained in the federal Energy Policy Act of 2005 (EPAct 2005), concluding that prior state actions are in compliance the federal requirements. Several stakeholders had filed comments in the proceeding (Case 06-E-0761) arguing that net metering should be extended to commercial customers, among other improvements to the state policies currently in effect. However, the PSC ruled that although its current net-metering regulations apply to "some" but not "all" customers, it interprets these regulations to constitute a "comparable" net-metering standard, as described in Section 1251 of EPAct.

Every state that borders New York allows commercial customers to net meter. Three bordering states -- New Jersey, Connecticut and Pennsylvania -- allow net metering for commercial systems with a capacity of two megawatts (MW) or (in Pennsylvania's case) larger.

The federal Energy Policy Act of 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(15) NEW YORK - LIPA Races Past 1,000 PV Installations

The Long Island Power Authority (LIPA) dedicated the installation of Long Island's 1,000th solar-electric system in on June 26, 2007. LIPA's Solar Pioneer program has provided rebates totaling more than $26 million for 5,781 kilowatts (kW) of solar panels. Of the total number of PV systems installed, 954 are residential applications and 46 are commercial applications. Furthermore, LIPA has accepted 271 pending PV applications for a total of over $7.2 million in rebates for 1,841 (DC) kW of additional PV power.

"Solar installations on Long Island have been growing at a steady pace," said LIPA CEO/President Richard Kessel. "The 1,000th solar roof represents an increasing awareness on Long Island that we can take control of our energy future and work toward energy independence by using more alternative energy technologies."

"[Renewable Energy Long Island] had a goal to see 1,000 solar roofs installed on Long Island by the end of 2007, and we are thrilled to have reached this important solar milestone six months ahead of schedule," said Gordian Raacke, executive director of Renewable Energy Long Island (RELI), a not-for-profit organization conducting outreach and education on clean energy technologies and providing information and assistance to homeowners interested in installing solar energy systems. "Thanks to attractive LIPA cash rebates, sizable tax credits, and the work of our tireless SolarCorps volunteers and solar homeowners, a record number of Long Island Solar Pioneers are doing their part to lower emissions, create local jobs and cut our dependency on fossil fuels."

LIPA's Clean Energy Initiative (CEI), through its various conservation, energy efficiency, and load-reduction programs, has produced total energy savings of over 1,800 gigawatt-hours (GWh) during the last seven years, according to the power authority. For more information about LIPA's CEI programs, see www.lipower.org.

(16) NORTH CAROLINA - NCUC Rejects Federal Interconnection, Net-Metering Standards

The North Carolina Utilities Commission (NCUC) has determined that it has already considered and implemented standards for interconnection and net metering, in compliance with Sections 1251 and 1254 of the federal Energy Policy Act of 2005 (EPAct 2005). However, in its decision the NCUC noted that legislation (S.B. 3) passed by both houses of the North Carolina General Assembly -- but not yet signed by the governor -- would require the commission to revisit net metering and interconnection. The NCUC stated that it anticipates initiating further consideration of its net metering and interconnection standards, assuming the enrolled bill is enacted, and offering stakeholders to raise substantive issues regarding net metering and interconnection in the context of any such future proceedings.

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(17) OREGON - PUC Boosts Net Metering to 2 MW, Adopts New Interconnection Standards

The Oregon Public Utilities Commission (PUC) has adopted new rules for net metering, raising the individual system limit to two megawatts (MW) for nonresidential applications. Oregon has become the 12th U.S. state to establish a net-metering limit of at least 1 MW for certain renewable-energy systems.

The new rules apply to PGE and PacifiCorp customers that generate electricity using solar power, wind power, hydropower, fuel cells or biomass resources. (The rules do no apply to customers of Idaho Power, which provides net metering to Oregon customers pursuant to rules adopted by the Idaho Public Utilities Commission.) The limit on an individual residential system is 25 kilowatts (kW). Net-metered systems must be intended primarily to offset part or all of a customer's requirements for electricity. Utilities may not limit the aggregate capacity of net-metered systems.

Net excess generation (NEG) is carried over to the customer's next bill as a kilowatt-hour credit for a 12-month period. Unless a utility and a customer otherwise agree, the annual billing cycle will conclude at the end of the March billing cycle of each year. Any NEG remaining at the end of a 12-month period will be credited at the utility's avoided-cost rate to customers enrolled in Oregon's low-income assistance programs.

The aggregation of meters for net metering is permitted. There is no limit on the number of net-metering facilities per customer as long as the net-metering facilities in aggregate on a customer's contiguous property do not exceed the applicable capacity limit.

Oregon's new rules include three levels of interconnection for net-metered systems, and require the use of a standard application, a standard agreement, and reasonable procedural timelines for utilities and applicants. Each utility must designate an employee or office from which an applicant can obtain basic application forms and information through an informal process. With the exception of certain inverter-based systems 25 kW or less, a manual, external disconnect switch is required. Utilities may not require

customers to purchase additional liability insurance or to name the utility as an "additional insured" on the customer's liability policy.

Level 1 interconnection review applies to certified, inverter-based systems up to 25 kW in capacity that comply with IEEE standards and UL 1741. A system is considered "certified" if it has been submitted by a manufacturer to a nationally recognized testing lab, and has been tested and listed by the lab. Systems must pass specific technical screens. Utilities may not charge application fees or other fees for Level 1 review.

Level 2 interconnection review applies to certified systems up to 2 MW that comply with IEEE standards and UL 1741, as applicable, but do not qualify for Level 1 review. A system is considered "certified" if it has been submitted by a manufacturer to a nationally recognized testing lab, and has been tested and listed by the lab. Systems must pass specific technical screens. Interconnection to area networks is permitted, with limitations. Utilities may charge fees of up to $50 plus $1 per kW of system capacity, plus "the reasonable cost of any required minor modifications to the electric distribution system or additional review." Costs for engineering work performed as part of an impact study or interconnection facilities study are limited to $100 per hour.

Level 3 interconnection review applies to systems that do not qualify for Level 1 review or Level 2 review. Systems must pass specific technical screens. Interconnection to area networks is permitted, with limitations. Utilities may charge fees of up to $100 plus $2 per kW of system capacity, plus charges for time spent on any required impact or facilities studies. Costs for engineering work performed as part of an impact study or interconnection facilities study are limited to $100 per hour. If a utility must install facilities in order to accommodate the interconnection of a system, the applicant must pay for the costs of such facilities.

(18) PENNSYLVANIA - Net Metering Annualized; New 3-MW Limit for Nonresidential Systems

Pennsylvania has enacted legislation (H.B. 1203) increasing the maximum limit of a net-metered energy system from one megawatt (MW) to 3 MW for nonresidential systems that generate electricity to offset part or all of the customer's load. Pennsylvania now boasts the highest limit for nonresidential net-metered systems in the United States -- with the exception of New Mexico and Ohio, which allow larger systems that are sized to match part or all of a customer’s load. In addition, the new law extends net metering to systems greater than 3 MW but not greater than 5 MW that are available to operate in parallel with the grid during grid emergencies, or where a microgrid is in place for the purpose of maintaining critical infrastructure.

Furthermore, H.B. 1203 states that net-metered customers will receive credit at the utility's retail rate for any net excess generation (NEG) at the end of a billing cycle. Net metering therefore takes place on an annual basis, as opposed to on a monthly basis. Prior to the enactment of H.B. 1203, NEG was carried over to the customer's next bill as a credit based on the utility's avoided-cost rate. In addition, the definition of "net metering" was revised to restrict certain forms of "virtual meter aggregation." Virtual meter aggregation is allowed on properties owned or leased and operated by a customer-generator and located within two miles of the boundaries of the customer-generator's property and within a single [utility's] service territory" are eligible for net metering.

The new law also instructs the Pennsylvania Public Utilities Commission (PUC) to develop "technical and net-metering interconnection rules for customer-generators intending to operate renewable onsite generators in parallel with the electric utility grid, consistent with rules defined in other states within the service region of the regional transmission organization that manages the transmission system in any part of the [state.]"

The PUC must convene a stakeholder process to develop these rules within nine months of the effective date of the new law, which was enacted July 17, 2007. The commission has stated that it will "promptly" begin the process of revising its interconnection and net-metering regulations, noting that utilities must

apply the new NEG standard for net-metered customers beginning with the first full billing period after July 17, 2007.

See www.dsireusa.org for more information about net metering in Pennsylvania.

(19) SOUTH DAKOTA - PUC Adopts Federal Interconnection Standard

The South Dakota Public Utilities Commission (PUC) has decided to adopt the federal interconnection standard contained in Section 1254 of the federal Energy Policy Act of 2005 (EPAct 2005), having concluded that the adoption of this standard "will facilitate the development of distributed generation and will encourage the goals of PURPA." In an order issued July 26, 2007, the PUC specifically adopted the IEEE 1547 and 1547.1 standards, noting that it will seek comment on subsequent IEEE 1547 standards after they are officially approved by IEEE.

Utilities must file their current interconnection procedures and technical requirements with the PUC for approval within 60 days of the commission's order. Afterward, PUC staff will collaborate with the utilities, in a workshop setting, to develop model interconnection procedures. An existing interconnection model, such as Minnesota's standards, might be used as a starting point. Following workshops, staff will submit a report in 2008 detailing the result of the workshops and provide a recommendation on how the PUC should proceed. This proceeding is designated Docket No. EL06-018.

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

(20) TEXAS - New Law Includes Laundry List of Interconnection, Net-Metering Amendments

Texas has enacted new legislation (H.B. 3693) that includes nebulous stipulations regarding net metering and interconnection, and instructs the Public Utilities Commission of Texas (PUCT) to conduct a study of combined heat and power (CHP). With respect to net metering and interconnection, the new law includes the following provisions:

- It is the intent of the legislature is to deploy "net metering and advanced meter information networks ... as rapidly as possible to allow customers to better manage energy use and cost controls, and to facilitate demand response initiatives."
- Municipal utilities and electric cooperatives must consider and make a determination regarding the federal net-metering standard contained in Section 1251 of the federal Energy Policy Act of 2005 (EPAct 2005). These utilities must report their decisions to the Texas State Energy Conservation Office and include in their reports information regarding metering electricity generated by PV systems on public schools.
- Transmission and distribution utilities and electric utilities must allow customers to interconnect renewable-energy systems up to two megawatts (MW) in capacity if (1) a system has a five-year warranty against breakdown or undue degradation, and (2) the rated capacity of the system does not exceed the utility's service capacity. The PUCT must establish by rule the safety, technical and performance standards for renewables that may be interconnected. In adopting rules, the PUCT will consider standards published by UL, the NEC, the NESC and IEEE. Utilities are prohibited from requiring owners of eligible systems that meet relevant standards to purchase an amount, type or classification of liability insurance the system owner would not have in the absence of the system. Transmission and distribution utilities and electric utilities must offer

customers certain metering options, including separate meters that measure the load and system output, or a single meter capable of measuring in-flow and out-flow at the point of common coupling meter point. The system owner generally must pay the differential cost of metering. These conditions apply to net metering.

- System owners retain ownership of all renewable-energy credits (RECs) associated with the generation of electricity, unless the system owner engages in a contract to sell or trade the credit. The PUCT will address the ownership of RECs associated with power sold to the utility.
- An electric utility or retail electric provider may contract with a renewable-energy system owner so that surplus electricity produced by the system owner may be sold to the transmission grid and distribution system, and the net value of that surplus electricity is credited to the system owner.
- In areas where competition has not been introduced, a system owner must sell surplus electricity at a value agreed to between the system owner and the electricity provider, which may include but is not limited to, "an agreed value based on the clearing price of energy at the time of day that the electricity is made available to the grid or it may be a credit applied to an account during a billing period that may be carried over to subsequent billing periods until the credit has been redeemed. The Electric Reliability Council of Texas (ERCOT) must develop procedures so that the amount of electricity purchased from a customer-owned system "is accounted for in settling the total load served by the provider that serves the owner's load by January 1, 2009." A customer requesting net metering for these purposes must have equipment capable of providing measurements consistent with ERCOT's settlement requirements.
- H.B. 3693 also requires the PUCT to study the installation and use of CHP in Texas, and to submit a report regarding its findings to the state legislature in 2009. The report must include (1) an explanation describing CHP technology and its use; and (2) an explanation of how CHP technology can be implemented in Texas to meet the state's energy-efficiency goals.

Contact the PUCT for more information about the possibility of participating in any of these efforts.

NATIONAL NEWS

(21) EIA Provides Juicy Net-Metering Data

The U.S. Energy Information Administration (EIA) has published *Renewable Energy Annual 2005*, the 11th edition in a series of annual publications on renewables. The new edition, published in July 2007 and based on 2005 data, presents four reports, accompanied by data tables and graphics covering various aspects of the renewable-energy marketplace. The reports are titled (1) *Renewable Energy Trends in Consumption and Electricity*, (2) *Solar Thermal and Photovoltaic Collector Manufacturing Activities*, (3) *Survey of Geothermal Heat Pump Shipments*, and (4) *Green Pricing and Net Metering Programs*. The latter report includes the estimated number of U.S. net-metering customers by customer class from 2002-2005, and the number of U.S. net-metering customers by state and customer class from 2004-2005.

There were 21,146 net-metered energy systems in the United States in 2005, compared with 15,826 net-metered systems in 2004 and 6,813 in 2003. The overwhelming majority of net-metered systems (82%) in 2005 were installed in California, and 91% of all systems in 2005 were residential. Significantly, many states saw more than 10-fold increases in the number of net-metering customers in 2005 versus 2004. After California, the state leaders in net-metered energy systems in 2005 were:

- NJ - 604 (54 in 2004)
- OR - 341 (40 in 2004)
- MT - 253 (76 in 2004)
- MA - 246 (20 in 2004)
- MN - 193 (16 in 2004)

- NV - 188 (10 in 2004)
- VT - 164 (15 in 2004)
- TX - 163 (11 in 2004)
- AZ - 152 (7 in 2004)
- CO - 145 (13 in 2004)

No net-metered systems were reported by utilities in a handful of states -- Alaska, Louisiana, Mississippi, Nebraska, North Carolina, South Carolina, South Dakota and Tennessee -- and the District of Columbia in 2005.

(22) WAPA Rejects EPAct Standards for Net Metering, Interconnection

The Western Area Power Administration has rejected the standards for interconnection and net metering contained in the federal Energy Policy Act of 2005 (EPAct 2005). Regarding net metering, WAPA stated that "applying a net-metering standard to a customer served by multiple power suppliers presents unique challenges," and that "these situations are better dealt with on a case-by-case basis."

With respect to interconnection, WAPA stated that its policies and procedures for interconnection are set forth in its Open Access Transmission
Tariff (OATT), which is on file with the Federal Energy Regulatory Commission (FERC). In addition, WAPA noted that it "is primarily a bulk wholesale electric provider that provides a very limited amount of energy to end-use loads, and that it "intends to support ongoing customer renewable energy and energy conservation in a targeted manner on a case-by-case basis."

EPAct 2005 requires state public utility commissions and certain "nonregulated" utilities, including WAPA, to consider standards for net metering and interconnection. ("Nonregulated" utilities generally are those that are not subject to state regulatory jurisdiction and that have annual retail sales exceeding 500 million kilowatt-hours.) Section 1251 of EPAct requires states and "nonregulated" utilities to commence consideration of a net-metering standard on or before August 8, 2007, and to make a determination regarding this standard on or before August 8, 2008. Section 1254 of EPAct requires states and "nonregulated" utilities to commence consideration of an interconnection standard based on the IEEE 1547 standard on or before August 8, 2006, and to make a determination regarding this standard on or before August 8, 2007.

WAPA, established in 1977, sells power to electric cooperatives, municipalities, public utility districts, private utilities, federal and state agencies, Indian tribes, water systems and irrigation districts. WAPA's transmission system totals approximately 17,000 line miles in 15 states that are generally west of the Mississippi River.

(23) FERC Announces Pilot Licensing Process for Ocean-Power Technologies

The Federal Energy Regulatory Commission (FERC) will convene a technical conference on licensing pilot projects for ocean-energy technologies to discuss a staff proposal for a process that could complete licensing in as few as six months. The goal of the staff proposal is to complete the full project licensing process in six or months or less, provide for FERC oversight and input from affected states and other federal agencies, and allow developers to generate electricity while conducting the requisite testing. The process would be available for projects that are five megawatts (MW) or less in capacity, removable or able to shut down on relatively short notice, located in waters that have no sensitive designations, and designed for the purpose of testing new hydro technologies or determining appropriate sites for ocean, wave and tidal energy projects. The conference will be conducted October 2, 2007, in Portland, Oregon.

“Perhaps the greatest barrier to realizing the potential of new hydrokinetic technologies is that they are unproven," FERC Chairman Joseph Kelliher said. “These technologies must be demonstrated before large-scale commercial deployment can occur. [We are taking] a major step to reduce the barriers to the

success of these new hydro technologies, by proposing a simplified licensing process suitable for licensing pilot projects."

At its December 2006 conference on hydrokinetic energy, the FERC learned that these technologies are in a developmental phase, which presents significant risks for developers due to a lack of information about engineering performance and environmental effects, and limited access to financing. In response to the Commission's February 2007 Notice of Inquiry on preliminary permits for the new technologies, at least 14 entities addressed the need for a pilot program licensing process. Comments included recommendations that FERC address the unique characteristics of pilot projects by: permitting connection to the national grid both for study purposes and to generate revenue; implementing a simpler, faster review process; requiring site restoration following experimental deployments; and requiring a license period of five years rather than 30-50 years.

"This new generation of hydrokinetic technologies will bring hydropower to the forefront of the renewable energy debate," FERC Commissioner Philip Moeller said. "It is generating a lot of enthusiasm throughout the country, particularly in coastal states like my home state of Washington. FERC wants to harness this enthusiasm by exploring ways to reduce the regulatory barriers to realize the amazing potential of this domestic renewable power source–one that can help meet renewable portfolio standards established by states."

(24) NGA Chair Announces Clean-Energy Initiative

In his first act as chair of the National Governors Association (NGA), Minnesota Gov. Tim Pawlenty announced his chair's Securing a Clean Energy Future initiative. In general, in order to address the swarm of energy challenges the United States faces, this initiative will examine ways governors and states can:

- Increase production of cleaner domestic fuels;
- Promote advanced electricity generation;
- Improve energy efficiency and conservation; and,
- Accelerate research and development of clean-energy technologies.

"America is at a tipping point," Pawlenty said. "Our country is too dependent on imported sources of energy, and greenhouse-gas emissions continue to grow too quickly. Governors have a tremendous opportunity to lead the country toward a cleaner, more independent, more secure energy future."

(25) NARUC Board Adopts Energy Resolutions

The National Association of Regulatory Utility Commissioners (NARUC) has passed a series of energy-related resolutions setting national policy for the country's state public utility commissioners. The resolutions were made final after being approved by the association's board of directors at the conclusion of the NARUC summer committee meetings in New York on July 18, 2007.

NARUC's Electricity Committee adopted two resolutions related to renewables and, potentially, other forms of clean distributed generation (DG). The first resolution urges the U.S. Department of Energy (DOE) to revise its proposed rules to assure full compliance with the intent and purposes of Title XVII of the 2005 Energy Policy Act to assure that loan guarantees may be used to cover 80% of the full project cost of a generating facility, as specified by Section 1702 of Public Law 109-58, thereby enabling the borrower to carry out the project, and allow any un-guaranteed debt of the proposed project to be marketed separately from guaranteed debt to assure least cost financing is achievable. The second resolution calls on the U.S. Congress to ensure that any national climate-change legislation minimizes, to the extent possible, adverse impacts upon public utility ratepayers and the companies that NARUC members are responsible for regulating.

In addition, NARUC's Energy Resources and Environment Committee adopted a resolution acknowledging the value of a production tax credit (PTC) to the continued development and commercialization of renewable-energy technologies and urged Congress to approve a 10-year renewal and extension of the 1.5 cent per kilowatt-hour (adjusted for inflation) PTC for electricity generated from new facilities brought online after December 31, 2008, using wind, solar, geothermal or biomass energy resources.

(26) ISO New England Publishes Analysis of Electricity Needs, Provides Policy Tool

ISO New England has published a report that examines the reliability, economic and environmental impacts of pursuing a range of resource scenarios for the region to meet future electricity needs. The 86-page report, titled *New England Electricity Scenario Analysis*, is designed to serve as a reference document for policymakers and the industry to use when considering fulfilling the region's energy requirements. The publication provides an analysis of the drivers for electricity costs, fuel-diversity issues and environmental impacts.

Over an eight-month period, interested stakeholders and the ISO evaluated seven basic scenarios involving different mixes of supply- and demand-side resource scenarios. The report uses specific assumptions developed by the stakeholder group about various technology outcomes that represent only a one-year "snapshot" in time, serving as a point of reference. Based on this specific set of assumptions, some of the key themes of the analysis include:

- New England likely will continue to depend heavily on natural-gas-fired electricity production.
- Fossil-fuel prices drive the region's energy mix, electricity prices and emissions; the relative costs of natural gas and oil strongly influence electric energy prices and air emissions.
- New England likely will face significant challenges in meeting its allocation of Regional Greenhouse Gas Initiative allowances.
- Lower system-wide wholesale electricity prices and reduced air emissions seem possible by reducing demand or supplying large amounts of electric energy from low-cost fuel sources and those fuels that emit few pollutants.
- Demand-side resources appear to provide capacity and energy to the system at relatively low capital costs and with low emissions relative to other resources.

"New England electricity consumers want reliable, clean power, and they want it at reasonable and competitive prices," said Gordon van Welie, president and CEO of ISO New England. "This analysis is intended to provide valuable information for regional policymakers and other stakeholders to use as they pursue these goals."

The report also found that the region likely will need continued transmission improvements, especially if the region adds renewable-energy resources in areas far from major cities, or imports more hydroelectric power from Canada. In addition, adding infrastructure in the regional natural gas supply and delivery systems and lessening gas-sector demands could mitigate price volatility during periods of high demand.

The analysis envisioned a peak system demand of about 35,000 megawatts (MW) by 2020-2025 and examined the addition of 8,000 MW. Each of seven scenarios assumed that 2,600 MW would reflect the mix of recently proposed power sources, mostly natural gas power plants. The remaining 5,400 MW represented a large concentration of a certain technology, such as nuclear, new coal, natural gas, imports, demand-side resources or renewables, to assess their impacts. More than 100 representatives from ISO New England, the New England Conference of Public Utilities Commissioners, the New England Power Pool, consumers, utilities, state regulators and environmental experts were involved in the analysis.

Stakeholders may utilize the ISO's study tool, available on ISO New England's web site, to mine voluminous amounts of data and conduct their own analyses with assumptions that they believe to be valid.

INTERNATIONAL NEWS

(27) CANADA - Refurbished PowerConnect Site Offers Multiple DG Resources

PowerConnect, a collaborative effort between the Electro-Federation Canada and Natural Resources Canada, has unveiled an upgraded web site of distributed energy resources. The site provides a central location of recent developments in distributed generation (DG) in Canada. Technical information, regulatory information and other publications related to the deployment of DG within the competitive electricity market are included on the site. Specifically, the site includes information related to interconnection, standard offers, codes and standards, net metering and strategic DG research.

PowerConnect represents a commitment by the Electro-Federation Canada and Natural Resources Canada to support the understanding and adoption of alternate-energy resources, including photovoltaics, wind, fuel cells, microturbines and bioenergy. An important objective of this effort is to establish and nurture a sustainable and viable DG industry in Canada. The project has already led to the development and implementation of a national guideline and standard for the interconnection of small DG systems.

(28) EUROPEAN UNION - Governments Frustrated by Growth in Electricity Use

A report from the European Commission's in-house scientific service, the Joint Research Centre (JRC), indicates that overall electricity consumption is growing in the European Union (EU). Even if the EU and the member states have adopted numerous successful measures to curb energy consumption and associated carbon-dioxide emissions, the electricity consumption in the residential sector of the EU-25 grew at a rate comparable to overall GDP (10.8%), effectively nullifying overall savings between 1999 and 2004. The report, titled *Electricity Consumption and Efficiency Trends in the Enlarged European Union*, highlights the key findings of an in-depth 2006 survey on electricity consumption in buildings in the enlarged EU, and the market share of energy-efficient appliances and equipment. It calculates future potential savings based on currently available technologies.

According to the report, electricity consumption in the tertiary (service) sector increased by 15.8%, and industry consumption by 9.5%. The average consumption for a single household in the EU-25 was 4,098 kilowatt-hours (kWh) in 2004. According to the report, this figure could be reduced by 800 kWh per house per year, or about 20% less electricity consumption in each household, if replacement of existing appliances and equipment and a full phase out of incandescent lighting were actively promoted in all EU member states.

In November 2006, the European Commission presented an action plan on energy efficiency with the goal of consuming 20% less energy in 2020 than today. The 60 measures included in the action plan address many of the problems identified in the report. The JRC report shows that such policies have permanently changed the face of the appliance market for the better in terms of efficient energy use, particularly for "white goods," such as refrigerators, washing machines and dishwashers. Nevertheless, the report clearly shows that electricity consumption in the EU-25 continues to increase, across all sectors -- residential, service and industry.

(29) GHANA - $210 Million in Aid to Promote Renewables, Efficiency, Energy Access

A handful of finance organizations have approved $210 million in financing in an effort to increase electricity access, supply and reliability in Ghana, where rolling blackouts and inaccessibility continue to

impede economic growth. The main objective of the Energy Development and Access project is to support long-term efforts aimed at (1) improving the performance of the power companies, (2) increasing energy efficiency, (3) scaling-up energy access to reduce inequity due to urban-rural imbalance, and (4) enhancing renewable-energy generation capacity.

“The current energy crisis in Ghana is one of the key impediments to growth," said World Bank Senior Energy Economist and Project Team Leader Paivi Koljonen. "Improving overall sector management, and the access and reliability of electricity supplies are pressing needs for Ghana today, and the Project is designed to address these. It will also help provide infrastructure that will help in the creation of new business opportunities and the acceleration of economic growth and employment.”

In support of Ghana’s multi-faceted energy sector strategy, the project will provide grants to developers of renewable-energy generation projects —- including small hydropower, wind and biomass —– for the benefit of communities outside the main national grid system. It will also finance the establishment of an independent Rural Electrification Agency, which will coordinate all rural electrification programs. In all, 134,000 new customers in rural towns and villages will be connected the national power grid by the project's end.

An important component of the project is the improvement of the distribution of electricity supply in the long-run, and in improving the sector’s commercial performance. It is estimated that about 25% of total electricity generated is lost in the distribution process, according to the World Bank.

Of the total estimated project cost of US$210.55 million, the World Bank will provide a $90 million equivalent International Development Association (IDA) credit on standard terms over a 40-year period of maturity and with a 10-year grace period, and a $5.5 million Global Environment Facility (GEF) grant. Other sources of financing include the Africa Catalytic Growth Fund ($50 million), the African Development Bank ($18.25 million), the Global Partnership on Output-based Aid ($6.25 million), Ghanaian Financial Intermediaries ($7.75 million), and the Swiss Agency for Development and Cooperation ($11 million).

(30) NORTH AMERICA - Midwest REC-Tracking System Takes Effect

Four U.S. states and one Canadian province -- Iowa, Manitoba, Minnesota, North Dakota and Wisconsin -- have jointly implemented a new regional system to track and promote the trade of renewable-energy credits (RECs). The web-based Midwest Renewable Energy Tracking System (M-RETS), a market-based system designed to encourage more renewable-energy development throughout the upper Midwest and lower Canada, will help participants meet their renewable energy portfolio standards (RPSs) and objectives. Registration is now open for power generators, utilities, marketers and qualified reporting entities wishing to participate in the M-RETS market.

All five jurisdictions have implemented policies requiring or encouraging the development and use of renewable resources. M-RETS offers a tool for these jurisdictions to collect data on renewable-energy production, and provides a mechanism for monitoring their respective standards and goals. Several other states and provinces in the region are also expected to join as the program progresses, according to the Wisconsin Public Service Commission.

(31) UNITED KINGDOM - Effort Launched to Facilitate More Grid-Tied Renewables

The Transmission Access Review, a new project launched by the U.K. Office of Gas & Electricity Markets and the U.K. Department for Business, Enterprise and Regulatory Reform, will recommend changes to the overall framework of the national power grid in order to improve the delivery of interconnected renewables. This effort, an attempt to ease lengthy delays in linking new wind-energy farms and other renewables to the national grid, takes into account the potential for reduced carbon emissions, consumer costs and the impact of supply on security.

“There are currently around 12 [gigawatts] of projects seeking connection in Scotland, along with many more in other parts of the [United Kingdom]," said U.K. Energy Minister Malcolm Wicks. "This is enough capacity to make a significant contribution toward the government’s aspiration of 20% of electricity coming from renewable sources by 2020. Getting more green electricity connected to the grid is essential if we are to burn less fossil fuels. This review will help us to ensure that renewable generators can supply more low-carbon electricity as quickly as possible.”

The current technical, commercial and regulatory framework for the delivery of new transmission infrastructure will be considered. The review will also examine how the grid is managed to ensure that it remains maximally functional as the proportion of renewable generation in the system grows. The Transmission Access Review will set out proposals for changes to the framework for transmission access to improve the connection of renewable generation to the grid. It will address

- New approaches to sharing transmission capacity between different forms of generation;
- The way in which infrastructure is built and operated; and
- Whether the right incentives are in place to encourage the timely connection and disconnection of generating capacity to ensure we maintain our current high level of security of supply.

It will look ahead to 2020 and consider ways to support the delivery of the government’s aspiration of 20% of electricity supplied by renewable generation and any targets that may be agreed upon at the European Union level. The launch of the review is one of the key renewable energy actions of the *Energy White Paper*, which was published in May. A final report on grid connection will be published in May 2008; this report will set out progress of the review in identifying the need for new legislation and any reforms that may be required.

INDUSTRY NEWS

(32) Installed Global Wind-Energy Capacity Rises 26% in 2006

The aggregate capacity of new wind turbines installed worldwide in 2006 totaled 15,200 megawatts (MW), according to a new *Vital Signs Update* from the Worldwatch Institute. Global wind-energy capacity increased almost 26% in 2006, exceeding 74,200 MW by the end of the year. Global investment in wind power was roughly $22 billion in 2006, and in Europe and North America, the power industry added more wind capacity than coal and nuclear capacity combined. The global market for wind equipment has risen 74% in the past two years, according to the Worldwatch Institute, leading to long back orders for wind-energy equipment in much of the world.

"Wind power is on track to soon play a major role in reducing fossil fuel dependence and slowing the buildup of greenhouse gases in the atmosphere," according to Worldwatch Senior Researcher Janet Sawin.” Already, the 43 million tons of carbon dioxide displaced by the new wind plants installed last year equaled more than 5% of the year’s growth in global emissions. If the wind market quadruples over the next nine years -- a highly plausible scenario -- wind power could be reducing global emissions growth by 20% in 2015."

Germany, Spain and the United States currently generate nearly 60% of the world’s wind power. However, the industry is shifting quickly from its European and North American roots to a new center of gravity in the booming energy markets of Asia. In 2006, India was the third-largest wind-energy installer and China took the fifth spot, thanks to a 170% increase in new wind-energy installations over the previous year. More than 50 nations now tap the wind to produce electricity, and 13 have more than

1,000 MW of installed wind-energy capacity. Rapid growth is expected in the next few years in Australia, Brazil, Canada, France and Portugal.

(33) Xantrex Launches New Lineup of PV Inverters for Residential, Commercial Use

Xantrex has unveiled a new series of inverters for photovoltaic (PV) systems, including single-phase and three-phase products. The Xantrex GT Series Grid Tie Solar Inverter lineup includes models for residential and commercial applications in North America, ranging from 2.5 kilowatts (kW) to 250 kW.

Xantrex has re-designed its single-phase GT Series lineup to include the GT2.8, GT3.3, GT4.0 and GT5.0 models. Each of these models features a 600-volt (AC), UL-listed, DC/AC disconnect, and 240/208-volt compatibility with line voltage auto-detection, for use in either single-phase or smaller three-phase applications. Passive cooling eliminates the need for a fan. Xantrex backs the single-phase GT Series units with a standard 10-year warranty on parts and labor.

The new three-phase commercial Xantrex GT100 and GT250 PV inverters, which have integrated transformers, replace the long-standing Xantrex PV Series. The new line of commercial solar inverters features best-in-class efficiency of 96%, measured in accordance with the California Energy Commission (CEC) standards, according to the company. Communication with the inverter is provided through built-in RS485/Modbus or RS232 connections. Xantrex GT100 and GT250 solar inverters are available with a standard five-year or optional 10-year warranty.

(34) Investment in Renewables Could Reach $750 Billion by 2016, E&Y Says

Global investment in renewable energy could reach $750 billion within the next 10 years, according to the latest Ernst & Young *Renewable Energy Country Attractiveness Index*, which tracks and scores investment in renewable energy. Demand for renewable energy is growing at unprecedented rates, driven by competing government incentives, and 2006 investment reached $100 billion, the publication states. The *All Renewables Index,* which scores investment for all forms of renewable energy, from solar to wind and biomass, shows that the United States continues to be the global leader -- a position the country has comfortably held since last fall 2006.

PUBLICATIONS AND ANNOUNCEMENTS

(35) NJATC Publishes PV Textbook

The National Joint Apprenticeship and Training Committee for the Electrical Industry (NJATC) has published *Photovoltaic Systems*, a comprehensive guide to the installation of commercial and residential solar-energy systems. Authored by Jim Dunlop, the textbook covers the principles of photovoltaics (PV) and how to incorporate the technology effectively into stand-alone or grid-connected electrical systems. Detailed illustrations clarify the concepts behind PV-system operation, while photographs of actual installations show how components are integrated to form complete PV systems. An accompanying CD-ROM provides interactive worksheets, quizzes, calculators, video clips and animated graphics depicting PV principles and operation and links to additional resources. The guide is available through American Technical Publications.

The NJATC's mission is to develop and standardize training to educate the members of the International Brotherhood of Electrical Workers (IBEW) and the National Electrical Contractors Association (NECA), ensuring and providing the electrical construction industry with the most highly trained and highly skilled workforce possible. For more information, visit www.njatc.org.

(36) SEI Offers New Edition of PV Manual

Solar Energy International (SEI) has published an updated edition of its *Photovoltaics: Design & Installation Manua*l. This text book provides an overview of photovoltaic (PV) electricity and discussions of PV system components, including modules, batteries, controllers and inverters; electrical loads, including lighting systems, refrigeration, water pumping, tools and appliances; analyzing sites; sizing systems; and installing systems. The manual also includes detailed appendices on system maintenance, troubleshooting and insolation data for more than 300 sites around the world. The manual costs $60.

(37) DOE Publishes Seminal Solar-Program Newsletter, Various SAI Resources

The U.S. Department of Energy (DOE) has published the first edition of its *Solar Energy Technologies Program Newsletter*, with coverage of the latest news on the federal Solar America Initiative. The 12-page newsletter includes information regarding program strategies and priorities for 2007, new solar products and collaborative R&D, DOE's technology pathway partnerships, solicitations for photovoltaics (PV) R&D, market transformation, policy analysis, and solar events.

In addition, DOE has published several resources related to the federal Solar America Initiative (SAI), including a two-page fact sheet that provides an overview of initiative, including goals, R&D strategies, market-transformation strategy and benefits to the country. A second resource, a two-page fact sheet on the 2007 Solar America Cities Awards, provides an overview of the awards to 13 U.S. cities and a map of all SAI projects.

(38) DOE Offers Best Practices for Incorporating Solar into Residential Construction

The U.S. Department of Energy (DOE)'s Building America program has issued a new handbook of best practices for residential builders considering solar applications. The 159-page publication, titled *High-Performance Home Technologies: Solar Thermal & Photovoltaic Systems,* explains current photovoltaic (PV) and solar-thermal building practices, and provides useful tips both for builders and homebuyers. The handbook also enhances the information contained in the previous best practices volumes, which give climate-specific tips for energy-efficient building in five climate zones.

The publication includes chapters for every member of the builder's team, including supervisors, architects, designers, site developers, marketers, managers and homeowners. Many of the building tips and other information presented are illustrated with real-life case studies of builders who design and construct energy-efficient homes in all climate zones. The handbook includes a sidebar on net metering

DOE's Building America program develops energy solutions for new and existing homes. By 2020, the Building America program seeks to enable the production of cost-effective net zero-energy homes, which combine state-of-the-art, energy-efficient construction and appliances with commercially available renewable-energy systems such as solar water heating and solar electricity. The program's primary goal is to enable industry to adopt systems engineering approaches to the design and construction of a large portion of all new housing.

(39) AWEA Offers Market Study of Small Wind

A new study published by the American Wind Energy Association (AWEA) provides an overview of the global market for small wind turbines. The 14-page publication provides information regarding the U.S. market and the aggregate foreign market, sales breakdowns for grid-tied and off-grid applications, installation data, companies, growth trends, factors affecting market growth, technological barriers, U.S.

jobs created by the industry, cost decreases, and the growth of small wind turbines versus photovoltaic (PV) systems.

(40) National RPS Would Spark Rural Renaissance, NFU Report Says

The National Farmers Union has published a report documenting how renewable electricity standards (RESs) -- also known as renewable portfolio standards (RPSs) -- significantly increase jobs, business activity and local tax revenues, particularly for farmers and rural communities. The 11-page paper, authored by Climate Solutions/Harvesting Clean Energy Network, highlights key findings from multiple studies documenting expected benefits from a 20% national RES.

The report argues that U.S. agriculture can vitally contribute to meeting energy-security challenges by harvesting wind power, biopower and other forms of renewables, concluding that these contributions "will spur economic renaissance in farm belts across the country, and give new generations a chance to stay in rural communities."

(41) DOE Publishes Fuel-Cell Fact Sheet

The U.S. Department of Energy's Hydrogen Program has published a two-page fact sheet on fuel cells for backup-power applications. The fact sheet consists of an overview of fuel cells and electricity generation, and a brief discussion of benefits and practical uses.

(42) RRI Reports Address Solar Market, Advanced Metering, Biomass Power

Research Reports International (RRI) has published separate reports addressing the U.S. solar market, advanced metering infrastructure (AMI), and biomass-fueled power generation in the United States. *U.S. Solar Power Market*, a 105-page overview of the domestic market for solar, includes an overview and history of solar power, an analysis of business factors driving interest in solar power, a description of solar technologies, a review of the economics of solar power, a discussion of the key markets for solar power, and profiles of domestic cell and module manufacturers.

Advanced Metering Infrastructure, an 85-page report, includes an overview and history of AMI, a description of the technologies involved, a description of government initiatives and support, an evaluation of the current market position, an analysis of business case development, and profiles of 21 AMI vendors.

The Use of Biomass for Power Generation, a 70-page publication, provides an overview of biomass-fueled generation, an analysis of the business factors driving renewed interest in biomass-fueled generation, an evaluation of the challenges hindering the implementation of projects, a description of the various feedstocks available, an evaluation of the biomass supply chain, a description of biomass-fueled generation technologies, a review of the economic drivers of project success, and profiles of major biomass-fueled generation developers.

Each report costs $299.

PEOPLE

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(43) SunEdison Names New CEO

SunEdison has announced the appointment of Tom Rainwater as CEO and a member of the company's board of directors, effective August 13, 2007. Rainwater, 49, has been a senior executive in the power generation and energy marketing industry since 1982, having held numerous leadership positions with traditional energy companies. Most recently, Rainwater led global commercial operations and corporate development efforts as executive vice president of commercial operations and development for TransAlta Corporation, which is based in Alberta, Canada.

SunEdison founder and current CEO Jigar Shah will continue on as chief strategy officer and member of the board of directors. “We're excited that someone with Tom's credentials and traditional energy and utility experience has validated what we in the solar industry have known for a while: solar's future is now,” said Shah.

“The energy and environmental challenges confronting all of us are profound and long-lasting," Rainwater said. "Fortunately, the solar industry in North America is positioned to drive down costs and achieve parity with traditional generation assets in the next few years to be an integral part of the solution. I look forward to bringing new levels of service to our current and future customers, and to ensuring solar energy becomes a significant part of the overall energy and environmental solution.”

(44) Iowa Governor Names Director of Energy-Independence Office

Iowa Governor Chet Culver has appointed Roya Stanley as the state’s new director of the office of energy independence, according to the *Des Moines Register*. Stanley's duties will include helping to develop of Iowa's renewable-energy policy and assisting in overseeing the new four-year $100 million Iowa Power Fund. Stanley has worked for the Iowa Department of Natural Resources, the Iowa state energy office and the National Renewable Energy Laboratory (NREL) for a combined total of more than two decades.

(45) DOE Names Director of Loan Guarantee Office

The U.S. Department of Energy (DOE) has named David Frantz to serve as director of its Loan Guarantee program. Frantz will report directly to DOE’s chief financial officer and, in this capacity, will manage DOE’s Loan Guarantee office, which is moving to guarantee loans for clean-energy projects, as authorized under Title XVII of the Energy Policy Act of 2005 (EPAct).

DOE is still ironing out details of the program has made marked progress, but thus far has established a credit-review board, conducted technical and financial reviews of 143 pre-applications for loan guarantees, and finalized guidelines that will be used to evaluate the financial and technical merits of each application. By providing the full faith and credit of the United States government, loan guarantees will enable DOE to share some of the financial risks of projects that employ new technologies that avoid, reduce or sequester air pollutants and greenhouse gases. DOE's FY 2008 budget requests $9 billion in loan-guarantee authority and $8.3 million to run the Loan Guarantee office. Currently, DOE has $4 billion in loan guarantee authority.

EVENTS CALENDAR

Renewable Energy in the Pacific Northwest
Organized by: Law Seminars International (LSI)
August 9-10, 2007
Seattle, WA
www.lawseminars.com/seminars/07RENUWA.php

Strategies for Rural Development: Business Incubation & Clean Energy
Organized by: Appalachian Regional Commission (ARC)
August 19-21, 2007
Johnson City, TN
www.arc.gov/incubation

Southern Energy and Environment Expo 2007
Sponsored by: N.C. GreenPower; N.C. Solar Center; et al.
August 24-26, 2007
Fletcher, NC
www.seeexpo.com

Electric Reliability & Transmission
Organized by: Law Seminars International
September 6-7, 2007
Washington, D.C.
www.lawseminars.com/seminars/07ETRANDC.php

Carbon Markets USA
Organized by: International Emissions Trading Association (IETA); World Alliance for Decentralized Energy (WADE)
September 11-12, 2007
San Francisco, California
www.greenpowerconferences.com/carbonmarkets/carbonmarkets_sanfrancisco07.html

Discover Brilliant International Conference and Expo
Organized by: Athena Institute
September 17-19, 2007
Seattle, WA
www.discoverbrilliant.com

IREC Annual Meeting
Organized by: Interstate Renewable Energy Council (IREC)
September 24, 2007
Long Beach, CA
www.irecusa.org

Solar Power 2007
Organized by: Solar Electric Power Association (SEPA); Solar Energy Industries Association (SEIA)
September 24-27, 2007
Long Beach, CA
www.solarpowerconference.com

Carbon Markets India
Organized by: GreenPower Conferences
September 25-26, 2007
Mumbai, India
www.greenpowerconferences.com/carbonmarkets/carbonmarkets_mumbai07_book.html

New Jersey Clean Energy Conference
Organized by: New Jersey Board of Public Utilities (BPU)
September 27-28, 2007
New Brunswick, NJ
www.NJCleanEnergy.com/conference

RENEXPO 2007

Organized by: REECO GmbH
September 27-30, 2007
Augsburg, Germany
www.renexpo.de/?lang=en

Virginia Energy & Sustainability Conference
Sponsored by: Virginia Department of Mines, Minerals and Energy; Dominion Virginia Power
October 16-18, 2007
Lexington, VA
www.covesva.org

Alternative Energy Innovations
Organized by: Dow Jones VentureWire
October 23-24, 2007
Redwood City, CA
http://alternativeenergy.dowjones.com/register?s=AE3

Investing in Solar
Organized by: Financial Research Associates
October 29-30, 2007
Las Vegas, NV
www.frallc.com/conference.aspx?ccode=b544

Carbon Markets Africa
Organized by: GreenPower Conferences
November 13-15, 2007
Cape Town, South Africa
www.greenpowerconferences.com/carbonmarkets/carbonmarkets_capetown07.html

Phase II of Renewable Energy in America - A Global Outlook
Organized by: American Council on Renewable Energy (ACORE)
November 28-29, 2007
Washington, DC
www.acore.org/programs/policyforum.php

11th Annual LMOP Conference and Project Expo
Organized by: U.S. Environmental Protection Agency (EPA)
January 9-10, 2008
Washington, DC
www.epa.gov/lmop

Harvesting Clean Energy
Coordinated by: Climate Solutions
January 27-29, 2008
Portland, OR
www.capps.wsu.edu/cleanenergy

POWER-GEN Renewable Energy & Fuels
Organized by: American Council on Renewable Energy (ACORE)
February 19-21, 2008
Las Vegas, NV
www.power-gengreen.com

Washington International Renewable Energy Conference
Hosted by: U.S. State Department
March 1-7, 2008

Washington, DC
www.acore.org/programs/wirec

ASES National Solar Conference
Organized by: American Solar Energy Society (ASES)
May 3-8, 2008
San Diego, CA
www.ases.org/events.htm

IEEE Photovoltaic Specialists Conference
Organized by: Institute of Electrical and Electronics Engineers (IEEE)
May 11-16, 2008
San Diego, CA
www.33pvsc.org/index.php