Financial Innovation Among the Community Wind Sector in the United States

Mark Bolinger, Lawrence Berkeley National Laboratory

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In the relatively brief history of utility-scale wind generation, the "community wind" sector – defined here as consisting of relatively small utility-scale wind power projects that are at least partly owned by one or more members of the local community – has played a vitally important role as a "test bed" or "proving ground" for wind turbine manufacturers. In the 1980s and 1990s, for example, Vestas and other now-established European wind turbine manufacturers relied heavily on community wind projects in Scandinavia and Germany to install – and essentially field-test – new turbine designs. The fact that orders from community wind projects seldom exceeded more than a few turbines at a time enabled the manufacturers to correct any design flaws or manufacturing defects fairly rapidly, and without the risk of extensive (and expensive) serial defects that can accompany larger orders.

Community wind has been slower to take root in the United States – the first such projects were installed in the state of Minnesota around the year 2000. Just as in Europe, however, the community wind sector in the U.S. has similarly served as a proving ground – but in this case for up-and-coming wind turbine manufacturers that are trying to break into the broader U.S. wind power market. For example, community wind projects have deployed the first U.S. installations of wind turbines from Suzlon (in 2003), DeWind (2008), Americas Wind Energy (2008) and later Emergya Wind Technologies (2010),[1] Goldwind (2009), AAER/Pioneer (2009), Nordic Windpower (2010), Unison (2010), and Alstom (2011).

Just as it has provided a proving ground for new turbines, so too has the community wind sector in the United States served as a laboratory for experimentation with innovative new financing structures. For example, a variation of one of the most common financing arrangements in the U.S. wind market today – the "partnership flip structure"[2] – was first developed by community wind projects in Minnesota more than a decade ago (and is therefore sometimes referred to as the "Minnesota flip" model) before being adapted by the broader wind market. More recently, a handful of

[1] Both AWE and EWT offer the direct-drive technology first commercialized by Lagerwey in the Netherlands.

[2] In its most basic form, a partnership flip structure involves the local project sponsor partnering with a tax equity investor to co-own the project. The tax equity investor provides most of the equity for the project, and in return is initially allocated most of the cash and tax benefits generated by the project. Once the tax benefits are exhausted and the tax equity investor has reached its agreed-upon return target, the allocation of cash and tax benefits "flip" heavily in favor of the local project sponsor. In most cases, after the flip has occurred, the sponsor has an opportunity to buy out the tax equity investor's now-greatly-diminished interest in the project. Partnering with a tax equity investor in this manner has typically been necessary because the local project sponsor often does not have sufficient income tax liability to efficiently absorb the tax benefits provided by the federal government (e.g., accelerated depreciation deductions and production or investment tax credits). A tax equity investor can "monetize" these tax benefits on behalf of the project, while also injecting much-needed capital.

community wind projects built in the United States over the past year have been financed via new and creative structures that push the envelope of wind project finance in the U.S. – in many cases, moving beyond the now-standard partnership flip structures. These projects include:

- a 4.5 MW project in Maine that combines low-cost government debt with local tax equity,
- a 25.3 MW project in Minnesota using a sale/leaseback structure,
- a 10.5 MW project in South Dakota financed by an intrastate offering of both debt and equity,
- a 6 MW project in Washington state that taps into "New Markets Tax Credits" using an "inverted" or "pass-through" lease structure, and
- a 9 MW project in Oregon that combines a variety of state and federal incentives and loans with unconventional equity from high-net-worth individuals.

In most cases, these are first-of-their-kind financing structures that could serve as useful examples for other projects – both community and commercial wind alike.

This new wave of financial innovation occurring in the community wind sector has been facilitated by policy changes, most of them recent. Most notably, the *American Recovery and Reinvestment Act of 2009* ("the Recovery Act") enables, for a limited time, wind power (and other types of) projects to elect either a 30% investment tax credit ("ITC") or a 30% cash grant (the "Section 1603 grant") in lieu of the federal incentive that has historically been available to wind projects in the U.S. – a 10-year production tax credit ("PTC").[3] This flexibility, in turn, enables wind power projects to pursue lease financing for the first time – leasing is not possible under the PTC. Because they are based on a project's cost rather than energy generation, the 30% ITC and Section 1603 grant also reduce performance risk relative to the PTC – this, too, is an important enabler of lease financing. Finally, by providing a cash rather than tax incentive, the Section 1603 grant alone reduces (but does not eliminate) the need for tax appetite among project owners.[4] All of these policy changes can be particularly useful to community wind projects, and have helped to support the different financial structures mentioned above.

This special report – which is distilled from a longer Berkeley Lab report[5] – briefly describes just two of these innovative new financing structures: the sale/leaseback structure used in Minnesota and the intrastate offering conducted in South Dakota. Readers interested in more detail on these two structures, as well as the other three projects not covered here, are encouraged to reference the full Berkeley Lab report.

Ridgewind Power Partners, LLC

The 25.3 MW Ridgewind project, which achieved commercial operations in December 2010, is located along the Buffalo Ridge in southwestern Minnesota. Developed by Project Resources Corporation ("PRC") through the special-purpose

[3] The PTC is a 10-year, inflation-adjusted $/MWh income tax credit that stood at $22/MWh in 2010.
[4] Tax appetite is still required to make efficient use of accelerated depreciation deductions.
[5] M. Bolinger. 2011. *Community Wind: Once Again Pushing the Envelope of Project Finance.* LBNL-4193E. Berkeley, California: Lawrence Berkeley National Laboratory. http://eetd.lbl.gov/EA/EMP/reports/lbnl-4193e.pdf

entity Ridgewind Power Partners, LLC, the project consists of eleven Siemens 2.3 MW turbines, and sells both energy and renewable electricity credits to the local utility under a 20-year contract.

Union Bank (based in California) provided $51 million in construction financing to the project, which was repaid soon after the commencement of commercial operations by the sale of the project's hard assets (i.e., turbines and other equipment) to a Union Bank leasing affiliate. Ridgewind Power Partners, LLC then leased that equipment back for a 20-year term, during which it will manage and operate the project. The Union Bank affiliate (the lessor) will benefit from the Section 1603 cash grant (equal to roughly 30% of the project's cost), accelerated depreciation deductions, and regular lease payments. Ridgewind Power Partners, LLC (the lessee) will benefit from any power sales revenue in excess of its operating costs, which include the lease payments it must make. At the end of the 20-year lease term (and perhaps even earlier), Ridgewind Power Partners, LLC will have an opportunity to buy back the project's hard assets from the Union Bank affiliate.

This is the first sale/leaseback financing of a wind project.[6] Prior to the Recovery Act, lease financing was essentially unavailable to wind projects taking the PTC by a requirement in the tax code that the project owner also operate the project. This requirement is contrary to the basic definition of a lease, which involves two separate entities – the lessor who owns the project and the lessee who operates it. No such requirement exists, however, for the 30% ITC or the Section 1603 cash grant, both of which became available to wind projects in the wake of the Recovery Act.

From a community wind perspective, lease financing offers three attractions. The first is simplicity: dealing with just a single entity for both construction and permanent financing simplified the Ridgewind financing process and eliminated the possibility of thorny inter-creditor issues that can often arise between tax equity investors and lenders. Second, the lessor takes 100% of the tax benefits (in this case, consisting solely of accelerated depreciation deductions), which means that local investors need not have *any* tax appetite at all (in a partnership flip structure, the sponsor must take at least 1% of the tax benefits, whether or not it can use them). Finally, lease financing could potentially broaden the base of tax equity investors interested in wind projects. Although most large institutional tax equity investors won't bother with smaller community wind projects, many smaller banks have affiliated leasing companies that might be more amenable to such projects.

With financing closed and the project up and running, PRC is currently implementing its *Minnesota Windshare* program, which opens up a portion of Ridgewind Power Partners, LLC to local investment. Waiting until the project is operational simplifies the original financial close (Union Bank dealt with just a single counterparty), simplifies the offering to local investors (the prospectus can be considerably shorter given no construction risk), and should reduce the risk to local investors (while still offering competitive returns). This approach stands in contrast to other community

[6] In the wake of Ridgewind's announcement regarding its sale/leaseback structure, several commercial wind projects (all in California) have also announced leasing structures. Terra-Gen Power's 150 MW Alta I project is also using a sale/leaseback structure, while its 402 MW Alta II-IV projects will be financed through a leveraged lease. Similarly, the 101.2 MW Hatchet Ridge project is using a leveraged lease structure.

wind models that raise high-risk, early-stage development capital from local investors.

South Dakota Wind Partners, LLC

One state to the west, South Dakota Wind Partners, LLC ("SDWP") is a 10.5 MW project that is located adjacent to a larger 151.5 MW project owned by Basin Electric Power Cooperative ("Basin"). Specifically, SDWP is "piggybacking" on the development, construction, and operation of the larger project, which was permitted for 110 turbines, but will only use 101, enabling SDWP to take over the permits for seven of the remaining nine open locations. Although SDWP is owned and financed separately from the larger project, Basin is constructing and will operate both projects, will buy the electricity generated by SDWP's turbines, and may eventually buy the SDWP project outright. The project is under construction and is expected to achieve commercial operations in the first half of 2011.

The SDWP project is expected to cost roughly $23.5 million to build, with almost a third of that amount covered by the Section 1603 cash grant. The remainder of project costs have been financed through an "intrastate offering" of securities, which requires that the business offering the securities is incorporated in the same state where the securities are being offered, will carry out a significant portion of its business there, and will only offer or sell securities to residents of that state. By adhering to these rules, the offering falls outside of Federal jurisdiction and thereby avoids the time and expense of complying with Federal securities regulations.

Table 1 provides details of the intrastate offering, which consisted of three different investment options, each requiring a minimum (and incremental) investment of $15,000 but featuring varying proportions of equity and debt. Class A consists mostly of debt (95%), and is therefore well-suited to those investors who do not have other sources of passive income against which to offset passive depreciation losses. Class B is also mostly debt (90%), whereas Class C is mostly equity (95%), and is therefore well-suited to those investors who are able to efficiently use passive depreciation losses. Reflecting the relative difficulty of finding investors with passive tax appetite, Class A sold out in just two weeks, followed by Class B in roughly 4 weeks, and finally Class C in eight weeks.

Table 1. South Dakota Wind Partners Intrastate Offering Details

Investment Option	Minimum Investment	Equity Portion (and # of shares)	6.5-Year Note Portion (and interest rate)	Total Amount Raised (and time to raise)
Class A	$15,000	$750 (1 share)	$14,250 (7.00%)	$7 million (~2 weeks)
Class B	$15,000	$1,500 (2 shares)	$13,500 (6.75%)	$4.5 million (~4 weeks)
Class C	$15,000	$14,250 (19 shares)	$750 (5.50%)	$5.3 million (~8 weeks)
	Total:	**$5.8 million**	**$11 million**	**$16.8 million in ~8 weeks**

In total, the offering raised roughly $16.8 million from more than 600 investors who are mostly individuals (as opposed to businesses). The average investment size is around $27,000. The resulting overall mix of equity and debt is $5.8 million and $11 million, respectively. The remainder of expected project costs – roughly $6.7 million – will ultimately come from the Section 1603 cash grant, leaving overall project leverage at roughly 50% (considering the grant as equity).

By replacing the PTC with cash, the Section 1603 grant facilitated individual investment in SDWP by reducing the need for tax appetite. Investors who could not have efficiently absorbed *both* the PTC *and* depreciation losses may nevertheless be able to absorb just the depreciation losses. And for those investors who simply can't use even depreciation, SDWP's unique offering of various combinations of debt and equity (including one option with just 5% equity) ensures that most investors can find a suitable investment to fit their individual tax appetites. The cash grant also reduced the minimum required holding period from 10 years (for the PTC) to 6.5 years (the accelerated depreciation period) for the SDWP project – a term that may be more palatable to many community wind investors.

The basic model employed by SDWP – i.e., opening a small portion of a larger project for community investment – is one that could be replicated more broadly, potentially even to the advantage of larger "commercial" wind developers. For example, a commercial developer of a larger wind project could potentially help to shore up local support for that project (and not just from among those landowners who will be hosting turbines and therefore receiving lease payments) by allowing *all* local residents to invest in some portion of the project.

Finally, by piggybacking on the development and construction of Basin's larger adjacent project, SDWP was able to reduce project costs (by taking advantage of the economies of scale realized by the larger project), transaction costs, project risk (construction, operations, and offtake risk), and the development timeline.

Conclusions

For community wind projects seeking financing in the United States, necessity has been the mother of innovation. Much as the partnership flip structure was first devised more than a decade ago in response to the specific nature of federal policy support for wind power projects – specifically, the inability of most individuals to make efficient use of the PTC and accelerated depreciation – so too has the most recent innovation in the financing of community wind projects been driven by policy changes that enable new and potentially more appropriate financing structures to be tested.

Specifically, the Recovery Act, and in particular the Section 1603 grant, has been critically important to these projects. By reducing the need for tax equity, the Section 1603 grant enabled South Dakota Wind Partners to find sufficient equity capital among individual investors (presumably some of whom would not have been able to absorb passive depreciation losses *in addition to* a PTC or an ITC). Meanwhile, the ability to pursue lease financing under the ITC or grant (as well as the reduction in performance risk) was obviously critical to the success of the Ridgewind project.

Although the deadline to qualify for the grant has been extended through 2011, wind projects must still be operating by the end of 2012 to receive the grant or ITC in lieu of the PTC (which is also currently slated to expire at the end of 2012). Efforts to extend one or more of these incentives will no doubt be underway throughout 2011 and 2012, but at present the window of opportunity to take advantage of the grant in particular is relatively short.

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