

German Feed Laws Power Nation to New Renewable Record in 2006
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By Paul Gipe

German Feed Law Powers Nation to New Renewable Energy Record in 2006
Architect of German Feed Law Begins US Tour

German farmers, homeowners, and industrialists set a world record for the development of renewable energy in 2006.

Using the country's pioneering electricity feed law, Germans invested more than US\$10 billion in new sources of renewable energy last year, including wind turbines, solar panels, and biogas power plants.

Germany's feed law permits homeowners and farmers to connect their solar power systems to the grid and pays them a fair price for their electricity. This simple system has led Germany to world leadership in wind, solar, and biogas electricity generation. Germany operates more wind generation, more solar systems, and more biogas plants than any other country on earth.

Renewable sources of energy installed through Germany's feed law produce about 50 terawatt-hours (TWh or billion kilowatt-hours) of electricity per year, or nearly 10% of German electricity consumption.¹

Hermann Scheer, the architect of the German feed law, begins a North American book tour February 15th in San Francisco. Scheer, a member of the German parliament and an outspoken advocate of solar energy, is the author of *Energy Autonomy: The Economic, Social, and Technological Case for Renewable Energy*. He argues that the threats from climate change and the global race for the planet's remaining fossil fuels are so great that there is "no time to waste" in turning toward renewable sources of energy as Germany has done.

Scheer will visit San Francisco, Los Angeles, Denver, Chicago, Boston, Toronto, and Washington, DC on his lecture tour. For details on the venues in each city, visit www.hermannscheer.de.

German Wind

Again in 2006, Germany remained one of the world's largest markets for wind turbines, installing nearly 2,200 MW from Bavaria to the Danish border. Germany not only was the world's second largest market for wind energy, behind only the USA, but also continued to lead the world with a total installed wind-generating capacity of 20,600 MW, according to data from the World Wind Energy

¹ Renewable sources of energy provided a total of 71.5 TWh in 2006 or nearly 11.5% of German electricity consumption. The total includes conventional hydro-electric generation installed prior to introduction of feed laws.

Association. With only one-fourth of the USA's population and only one-twentieth the land area of the USA, Germany operates 1.8 times more wind generating capacity than that of the entire lower 48 states. Germany currently provides about 6% of its electricity from wind energy alone. German heavy industry employs 70,000 in the wind energy sector, and last year Germans invested more than US\$4.5 billion in new wind turbines.

German Solar Photovoltaics

Strong demand for solar cells from German farmers and homeowners resulted in another record year for the installation of solar photovoltaic systems in the country, according to data compiled by the Bundesverband Solarwirtschaft (the German Solar Energy Association). Germany installed an astounding 100,000 solar systems in 2006, representing 750 MW of solar-electric generation. This follows on the back-to-back record-setting years of 2005 (750 MW), and 2004 (600 MW). Germans invested nearly US\$5 billion in new solar photovoltaic systems and in doing so employed nearly 35,000 in the burgeoning solar industry. Germany now operates more solar-electric generating capacity (2,500 MW) than the installed wind-generating capacity of Britain, Italy, France, or the Netherlands. Analysts estimate that solar cells in Germany now generate about 2 TWh of electricity per year, or nearly one-half of one percent of German electricity consumption. If 2006 followed the pattern of previous years, nearly one-half of all German solar PV systems were installed by farmers.

German Solar Hot Water

The German solar boom is not solely limited to solar photovoltaics, the perennial favorite of environmentalists, but also to the more pedestrian solar domestic hot water systems. In 2006, Germans installed 140,000 solar hot water systems or 1,050 MW of solar thermal capacity. Altogether, there are the equivalent of 6,300 MW of solar hot water heating in Germany today. Often overlooked in preference for the sexier solar photovoltaics, solar thermal systems generate the equivalent of 4.3 TWh per year. The German solar hot water market employs 18,000 and earns gross revenues of US\$1.5 billion per year.

German Biogas

Germany employs 8,000 in the on-farm biogas industry. Manure-fired power plants generate nearly 5 TWh per year of electricity, or about one percent of consumption, says the Bundesverband Erneuerbare Energie (the German Renewable Energy Association). Biogas is mostly methane, a powerful greenhouse gas that would otherwise be emitted to the atmosphere from dairies and pig farms.