

## Small-Scale Moveable Wind Farm

### Project Summary

Windy City Power LLC is a new small business based in Chicago's suburbs that has developed a new technology that will provide a temporary sustainable productive use on undeveloped brownfields while simultaneously providing community based renewable energy. This exclusive technology allows small (60kw) wind turbines to be placed on land in such a way that the turbine installation is "portable" and does not require any significant excavation or disturbance to the land.

Windy City's model requires very modest capital investment—a few hundred thousand dollars in turbine and transmission costs for most smaller infill sites. The Delta Redevelopment Institute is assisting Windy City Power in identifying appropriate brownfield demonstration sites and refining its business plan with funding from a U.S. EPA grant.



Moveable Wind Turbine located in Chicago

### Green Economic Opportunity

Windy City Power LLC's business model uses wind energy to save and create jobs by using green power on otherwise underutilized land. Windy City Power seeks to lease brownfield sites from landowners for roughly 20 years but is willing to accept the possibility of relocation if necessary. Power is sold to nearby commercial or institutional users instead of to the grid at or below competitive rates.

### Conditions for Success

Small-scale wind turbines are not as efficient as their larger counterparts; however, large wind turbines are impractical in most if not all urban areas. Consequently, small scale wind farms, like the ones proposed by Windy City Power, are a logical approach to bring wind energy to heavily populated areas under the right conditions.

**1. Policies and incentives:** Federal and state incentives for renewable energy production are crucial to small and large wind development. Local government can also provide support through low-cost land leases and appropriate zoning and building codes, including structure height restrictions that are not less than 60 feet. The City of Blue Island, Illinois, just south of the City of Chicago, is considering leasing part of an 80-acre former landfill site to Windy City Power, where power generated by its turbines would be sold directly to tenants of a proposed eco-industrial park.

(OVER)

# Sustainable Reuse of Suburban Brownfield sites

## Small-Scale Moveable Wind Farm, continued

**2. Local buying partner:** Currently, the bulk purchase rate for electricity via power purchase agreements is low and not expected to rise dramatically soon. As a result, a large commercial or institutional purchaser located near a brownfield site or with surplus property of its own can help facilitate the development of a small wind farm. Local purchasers can expect to pay less than the current commercial rate for locally distributed power generated on the wind turbines, but more than would come from a power purchase agreement. Their participation as a direct client of the wind farm makes the economic case of the development much better. An agreement to purchase the power at a set rate also serves to minimize risk to the bank and therefore, helps get the capital needed to complete the project

### Risks & Challenges

A small community based wind farm faces many of the same needs as other types of small businesses, plus some additional industry-wide challenges:

- Competition from utilities and large-scale renewable power generators reducing the cost of energy, and particularly renewable energy, thereby reducing the incentive for local institutions to purchase electricity from alternative local sources.
- Discontinuation of incentives, which undermine the financial return on the capital investment unless efficiencies throughout the small wind turbine supply chain realize counterbalancing cost reductions or electricity rates rise dramatically.
- Reduced demand for locally distributed electricity, as providing on-site power generation becomes more feasible and cost-effective for businesses that otherwise would be local purchasing partners.

### Conclusion

Despite the challenges, demand for small-scale renewable energy is likely to grow as more corporations and institutions explore sustainability measures as a path to becoming more competitive. However, continued incentives will be important in the near future to create a more level playing field between fossil-fuel based power and renewable power.



For more information about Windy City Power's small-scale wind farm model go to: <http://www.windycitygreenpower.com/>