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German Energy Freedom

Moving beyond energy independence to energy democracy

By Craig Morris

ABOUT THE AUTHOR

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ABOUT THE SERIES

This paper is part six of a six-part series on the German Energy Transition (Energiewende). The authors are experts on different issues such as renewable energies, rural communities, social movements, and nuclear power.

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GERMAN ENERGY FREEDOM

Moving beyond energy independence to energy democracy

While the US energy sector is good for big business, Germany's is good for German citizens. Germans not only want clean power; they also want to make it themselves. NIMBYism is reduced when local people own and control their environment, as a visit to a few community projects shows.

Germans have freedoms Americans don't even know they lack.

Americans love customer choice, but have you ever wanted to pick your utility firm? Or make your own energy profitably on a level playing field with the big guys?

Germans have freedoms Americans don't even know they lack. The renewables sector is an excellent example. Nonetheless, we Americans continue to associate Germany with statism, not free markets – though there is good reason to believe Germans are freer than Americans.

Take this misunderstanding: on the June 6, 2010 edition of the Diane Rehm Show on NPR, a caller asked whether "solar rooftop electricity generated by utility customers" could be used as a "catalyst for [economic] recovery" in the US, as it is in Germany. Tyson Slocum, energy policy expert at Public Citizen and a campaigner for renewables, gave the following misleading answer:

> *Politically it's very difficult to do what Germany did unless you own all of the utilities at the federal level and you have the kind of collectivism you find in Germany. It's not a base case; it's an exception.*

"Collectivism" is defined as an emphasis on the group to the detriment of the individual. What could be less American? The assumption that Germany must be fundamentally different than the US – and that what works in Germany will never work here – seems widespread among Americans. For instance, in 2008 the US Solar Energy Power Association (SEPA) organized a fact-finding mission to Germany for 32 representatives of US utilities. Upon arrival, they believed that Germany has a single state-owned grid, but they learned that Germany has four grid operators, three of which are private firms (the fourth, ironically, is wholly owned by the Dutch government), along with some 800 local utilities (investor-owned and municipal).

Americans like to believe that the United States is a free market, but in the US politicians on Public Utility Commissions (PUCs) usually set the

In the 1990s, some parts of the US made an attempt at deregulation, but it failed miserably. In contrast, Germany liberalized its power market in 1998, and the process went so well that the country managed to do without a regulatory body until 2005, when the German Network Agency's mandate was expanded from telecommunications and postal services. One of the first things the Agency did was settle a dispute about charges passed on to consumers to cover renewable power. The Agency only handles rules for the grid; it does not set consumer prices.

retail rate, generally in close consultation with the local power provider. Because US power providers almost always have a monopoly in the region they serve, the government regulates these monopolies to prevent them from gouging customers.

Germany has no PUCs, but its Network Agency does sets grid rules for competing market players. The government does not set retail power rates; the market sets them. If your power firm gouges you, call up the one you want to switch to, and they will gladly handle the paperwork with your current provider so you can switch at the end of the month.

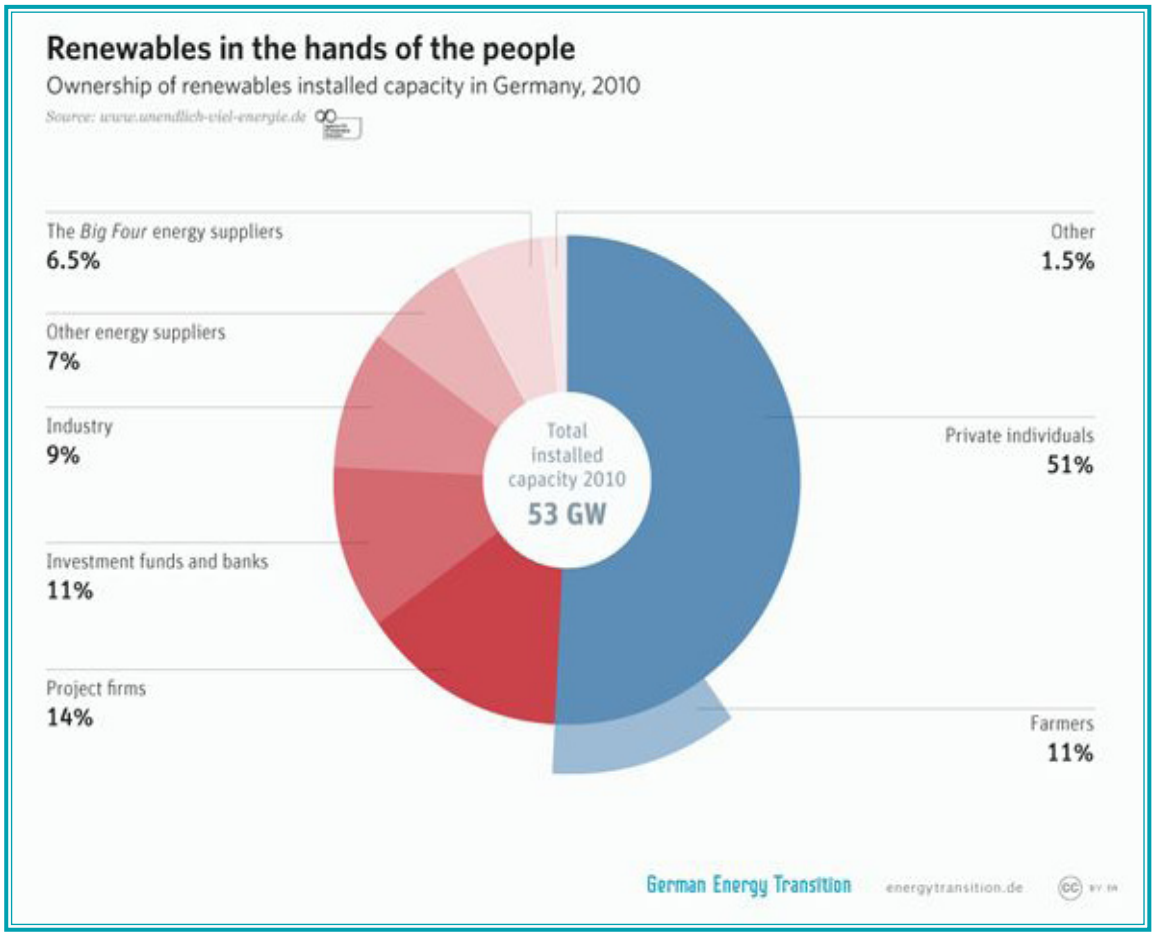
A community-owned PV array on a noise barrier in Freiburg, Germany. Source: fesa GmbH 2006

Germans are "prosumers"

Germans are not only free as power consumers, but also free to become "prosumers" – simultaneously producers and consumers. They can even sell the power they make at a profit. Germany's Renewable Energy Act stipulates that the little guy's green power has priority over conventional power from corporations.

Step aside, big business, communities are coming through.

In other words, Germany tells big business, "Step aside, communities are coming through." How vastly different the situation in the US, where we are switching to renewables by asking our big utilities to get a certain amount of their power from renewables. So while the foreign press may believe, as the Financial Post put it, that the German "companies meant to invest in renewables [are] the big sector leaders such as E.ON and RWE," the opposite is the case – German communities are making the big guys increasingly irrelevant.



Germany's Big Four power firms own less than seven percent of the country's renewable generating capacity, 51 percent of which was owned by citizens as of 2011.
Source: www.unendlich-viel-energie.de and www.EnergyTranstion.de

In the US, community ownership – what the Germans call *Bürgerbeteiligungen*, or literally "citizen holdings" – is rare. True, you can put solar on your roof in the US; not everywhere, but 43 of 50 states have "net metering". But even then, it may depend on whether your utility is a municipal or investor-owned, and if you can't do it with your local utility… well, too bad. You probably can't switch utilities. Furthermore, there are limits on the number of people who can net-meter almost everywhere, so you'll have to beat your neighbor to it. In Germany, there are basically no limits for citizens to produce solar energy. The overall limit for solar is 52 gigawatts and is still years away, nearly equivalent to peak demand in the summer– one reason why solar power is now able to peak at 50 percent of summer demand. For the US to reach that level, it would have to grow from four gigawatts of solar at the end of 2011 to around 700.

In Germany there are no limits for citizens to produce solar energy.

Several years ago, the American Wind Energy Association (AWEA) had a section on its website called Projects, which listed wind farms by location, size, and owner. At the time, Germany had the most wind power capacity of any country in the world. Nonetheless, DEWI, the organization that collates statistics on German wind power, said they had never produced such a table: "We cannot say who owns a particular wind farm in Germany because ownership is splintered across scores, and sometimes hundreds, of local citizens and businesses."

AWEA took the Projects tab off of its website years ago, but it still tallies the figures and produces the tables for members (see this PDF for Q1 2011). Perhaps such tables are bad publicity for the US wind sector because they illustrate how corporatist and undemocratic the US market is, even when it comes to renewables.

The situation is similar for biomass, which remains in the hands of big business in the US, whereas it is driven by midsize firms and farmers in Germany. To see what the difference is, let's take a look at a few example projects.

Community wind

When the Druiberg Energy Park got started, there was concern among locals about the potential impact, "but after we got started, the turbines did not bother anyone, so people began to focus on the wind farm as a safe investment. Those who had not yet invested were jealous of those who had," Radach remembers. "So it was hard to get going, but easy to continue to grow."

The Druiberg wind farm in Dardesheim has grown organically over the past two decades, and turbines continue to be gradually added. Visiting the wind farm is like going to a wind turbine museum. At the bottom of the tower on the right, local children were allowed to paint life-size figures. Photo: Craig Morris

In the beginning, town hall meetings were held – for years. "We live next to each other, so we did not want to move ahead until we had community support," Radach said. To ensure local acceptance, leases were not only signed with landowners on whose property turbines were built, but also with owners of adjacent properties. Whenever new turbines are built, people from the village (population: 976) are allowed to purchase shares in the wind farm, as are inhabitants of neighboring villages. "I wouldn't let you invest here," Radach told me with a smile, "you're from out of town."

These examples from Germany are common, not exceptional. Dardesheim was not even the first in 1994. That honor may go to the small town of Friedrich-Wilhelm-Lübke-Koog near the Danish border. In Freiburg, Germany, a town of some 230,000 people in the southwestern corner of the country, citizens funded roughly a third of the investment costs for four turbines put up on a nearby hill, with the other two thirds coming from bank loans. The project manager says he could have gotten more of the money from the bank, and it would have been better financially; after all, interest rates from the bank are around 4.5 percent, whereas the project pays a dividend of up to six percent to citizen investors. Furthermore, a lot more paperwork is involved when you have hundreds of small investors instead of a few big loans from banks. But the Freiburg project, like so many others in Germany, was willing to forgo some profit in return for greater community

acceptance – so that locals can negotiate with locals, not with an out-of-town corporation that makes everyone feel like it could get its way anyway.

The latest projects attempt not only to make communities net exporters – selling excess power to the grid and purchasing power from it when not enough renewable energy is available – but entirely self-sufficient. For instance, the island of Pellworm (PDF) has combined solar, wind, biomass, and geothermal in a hybrid power plant connected to a smart grid with energy storage to reduce the dependency of its 1,200 inhabitants on energy imports by 90 percent.

Biovillage Jühnde

In 2004, a local farmer formed a cooperative with nine other farmers who wanted to grow energy crops. More than 70 percent of village residents agreed to switch their heating systems over to a district heating network connected to a new village biogas unit. The biomass unit runs largely on local corn plantations. "The entire plant is used, not just the fruit. In fact, crops are harvested before the fruit is ripe," project spokesperson Eckhard Fangmeier explains. For several years now, the villagers have been paying local farmers and businesses for their heat instead of paying for foreign oil and natural gas.

Germans increasingly pay local farmers and businesses, not foreign oil firms, for their heat.

When Jühnde switched over to its renewable heat supply, it drew a lot of attention across the country and served as an example for scores other communities – and counting (see this PBS video on the village of Feldheim). Indeed, there was a bit of a boom in corn plantations as energy crops, which drew some criticism. People feared monocultures and were concerned about the impact on biodiversity and landscapes. Nonetheless, any American who has seen the Corn Belt in the Midwest would find Germany's largest corn plantations quite small in comparison.

German energy coops are increasingly joining forces to keep the trend going. New projects will continue to depend on local support. If the citizens affected don't want to be surrounded by even more cornfields, the project will not go forward. We are not talking about out-of-town corporations forcing their will on communities. German wind energy association BWE has put out a brochure promoting community investments and remains critical of wind power production concentrated in the hands of a few.

Fangmeier says he has been to the US to explain the concept, which met with interest – though it struck his listeners as exotic. When Brita Sailer visited Freiburg, Germany, as a member of the Minnesota House of Rep-

resentatives to find out more about the use of bioenergy by communities, she marveled at the recovery of sawdust and wood chips at sawmills for the production of wood pellets. "We bury this stuff in the ground," she shook her head. The US makes wood pellets out of fresh timber – for export to Europe.

Overall, it is estimated that "energy cooperatives" – community-owned renewables projects – have leveraged 800 million euros in investments from more than 80,000 private citizens. It is often said that only the wealthy can make such investments; for instance, critics charge that you need to own your own home to have a solar roof. But more than 90 percent of Germany's energy cooperatives have already set up solar arrays, and a single share in such cooperatives costs less than 500 euros in two thirds of the cooperatives – with the minimum amount being even less than 100 euros in some cases. As the head of Germany's Solar Industry Association puts it, "Energy cooperatives democratize energy supply in Germany and allow everyone to benefit from the energy transition even if they do not own their own home."

Enercon – the German dream

The dream of every American startup is to go public – or at least be taken over by a large corporation. Not so in Germany, whose largest wind turbine manufacturer – Enercon – is still owned by its founder, Aloys Wobben, who is getting on in years. Ownership of the firm is thus now being handed over to a foundation; market watchers say the move is probably intended to ensure that the company does not get gobbled up by a corporation beholden mainly to shareholders with an eye on short-term profits. Enercon focuses on quality, not short-term profits. The firm has been the clear leader in service quality in Germany over the past decade, but it does not chase after every market and does not put growth first. Indeed, to the astonishment of its competitors, it ignores the offshore sector, the Chinese market, and the US market, whose stop-and-go policies it finds too fickle. Nonetheless, it was the third largest turbine manufacturer in the world in 2011, and Forbes says Wobben now has the largest "green" fortune in the world.

The real difference between the US and Germany

Americans and Germans are alike in what they want, but not in what they get. When Americans see big renewables projects coming at them, their natural reaction is to try to stop these out-of-town corporations from ruining their surroundings. Germans react the same way. That's why renewables projects in Germany are smaller and owned by citizens.

Americans and Germans are alike in what they want but not in what they get.

US companies like Solarcity have an unknown business model in Germany. The firm says it gives customers "a cleaner, more affordable alternative to their monthly utility bill" and reduces or eliminates the "high upfront cost" of solar roofs for homeowners. In other words, they put solar on your roof, and you then pay them for the solar power generated. Despite the positive

press in the US, the firm's business model helps make solar artificially expensive.

Germans prefer to own the solar panels themselves, and upfront cost is not an issue in Germany. German banks are so familiar with PV now that getting a loan is easy. Not so in the US, where Arkansas-based solar salesman Bill Ball says, "banks will give you a 20,000 dollar loan for a fishing boat, but if you want that same amount for a solar roof, they want to see a business plan."

Germans don't only want to consume clean power; they want to make it themselves.

Like Americans, Germans want to protect small and midsize businesses from the power of large corporations. But while Americans focus on consumer choice, Germans see themselves more as citizens than consumers. Germans don't only want clean power from their utility; they want the power to decide what their community looks like – and the power make green power themselves profitably.

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