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New Method for Reporting Solar Data

A straightforward new way to calculate, compile, and graphically present solar radiation measurements in a format that is accessible to decision makers and the general public has been developed by researchers at the University of Texas at Austin.

The method presents solar data in a framework that “can be used by policymakers, businesses, and the public to understand the magnitude of solar resources in a given region, which might aid consumers in selecting solar technologies, or policymakers in designing solar policies,” says David Wogan, a graduate student in mechanical engineering and public affairs at the University of Texas at Austin and the first author of a paper about the work in the American Institute of Physics’ Journal of Renewable and Sustainable Energy.

Wogan’s coauthors on the paper are Michael E. Webber, an Assistant Professor of Mechanical Engineering and the Associate Director of the Center for International Energy and Environmental Policy, and Alexandre K. da Silva, an Assistant Professor of Mechanical Engineering.

The method uses calculated estimates of solar insolation -- the amount of solar radiation incident on the earth’s surface -- and the total energy in each of Texas’s 254

counties, and presents the data in a geographic information system format. Included in the model are daily, monthly, and yearly averages. This allows the method to be used, for example, to estimate the potential amount of solar-generated electricity that could be produced at a given location, in a given month.

In the paper, the researchers use Texas to illustrate the new method, “because its geography is very diverse,” Wogan says, “but the framework is not limited to Texas and can be expanded to other states and countries to understand how renewable energy resources are distributed, both geographically and through time.”

Source: David M. Wogan, Michael Webber, Alexandre K. da Silva. A framework and methodology for reporting geographically and temporally resolved solar data: A case study of Texas. Journal of Renewable and Sustainable Energy, 2010; 2 (5): 053107 DOI: 10.1063/1.3496493