



Solar Washington Newsletter

FALL 2008

WWW.SOLARWASHINGTON.ORG

News Briefly Noted

A Boeing-Spectrolab concentrator solar cell has demonstrated 40.7 percent efficiency in converting incident sunlight into electrical power.

Skagit County has dropped all county fees for small solar and wind energy systems. State EPA (SEPA) requirements might still apply. The Snohomish PUD is developing a support program for renewable energy, to be released before the end of the year.

Solar trough concentrator system growth is taking off. Schott AB has broken ground on a large combination solar module and concentrator trough receiver plant on 80 acres near Albuquerque, NM. Investment and employment is planned to eventually reach \$500 million and 1500 jobs.

The U.S. Wind Industry added about 5300 MW of rated capacity in 2007 for a total of about 17000 MW, second to Germany's 20,000 MW.

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Federal Solar and Small Wind Tax Credits Approved

The U.S. House of Representatives on October 6 passed the landmark Emergency Economic Stabilization Act, H.R. 1424, which after an earlier failure was sweetened by the Senate to include investment tax credits extensions for both residential and commercial solar installations and wind turbines of less than 100 KW rated output.

The tax credits will apply to systems installed through December 31, 2016, and amount to 30 percent of the total installed cost of the system. The credits are capped at \$2000 for residential solar hot water systems, but there is no cap for residential PV solar systems nor commercial installations. For wind turbine installations the tax credit is limited to \$4000, and for homes at \$4000 or \$1,000 per kW of rated capacity, whichever is less. Excess credit may be carried forward to succeeding tax year.

The new federal incentives, taken together with the power production credits available under S.B. 5101, especially when Silicon Energy's "Made in Washington" modules become available early next year, are expected to ignite a surge of solar PV installation activity throughout the state.

Solar Summit and Solar Tour Successful, More Events Coming

With the successful 11th annual Solar Summit at Ocean Shores and the annual Solar Tour behind us, here is a look at the heavier-than-usual fall schedule for area solar-related events:

Green Industrial Business and Career Exposition. Seattle, October 10. Refer to www.nwgreenexpo for details.

Bainbridge/Kitsap Solar Tour. Saturday October 11 from 10 am to 4 pm. Watch the Solar Washington web site for developing information.

Solar Power International. October 13 – 16, San Diego. A conference and exposition on photovoltaics, concentrated photovoltaics, solar thermal electric power and water heating. Includes IREC, International Renewable Energy Conference. Refer to www.solarpowerconference.com.

Harvesting the Sun: Community Solar Seminar. October 31, Central Washington Univ., Ellensburg. Will examine community approaches toward increased accessibility, economies of scale and community benefits of solar energy. Contact: Project Manager Leslie Moynihan at NW SEED (Sustainable Energy for Economic Development), tel. 206-267-2215 or Leslie@nwseed.org.

New L & I Rules for Wind, Solar PV

New definitions and installation requirements for wind and solar PV "electrical generating systems" have been drafted by the State Department of Labor and Industries to be added to WAC 295-46B-445, Wind-driven generation equipment, and WAC 296-46B-690, Solar photovoltaic systems. Reference <http://www.lni.wa.gov/TradesLicensing/Rules/ByTrade/Electrical/RuleDev/Default.asp>, Pages 34 and 42-43, respectively. The WAC additions will become effective Dec. 31. The -445 addition has a key requirement that "Wind driven generation equipment must demonstrate conformance to applicable safety standards recognized by the department", opening the possibility that L & I might accept small wind turbines meeting the requirements of the pending AWEA small wind standard. Otherwise, it appears that the present model field evaluation and on-site inspection of each installation will continue to be required. Additional requirements for wind generation systems are called out in the new rules.

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News Briefly Noted

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Oregon regulators have approved measures allowing public agencies to set up solar PV installations at other public sites to get the benefit of tax breaks not normally available.

California claims the world's largest geothermal electrical power development. Twenty-one power plants in a 30 square mile geothermal field called The Geysers are currently generating about 750MW from steam drawn from more than 350 producing wells, said to be enough to meet 60 percent of the power required by the coastal region from the Golden Gate bridge to the Oregon state line. Principal operators are Calpine Corporation, Northern California Power Agency and the Western GeoPower Corporation. Typical well life is 20 to 30 years, but advanced replenishment techniques have succeeded in extending it.

We're Solar Washington

A state chapter of the American Solar Energy Society and a private, not-for-profit association of people and organizations interested in solar power, energy efficiency, and energy generated using renewable resources.

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(Cont.) The -690 WAC additions include Section 002, Definitions for the PV system and its support structure, foundation and tracker. The tracking system is included in the system definition for the first time. Sections 004 Installation, 007 Maximum voltage, and 053 Direct-current photovoltaic power source, will be added to the WAC. Questions on these proposed changes may be directed to the office of Chief Electrical Inspector Ron Fuller, by telephone 360-9002-5249 or by e-mail to fulr235@lni.wa.gov

Mike Nelson Reports on Solar PV in Germany

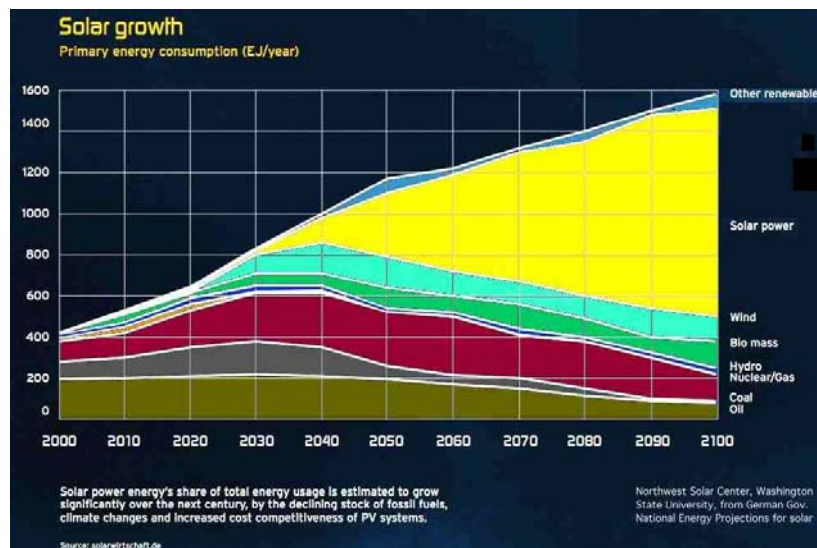
(Editor's Note: Because of its potential influence upon public policy and PV business decisions, Nelson's presentation is reported in as much detail as space permits.)

Mike Nelson, Director of the Northwest Solar Center and Solar Washington Board member, described factors behind the phenomenal growth of the German solar PV industry to about 100 attendees of the Solar Washington September 15 meeting at the REI Store in Seattle.

Nelson was among decision makers from 23 electric utilities competitively selected by SEPA (Solar Electric Power Association) for a week-long solar fact-finding mission to find what U.S. utilities can learn from the German success in integrating large power outputs from renewable resources into the national power grid without transmission, power quality or scheduling problems. Principal destination was Intersolar, the world's largest solar exposition, in Munich in June, but the group also visited solar manufacturing facilities, utility PV power plants and commercial and residential building PV installations, both in Germany and the Netherlands.

Major factor in the rapid growth of solar PV in Germany is the government's policy of the Feed-in-Tariff (FIT) paid to assure recovery of the cost of the PV installation. Average value of the tariff in 2005 was .095 euro per kWh; it is now decreasing at about 5 percent annually, soon to be about 9 percent, reflecting the decreasing cost of PV installations. It will sunset in about 2018, when the cost of PV power will become equal to that from other major sources. Cost of PV power in Germany is now about .19 euro or \$0.30 per kWh. For large solar farms with one-axis tracking, installation cost is about \$9.40/watt, or about \$7.5 million per MW. Such farms occupy about 10 acres per MW, are typically grazed by sheep between the rows of ground-mounted module stacks, and generate about 10 percent of the solar power generated in eastern Germany. Most of the solar power is generated on rooftops, where the typical installation is 20 modules, for about 3 kW rated output. Eighty per cent of German solar power is generated in southern Germany, and up to 20 percent of the total power generated is solar.

German thinking is that solar power will increasingly dominate renewable sources, and will account for about 75 percent of total renewable output by the end of the century. Wind will remain fairly constant at 9 or 10 percent of the renewable total. Biomass and wind will increase to a fairly constant level; most wind power is generated in northern Germany, and there is no feed-in tariff for small wind systems. Coal will eventually disappear. See the accompanying chart.



Nelson pointed out that the U.S. needs long-term, low-cost financing to support the up-front cost of solar PV as a public benefit, and that PUDs, rural electric cooperatives and municipal utilities are best positioned to obtain such financing, especially in California.