



Figure 20-1. People power—revolution from below. German symbolic take on a famous photo of raising a wind turbine in the 1970s, itself a take on the photo of US Marines raising the American flag on Iwo Jima. Of course, it's how all towers and utility poles were raised in the days before mobile cranes. During the 1930s, rural-electric cooperatives raised tens of thousands of poles this way across the breadth of North America. The message is that everyone metaphorically can raise his or her own wind turbine—and should. (Agentur für Erneuerbare Energien)

And many of these turbines are either owned by the farmers on whose land the turbines stand, or by groups of local residents. They are, in effect, owned by the community, by its citizens.

It's the modularity of wind energy that makes possible the generation of electricity where the electricity is most valuable, minimizing the need for long high-voltage transmission lines. Each wind turbine, though physically large, is small relative to fossil-fuel-fired and nuclear-fueled power plants. This modularity enables placing wind turbines nearer the load than possible with large, centralized power plants, providing the resiliency necessary for stable electricity networks that was identified decades ago by Amory and Hunter Lovins in their book *Brittle Power*.

	Farmer	Co-Op	Corporate
The Netherlands	60%	5%	35%
Germany	10%	40%	50%
Denmark*	64%	24%	12%
Spain	0%	0%	100%
Great Britain	1%	1%	98%

Source: Dave Toke, University of Birmingham, 2005, updated to Toke 2008.  
\*Onshore.

Wind energy's modularity also permits local participation in the ownership and operation of the wind turbines. With ownership comes a sense of control and a stake in the future. To farmers and villagers buffeted by globalization and the industrialization of agriculture, community or local ownership of wind energy can offer a ray of hope for rural communities around the globe.

## Community Wind

Community wind, as Wisconsin activist Mike Mangan calls it, is wind development on a human scale. Mangan promotes small clusters of wind turbines, like those found in Europe. To Mangan, community wind signifies local turbines, locally owned.

They may be owned individually, cooperatively, or mutually through numerous mechanisms. The key, says Mangan, is for the community to identify the turbines as its own. Doing so may avoid the all-too-common conflicts encountered when developers, viewed as outsiders, propose projects that primarily benefit absentee owners—sometimes located on the other side of the continent or on another continent entirely.

Wind energy's general acceptance in Denmark and Germany has often been attributed to the dispersal of the wind turbines across the landscape and the distribution of ownership across hundreds of thousands of individual participants. Through the late 2000s, some 90% of all the wind-generating capacity installed on land in Denmark has been developed by windmill

	%	MW	TWh
Individuals	51.5%	14,015	20.6
Farmers	1.8%	490	0.7
Developers	21.3%	5,797	8.5
Utilities	7.4%	2,014	3.0
Investment Funds	15.5%	4,218	6.2
Industrial	2.3%	626	0.9
Others	0.3%	82	0.1
Total		27,241	40.0

Source: Marktakteure Erneuerbare: Energien Anlagen In der Stromerzeugung, Trend Research, August 2011.  
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