STAFF REPORT PREPARED FOR TOWNSHIPS & COUNTY PLANNING ADVISORY COMMISSION

GOVERNMENT CENTER A101 · 200 FOURTH AVENUE WEST · SHAKOPEE, MN 55379-1220
(952)496-8475 · Fax (952)496-8655 · Web www.co.scott.mn.us

Conditional Use Permit for GroWind LLC to Operate a Commercial Wind Turbine

Request:

Conditional Use Permit (CUP) for GroWind LLC to construct and operate a commercial wind turbine (Wind Energy Conversion System).

Greg Wagner, Senior Planner is the project manager and is available for questions at 952-496-8475.

General Information:

Applicant:	GroWind LLC	**Site Location:**	11640 275th Street E
Property Owner:	William Otting	**Township:**	Section 36, New Market
Public Hearing Date:	November 8, 2010	***Action Deadline:***	December 21, 2010

Zoning/Comprehensive Plan Information:

Zoning District:	Urban Expansion Reserve, UER	**Comprehensive Land Use Plan:**	Urban Expansion Area
Overlay Zoning District:	N/A	**School District:**	Lakeville
Watershed District:	Scott WMO	**Fire District:**	New Market
Ordinance Sections:	Chapters 2,12 & 30	**Ambulance District:**	Allina Ambulance

Report Attachments:

1. Site Location Map
2. Aerial Photo
3. Project Narrative
4. Wind Turbine Site Plan
5. Turbine construction/elevation plans
6. Nordic Wind Power Turbine Specifications
7. Noise Level Assessment
8. Decommissioning and Restoration Plan

Request: A Conditional Use Permit to allow for the construction and operation of a commercial wind turbine.

Comprehensive Plan- The proposal is in conformance with the goals and policies of the 2030 Comprehensive Plan for promoting the use of renewable and alternative energy sources.

Adjacent Land Use/Zoning- *North* – Undeveloped agricultural parcels, zoned UER
South – 10 acre residential parcels, zoned UER
East – 40 acre parcel, zoned UER
West – 80 acre parcel, zoned UER

Existing Conditions- The wind turbine or Wind Energy Conversion System (WECS) will be located in the south central portion of the property. This area is open field bordered by woodlands on the west and north. There are two homes on the north and east portion of the property located over 950 feet away.

Ordinance Requirements- *Lot Size and Area:* The zoning ordinance does not require a minimum lot area or width standards for a WECS as they are permitted on property that is leased.

Setback Requirements Setbacks shall comply with the minimum standards of the district in which the WECS is to be located or the distance of 1.1 times the height (358.9'), whichever is greater.

Wind energy conversion system height: No maximum height for a commercial WECS

Proposed Development- *Lot Size* – 75 acres

Setbacks – The proposed tower is 392 feet from the nearest property line.

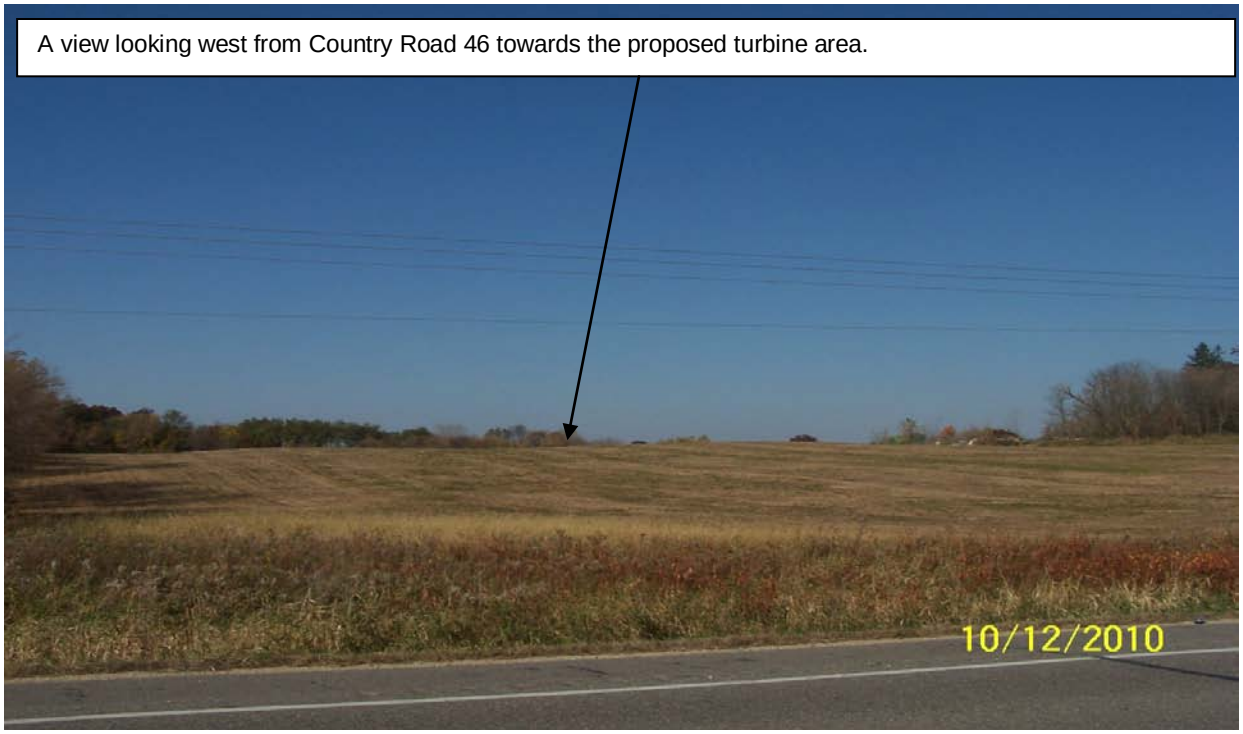
Tower Height: 229.65' to the rotor hub. The blade diameter is 193.56' so at full extension the tips of the blades will reach 326.36'.

Existing Roads- The property has frontage to County Road 46 and to 275th Street E.

Road Improvements- No road improvements are proposed as part of this request. The turbine shall be accessed via a private driveway off of 275th Street E. No new access to County Road 46 will be permitted. The existing driveway onto County Road 46 will be removed as part of this permit.

Public Notice- Public hearing notices were sent to all residents within a 1/4 mile of this project.

Site Photo-



Background-

GroWind LLC is requesting a conditional use permit (CUP) to construct and operate a commercial wind turbine on a 75 acre parcel located in section 36, New Market Township. The County Zoning Ordinance allows commercial Wind Energy Conversion Systems (WECS) in the Urban Expansion Reserve (UER) Zoning District through a CUP. The Ordinance does not require a minimum lot area or separate lot for a WECS as property for these uses is commonly leased from the underlying property owner. Any wind turbine or associated structure must meet the zoning district setback requirements or 1.1 times the height, whichever provides a greater property line setback.

This is the second commercial wind turbine to be proposed in Scott County. Medin Renewable Energy, the parent company to GroWind LLC, has proposed to construct a similar turbine on the parcel immediately to the northwest as part of the Hidden Spring residential development. David Medin, partner in both companies, has indicated that if the turbines are approved by the County Board that construction would likely take place in early 2011. Both turbines will connect underground to transmission lines operated by Dakota Electric Cooperative, which has distribution lines along the County Road 46 right-of-way. In addition to the turbine, GroWind will also add a ground-based storage component that will store generated electric power for use during peak demand hours. Both the turbine and the ground based equipment will be white/off-white in color and have locking mechanisms to prevent unauthorized access to the equipment and turbine tower.

Height and Design-

The proposed wind turbine consists of a 230 foot tower to the turbine location and a double blade design with a blade diameter of 193.56 feet. The total height of the wind turbine structure at full blade extension would reach to 326.36 feet from ground level. The turbine and blades will be white in color as depicted on the turbine specification plans. The blades and turbine can rotate 360 degrees atop the tower depending on the wind direction. Per Federal Aviation Administration (FAA) regulations the top of the tower will have required synchronized flashing red lights.

Required Permits-

The single turbine does not meet the minimum electrical generation requirements to trigger a state Public Utilities Commission (PUC) permit. An application has been submitted to the FAA and is

currently under review with that agency. A building permit will need to be obtained from Scott County prior to construction of the turbine and any ground based equipment.

Structure Setbacks-
The tower is set back 392' from the nearest property line and approximately 1230' from County Road 46. There are two homes on the subject property that are both shown over 950' from the tower location. The nearest off-premise homes to the northwest and to the southeast are both over 1000' from the tower.

Noise-
GroWind LLC has provided a noise level assessment. MN State Rule 7030 regulating noise pollution sets a maximum decibel level of 60 during daytime hours and 50 decibels during nighttime hours to a residential location. The attached noise assessment provides a concentric ring exhibit identifying decibel levels to adjacent homes to be in the 40-49 decibel level during turbine operation.

Decommissioning-
Staff and the applicants are reviewing the decommissioning and site restoration plans to ensure the turbine is properly removed upon reaching the end of its useful life. Generally a commercial wind turbine has a typical operating timeframe of 30-40 years if properly maintained. The decommissioning plan estimates a cost of $82,000 to remove the turbine and restore the site. GroWind LLC proposes to annually escrow $5,000 into an interest bearing account beginning in year 11 of turbine operations to build a fund for the decommissioning. Staff is conducting additional research on the decommissioning plan with the State of Minnesota Public Utilities Commission staff.

Code Compliance-
Prior to issuance of a new CUP the property needs to be brought into compliance with County Ordinance regulations. The property is owned by Bill Otting and has two occupied single family homes. The septic systems for both homes need a septic compliance inspection. There is also a private driveway for one of the homes on County Road 46, an arterial roadway. Following construction of the turbine the private driveway shall be relocated off of County Road 46 to 275th Street East.

Mr. Otting has a house moving business CUP for another property in Scott County. However, there are several vacant homes and garages located on this property in violation of the zoning ordinance. Staff wants to work with Mr. Otting to have the homes removed and to bring the property into compliance. This would likely involve a timeframe for removal of the homes. Staff is recommending that this agreement be in place before County Board consideration of the wind turbine CUP.

Township Recommendation:

The New Market Town Board will be making a recommendation at their November monthly meeting. A copy of the recommendation will be provided at the public hearing.

Staff Recommendation:

Subject to the conditions of approval, the conditional use permit conforms to the Zoning Ordinance; therefore, staff recommends approval of the conditional use permit based on the conditions of approval listed below:

Conditions to be Satisfied Prior to County Board Consideration:
1. The turbine/tower decommissioning and site restoration plan has been reviewed and approved by staff.
2. The applicant shall provide a scaled site drawing, erosion & sediment control plan, and site access drawing showing the driveway relocated off of County Road 46.

3. Approval of the FAA Construction Permit.
4. A $10,000 financial guarantee (letter of credit or cash escrow) shall be provided to ensure removal of the private residential driveway from County Road 46 following construction of the wind turbine.
5. Submittal of compliance inspections for the existing septic drainfield sites for the two existing homes.
6. An agreement is reached with the property owner for removal of stored homes and garage buildings, and the site being brought into compliance with zoning ordinance regulations.

Conditions of approval:

1. This Conditional Use Permit is issued specifically to GroWind LLC, for a commercial wind turbine to be constructed on a 230 foot tower. If the turbine is sold or leased the new owner shall contact the Scott County Planning Department to review the conditions of the CUP.

2. The New Market Town Board may conduct an annual review of the CUP to ensure that the applicant is in compliance with the conditions of the CUP.

3. The applicant shall pay an annual inspection fee for the CUP, if and when the County adopts an inspection fee ordinance.

4. The WECS shall be constructed and located on the property according to the approved project site and construction plans. Upon the wind turbine reaching the end of its useful life the turbine and associated facilities shall be removed according to the approved decommissioning and restoration plan.

5. All Federal, State, and Local regulations shall be met regarding location, height, and design. Any required permits or approvals from regulatory agencies shall be obtained and renewed as required.

6. The WECS shall comply with all Zoning Ordinance Performance Standards for noise, non-interference, and other applicable rules at all times.

7. The site shall be maintained in a neat and orderly manner. No outside storage is permitted. The tower base and other ground equipment shall be locked and secured from unauthorized access.

8. The site shall be accessed off of 275th Street East. The existing access to County Road 46 may be used during construction of the turbine but shall be removed within 30 days following completion of the turbine construction.

9. Any co-location by communications providers shall require a certificate of compliance issued by the Planning Department. This certificate requires co-locators to submit a structural analysis by a licensed engineer and a building permit application to the Scott County Building Inspections Department.

10. GroWind LLC shall be responsible for removing the tower within 120 days of cessation of operations of wind turbine.

11. The applicants shall obtain all required building permit approvals from Scott County and meet all requirements of the state building code.

Criteria for Approval (Chapter 2-6-1):

1. The proposed use will not create an excessive burden on public facilities.

2. The proposed use is compatible with the adjacent residential and agricultural uses.

3. The proposed structure is designed of materials that are not unsightly in appearance.

4. The use is consistent with the purpose of the UER Zoning District.

5. The use is not in conflict with the Scott County 2030 Comprehensive Plan. The use of alternative energy sources is encouraged in the Comprehensive Plan

6. Adequate measures have been taken to provide ingress and egress, access to public roads and on-site parking. The site shall be accessed off of 275th Street East, and no new access shall be permitted off of County Road 46.

7. The proposed tower shall meet the requirements of the State Building Code.

Planning Advisory Commission Alternatives:

1. Approve the request as recommended by Planning Staff with the specified conditions.

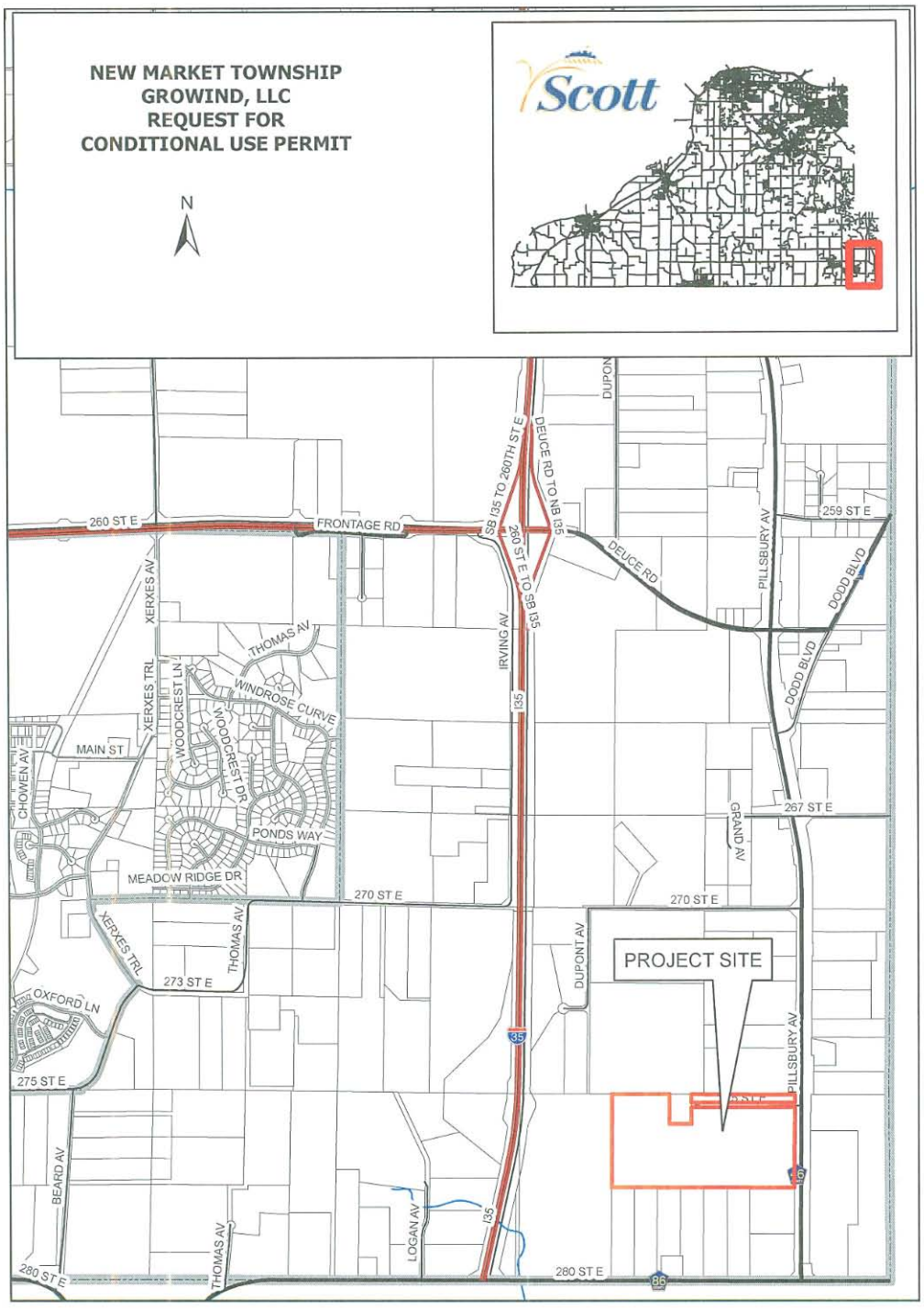
2. Approve the request as recommended by the Planning Staff with amendments to the conditions.

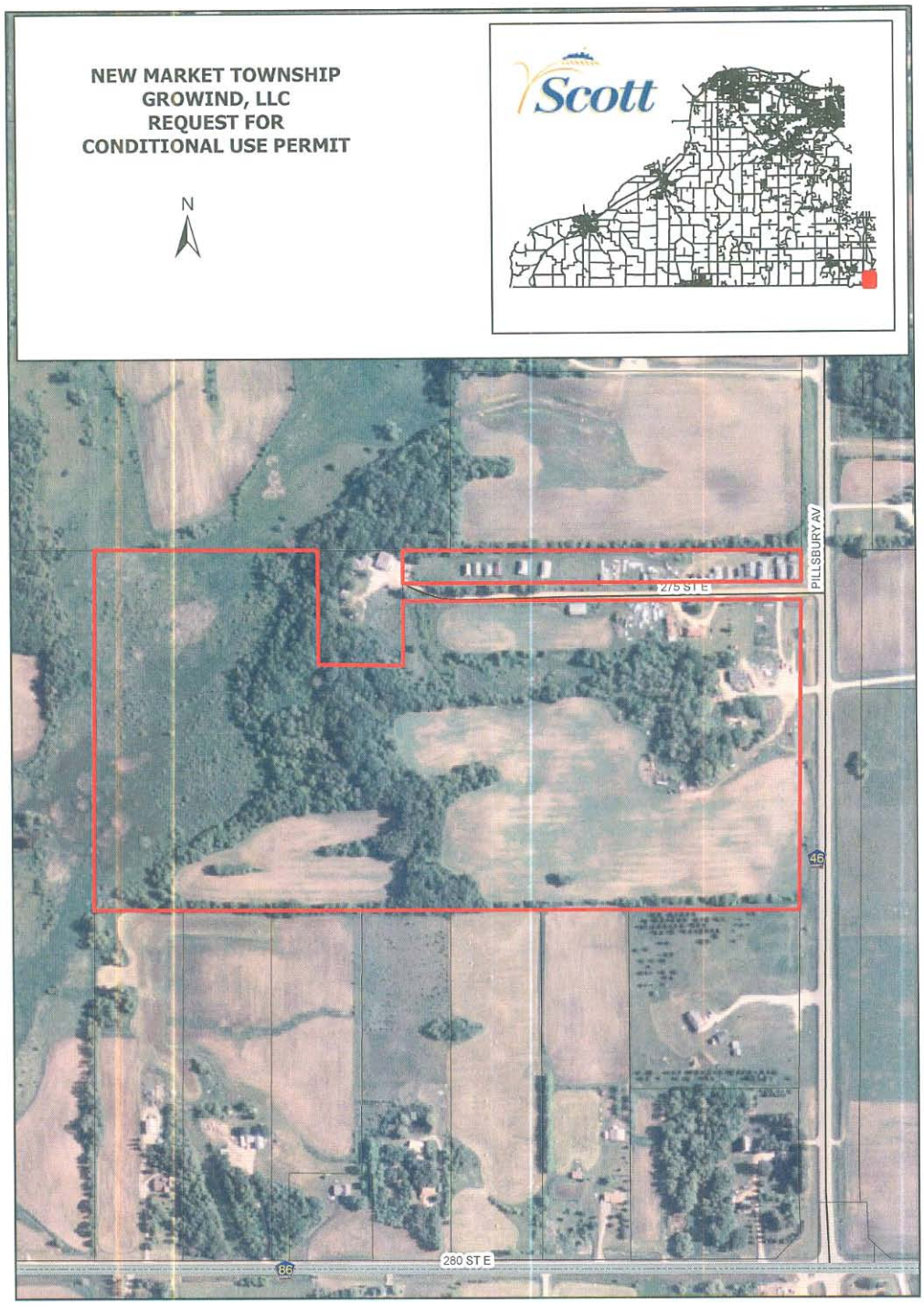
3. Table the request for a specific reason.

4. Deny the request for a specific reason.

Suggested Planning Commission Motion:

Based on the criteria for approval listed in the staff report, I recommend approval of the conditional use permit for GroWind LLC to construct a 230 foot wind turbine, noting that this recommendation is subject the conditions of approval listed in the staff report that must be addressed prior to County Board consideration.


NEW MARKET TOWNSHIP
GROWIND, LLC
REQUEST FOR
CONDITIONAL USE PERMIT
N
Scott
260 ST E
FRONTAGE RD
SB I35 TO 260TH ST E
260 ST E TO SB I35
DEUCE RD TO NB I35
DEUCE RD
259 ST E
PILLSBURY AV
DODD BLVD
XERXES AV
XERXES TRL
THOMAS AV
WINDROSE CURVE
WOODCREST LN
WOODCREST DR
PONDS WAY
MAIN ST
CHOWEN AV
MEADOW RIDGE DR
IRVING AV
I35
267 ST E
GRAND AV
270 ST E
DUPONT AV
PROJECT SITE
273 ST E
OXFORD LN
275 ST E
BEARD AV
LOGAN AV
280 ST E
86


NEW MARKET TOWNSHIP
GROWIND, LLC
REQUEST FOR
CONDITIONAL USE PERMIT
N
Scott
PILLSBURY AV
275 ST E
280 ST E
46
86

The Project

GroWind, LLC proposes to install a 1 Megawatt wind turbine on land owned by Bill and Jeanette Otting, leased with a 30 year term by GroWind.

The Site. The parcel is located in New Market Township. See attached maps.

The land has some crops but the majority of the acreage is occupied by outdoor storage. The property is zoned Urban Expansion Reserve. Two homes are located on the property, both owned by the Ottings. Their home will be the closest residence at 979 feet and 959 feet. A new access road will be constructed off of Pillsbury/Hazelwood/Co. Rd. 46.

In addition to the turbines, GroWind will add a storage component which will allow power produced during the off peak hours (evening) to be sold in peak hours (daytime). See separate tab.

Dakota Electric owns existing 3-phase distribution lines located along Co Rd 46.

The site has an elevation of 1121 feet. Analysis of current and historical wind data shows that the wind regime at this site is suitable for operation of commercial wind facilities which would produce sufficient energy to be economically viable. Existing wind studies for Hidden Springs include this site.

The Team. GroWind, a subsidiary of Medin Renewable Energy, LLC, is a developer of small wind projects in Rice and Scott counties. Principals are Leone Medin and Dan and Janet Medin. David Medin is the Managing Director. GroWind is financing the project.

Nordic Windpower Ltd. is headquartered in Berkley, California with a production plant in Pocatello, Idaho. Their N1000 1-MW turbine has been selected for this project. See separate tab.

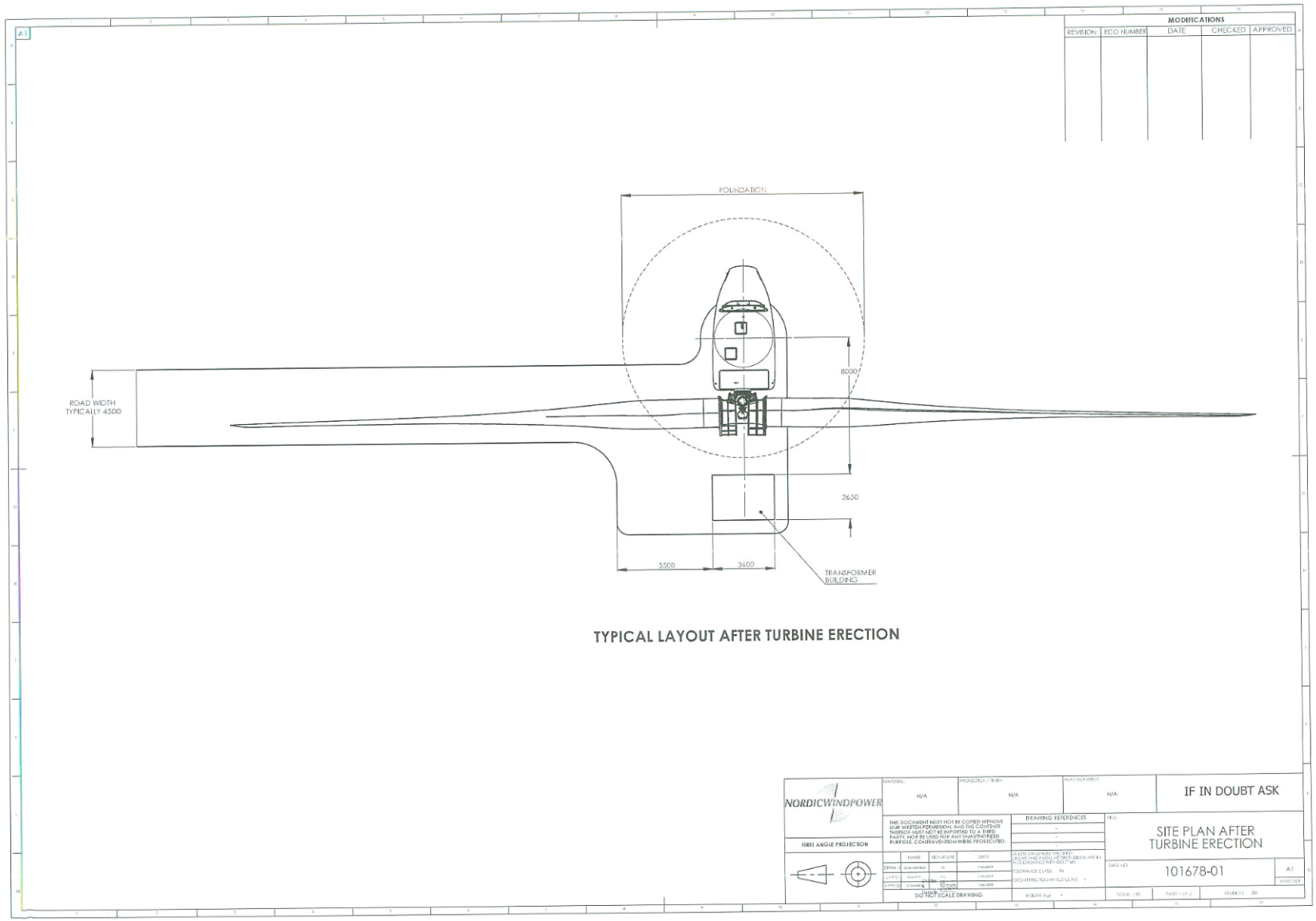
Xtreme Power, located in Texas, manufactures the DPR 15-100c. This is a modular unit that is adaptable to varying storage requirements. See separate tab.

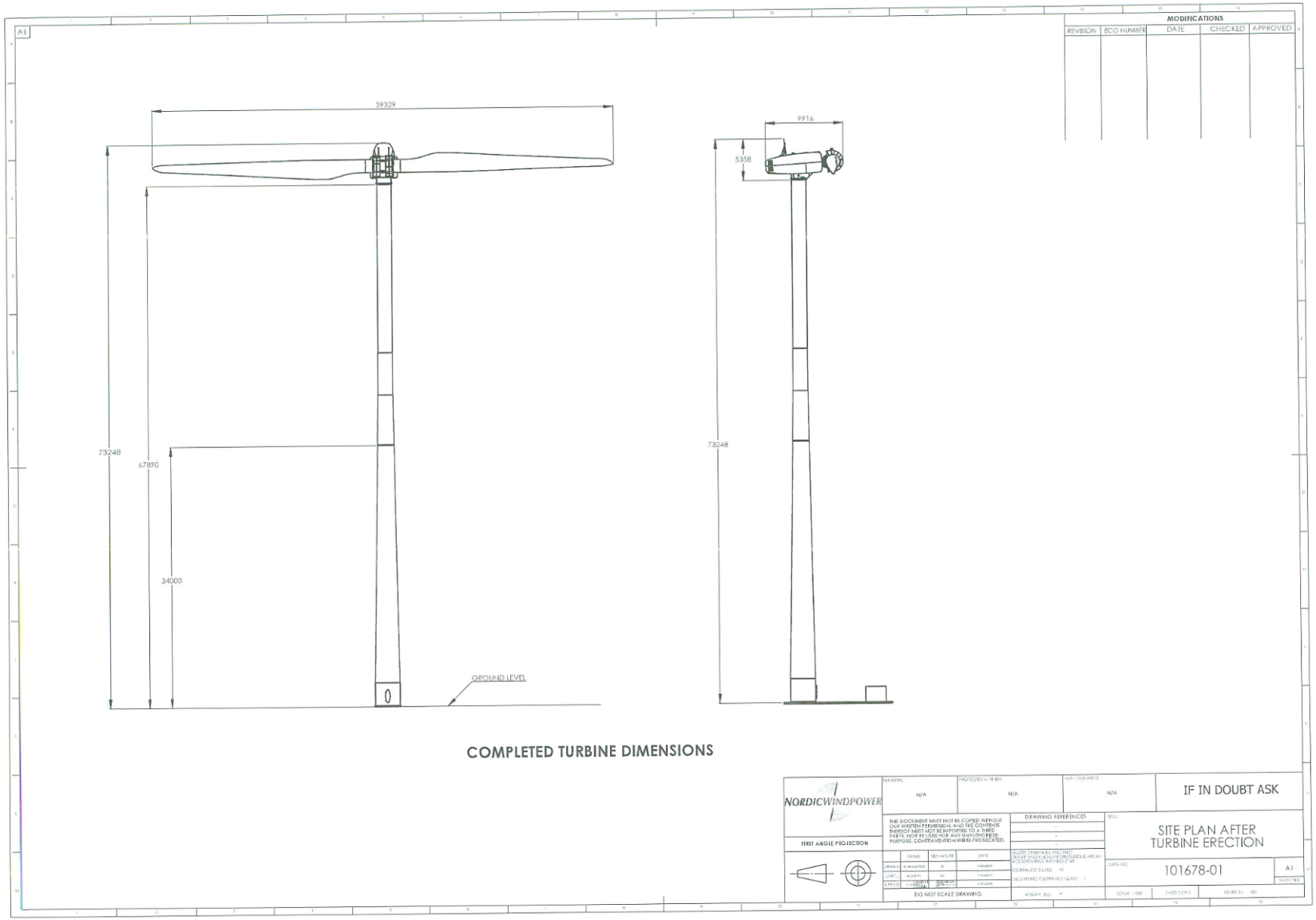
Barnhart Construction will be the installation contractor for the project. They have installed 1700 turbines over the past 6 years. Of those, 175 are located in Minnesota. They are currently the installation contractor for the Bent Tree Wind Farm near Albert Lea. For more information on Barnhart, see www.barnhartrenewable.com.

Dakota Electric will be making the interconnect and the connection to the existing 3-phase line.

Operation. Once installed and certified operational, the turbines will operate without the need of full time management and oversight. Service and maintenance will be required periodically, with only small trucks needed. Access to the nacelle and controls is through a steel door to the interior of the tower. This door will be kept locked at all times. Sensors continually monitor the operation of the turbine and automatically shut it down if there are indications of mechanical difficulties. The turbines will be monitored remotely by both Medin Renewable and Nordic Windpower.


Hidden Springs #1
Dupont Ave
1
35
Property Boundary
F
Nearest Neighbor-1016'
A
Owner's House#1-979'
C
Owner's House #2-959'
E
Otting #1
Nearest Property Line-392'
B
Access Road
Image USDA Farm Service Agency
© 2010 Europa Technologies
© 2010 Google
Pillsbury Ave
©2010 Google
1574 ft
Imagery Date: Jun 3, 2009
44°33'05.97" N 93°17'14.15" W elev 1113 ft
Eye alt 6478 ft

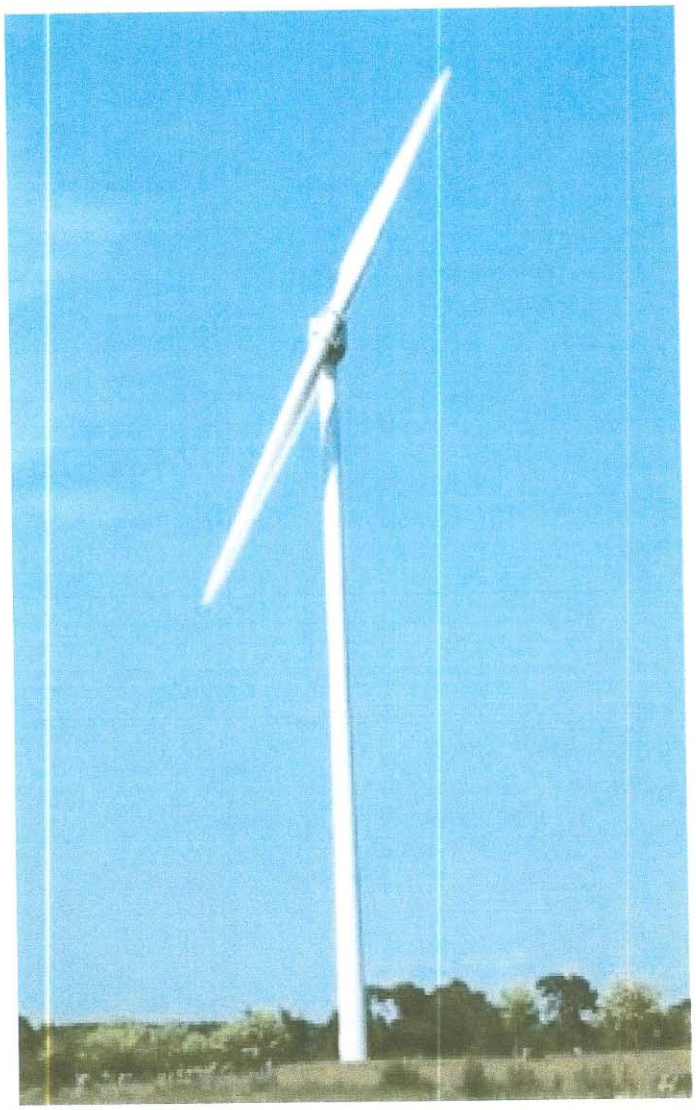

MODIFICATIONS
REVISION
ECO NUMBER
DATE
CHECKED
APPROVED
FOUNDATION
ROAD WIDTH
TYPICALLY 4500
8000
2630
5500
3600
TRANSFORMER
BUILDING
TYPICAL LAYOUT AFTER TURBINE ERECTION
NORDICWINDPOWER
FIRST ANGLE PROJECTION
N/A
N/A
N/A
IF IN DOUBT ASK
DRAWING REFERENCES
SITE PLAN AFTER
TURBINE ERECTION
101678-01
A1
DO NOT SCALE DRAWING

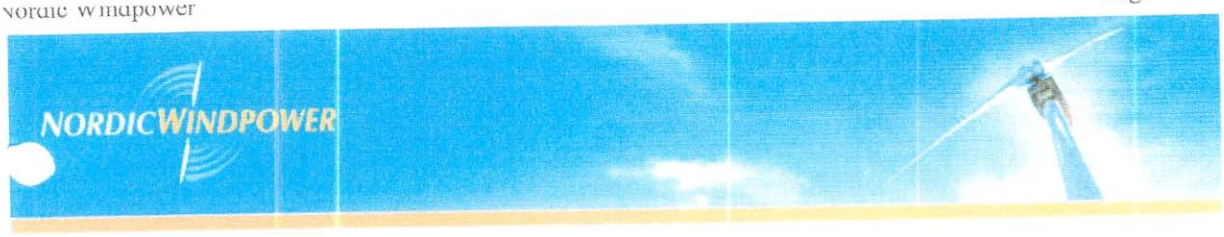

MODIFICATIONS
REVISION
ECO NUMBER
DATE
CHECKED
APPROVED
59329
9916
5358
73248
67890
34000
73248
0
GROUND LEVEL
COMPLETED TURBINE DIMENSIONS
NORDICWINDPOWER
FIRST ANGLE PROJECTION
DO NOT SCALE DRAWING
IF IN DOUBT ASK
SITE PLAN AFTER TURBINE ERECTION
101678-01
A1

NORDICWINDPOWER

N1000

1MW





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N1X00 – 1.X MW
Utility-scale Wind
Community Wind
Technology
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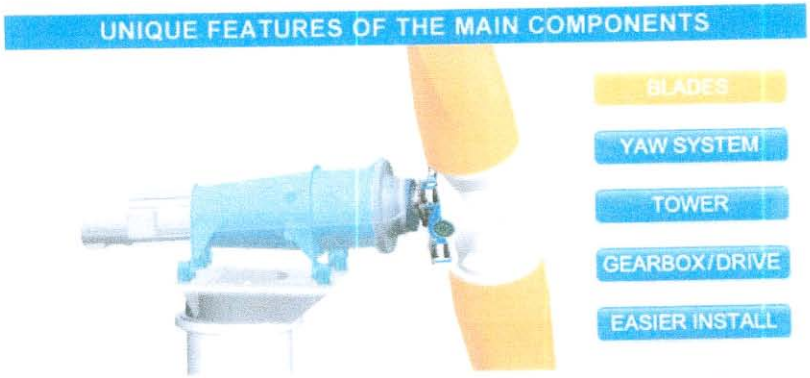
Products

N1000 1-MW TURBINE

> See N1000 Brochure> See Performance Specs

Highlights of the design:

- **Lower capital costs** through a more simple lightweight design.
- **Very low maintenance costs** through reliability, simple design, and roomy nacelle interior.
- **Greater reliability** through lower loading of critical parts.
- **Faster installation and lower installation costs** through reduced weight, reduced crane time, and ground-based assembly.
- **The N1000 is Det Norske Veritas (DNV) certified.**



The choice of a two-bladed system minimizes loads and costs. With two blades, it is possible to use our damped teeter hub to dissipate the jarring fatigue loads on the gearbox and drive train that result from turbulence and wind shear. This virtually eliminates fatigue issues in the gearbox and drive train, resulting in long service life and trouble-free operation.

With such reduced fatigue loading, design focuses on extreme wind conditions. During protective shutdown at high wind speed extreme events, loads are reduced with reduced blade area exposed to the wind.

Stall control for limiting power at high wind speeds reduces drive train loads and lowers system cost. For shutdown in extreme conditions, unique tip brakes pivot the tip of the blade. The hydraulic system can passively activate as an added safety feature.

The N1000 is Nordic Windpower's 1-MW turbine designed both for large windfarms and for smaller community wind deployments. The design and development emphasizes simple, lightweight construction, delivering low installation and operating cost, world-class reliability, and ease of maintenance. The unique "flexible design" implements a teeter-hinged hub, planetary drive train, damped yawing system, and a lightweight "over-critical" tower configuration. The end result of this design approach allows for more movement and flexibility to dissipate wind fatigue loading, while dramatically reducing material and construction costs.

NORDIC

Nordic Windpower Ltd
US office: 125 University Avenue, Second Floor, Berkeley, CA 94710, USA
tel: +1 510 665 9463 fax: +1 510 665 9466

N1000 Technical Data	54 m rotor	59 m rotor
GENERAL		
Nominal power	1000 kW	1000 kW
Rated wind speed	16 m/s	16 m/s
Operational range	4-25 m/s	4-22 m/s
Certification	DNV Design to IEC Class IIb	DNV Design to IEC Class IIIa
Extreme wind speed	59.5 m/s	52.5 m/s
Control principle	Stall	Stall
WIND TURBINE		
Rotor diameter	54 m	59 m
Number of blades	2	2
Rotor orientation	Upwind	Upwind
Rotational speed	25 rpm	21.5 rpm
Blade tip speed	71 m/s	66 m/s
Blade material	GRP/Carbon	GRP/Carbon
Type of hub	Teeter	Teeter
Teeter bearing	Elastomeric	Elastomeric
BRAKING SYSTEMS		
Aerodynamic blade tip brakes		
Hydraulic disc brake on rotor shaft		
GEARBOX		
Type	2 planetary & 1 stage helical, integrated turbine bearings	2 planetary & 1 stage helical, integrated turbine bearings
Gear ratio	1:62	1:87
Cooling	heat exchanger	heat exchanger
GENERATOR		
Rating	1,000 kW	1,000 kW
Type of generator	4-pole induction	4-pole induction
Voltage	600 V / 690 V	600 V / 690 V
Environmental Protection	NEMA3/IP54	NEMA3/IP54
Cooling	Liquid (glycol-water)	Liquid (glycol-water)
Power factor	0.98 at 100% power	0.98 at 100% power
YAW SYSTEM		
Hydraulic drive motors		
TOWER		
Hub height	60 m or 70 m available	60 m or 70 m available
Diameter top/bottom	1.9/3.0 m	1.9/3.0 m
Type	Welded steel tube, painted	Welded steel tube, painted
Number of tower sections	2	2
Tower weight	47 tonnes (60 m tower), 58 tonnes (70 m tower)	47 tonnes (60 m tower), 58 tonnes (70 m tower)
CONTROL SYSTEM		
Distributed control system		
IEC 61131-3 compliant turbine controller		
SCADA system		
WEIGHTS		
Nacelle, with hub	37 tonnes	37 tonnes
Blades (each)	4 tonnes	4 tonnes
NOISE LEVEL		
Less than 104 dB(A) at 8 m/sec		
IEC 61400-11 compliant		

Total height with blade at its most extended is 326.36 feet or 99.5 meters.

Specifications

Dynamic Power Resource

Rated Power	1.5 MVA (Bi-directional)
Energy Storage	1 MWh
System Container Dimensions	40'L x 10'W x 10'H
Total System Weight	< 100,000 lbs
Power Delivery	
Max Instantaneous	200% of rated power, for 3 seconds
Max Continuous	150% of rated power, for 5 seconds
VAR Capability	± 1.5 MVar
AC Voltage (Input/Output)	480 VAC 3-phase*
DC Bus Voltage	750 - 1,200 VDC
Output Normal Frequency	50 Hz or 60 Hz
Total Parasitic Load	10 kW per MW
Round Trip Efficiency	> 90%
Cooling Requirements	Ventilation only**
Relative Humidity	95% RH non-condensing
Ambient Temperature Range	-20°F to 110°F without derating
Altitude Range	Sea Level to 5,000' without derating
Seismic Load Level	Any seismic zone
Other Environmental Restrictions	No siting restrictions

**Can be stepped up to any required voltage*
***Except for liquid cooled IGBT*

Power Electronics

Dimensions	82"L x 96"W x 84"H
Weight	< 9,000 lbs
Operational Input Voltage	750 - 1,200 VDC
Rated Input/Output Power	2,000 Amps DC
Rated Output Voltage	480 VAC 3-phase
Real Power Regulation	± 2% of rated power
Reactive Power Regulation	± 2% of rated power
Output Current & Voltage Distortion	Total Harmonic Distortion << 5%
Rated Output Frequency	50 Hz or 60 Hz, ± 0.1%
Efficiency	> 98% at full load
Environment, without derating	
Ambient Temperature Range	-20°F to 110°F
Stored Temperature Range	-30°F to 150°F
IGBT Cooling System	Liquid cooled
Compliance	IEEE 519, IEEE 1547, UL 1741

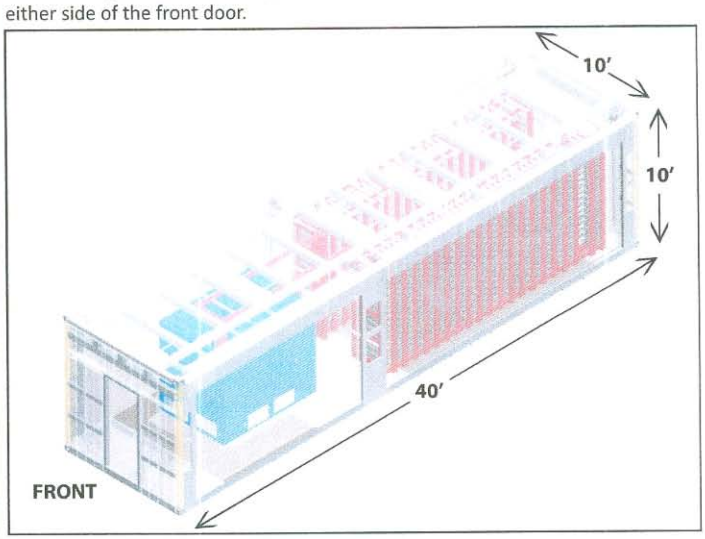
Control System Capabilities

- Multi-tiered Control System (SCADA, PLC, FCB) for Redundant Safety
- Fully Automated Sub Micro-second Response Time
- 24/7 Intelligent Fault Response System with Text Notification
- Real Time Remote Interface
- Comprehensive HMI for Total System Control & Real-Time Monitoring
- Auto & Manual Modes of Operation
- Flexible Programmable Response for Any Application Inputs
- Micro-second Data Acquisition & Historical Performance Data Logging
- Interoperability with External SCADA Devices
- Employes LAN for Component Communication within Control Room
- Remote Access through Secure VPN Connection

PowerCells™

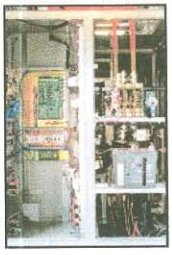
Dimensions	30"L x 5"W x 5"H
Weight	58 lbs
Cell Voltage	12 VDC
Current	2,500 Amps for 30 seconds
Energy	1 kWh @ 3 hour rate
Instant Power Capacity	50 kW
Cycle Efficiency	95% - 99%
Cycle Life	
@10% Depth of Discharge	> 250,000 Warranty
@50% Depth of Discharge	> 20,000 Warranty
Self Discharge Rate	< 1% per month for 3 months
Ambient Temperature Range	-20°F to 120°F without derating
Operating Temperature	Ambient + 3°F
Environmental Impact	Non-Hazmat Rated, 95% Recyclable Potential

As depicted in the CAD drawing, the power electronics (in blue) sit at the front of the container. PowerCells™ are placed in two parallel racks (in red and black), each holding 500 kWh of storage. Controls (not in illustration) are placed on either side of the front door.

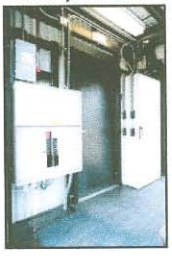


Between PowerCell™ Racks

Inside Power Electronics

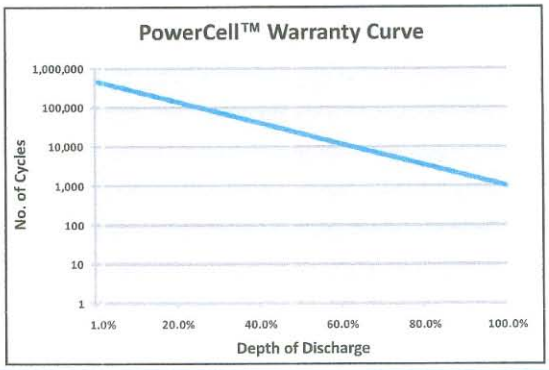


Control System Cabinets



Container Exterior

While PowerCell™ life cycle is warranted according to the graph below, previous PowerCells™ have shown > 3,000,000 cycles in the field.



Xtreme Power
Xtreme Power, Inc.
1120 Goforth Rd.
Kyle, TX 78640
Tel: (512) 268-8191
Fax: (888) 263-5870
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ASSESSMENT OF NOISE LEVELS ASSOCIATED WITH WIND GENERATION NEAR ELKO, MN FOR MEDIN DEVELOPMENT

Medin Development on behalf of GroWind, LLC, requested Wind Utility Consulting, PC ("Consultants") to perform an assessment of the noise levels produced by a proposed wind turbine southeast of Elko, Minnesota to satisfy the zoning ordinance requirements adopted by the Scott County Board of Supervisors.

Based on information provided by Medin Development, a Nordic N1000-59 1 MW wind turbine is proposed for installation at 44-32-55.25 N and 93-17-17.16 W NAD 83. This is approximately 2.25 miles southeast of Elko, Minnesota in Scott County.

Figure 1 on the following page is a topographical map of sound levels in dBA around the proposed turbine site which is shown by the black star. The consultant identified prospective buildings within 1,300 feet of the wind turbine and this area is identified by the red circle on the map. The black concentric circles show the ground- level noise levels calculated by the Wind Farm program by RESoft. The Nordic N1000-59 wind turbine was modeled using a 70-meter tower and a 59-meter rotor diameter and a broadband sound power level of 104 dBA from the turbine manufacturer.

Figure 2 below shows the same noise levels on an aerial photograph. There appear to be twenty-eight prospective buildings near or within 1,300 feet of wind turbine as shown by the red dots on the map. The Consultants do not know which of the twenty-eight buildings are occupied. Some buildings are likely to be out buildings at farmsteads. All twenty-eight sites are below 50 dBA and satisfy the zoning ordinance requirements adopted by the Scott County Board of Supervisors.

Wind Utility Consulting, PC
October 18, 2010

FIGURE 2

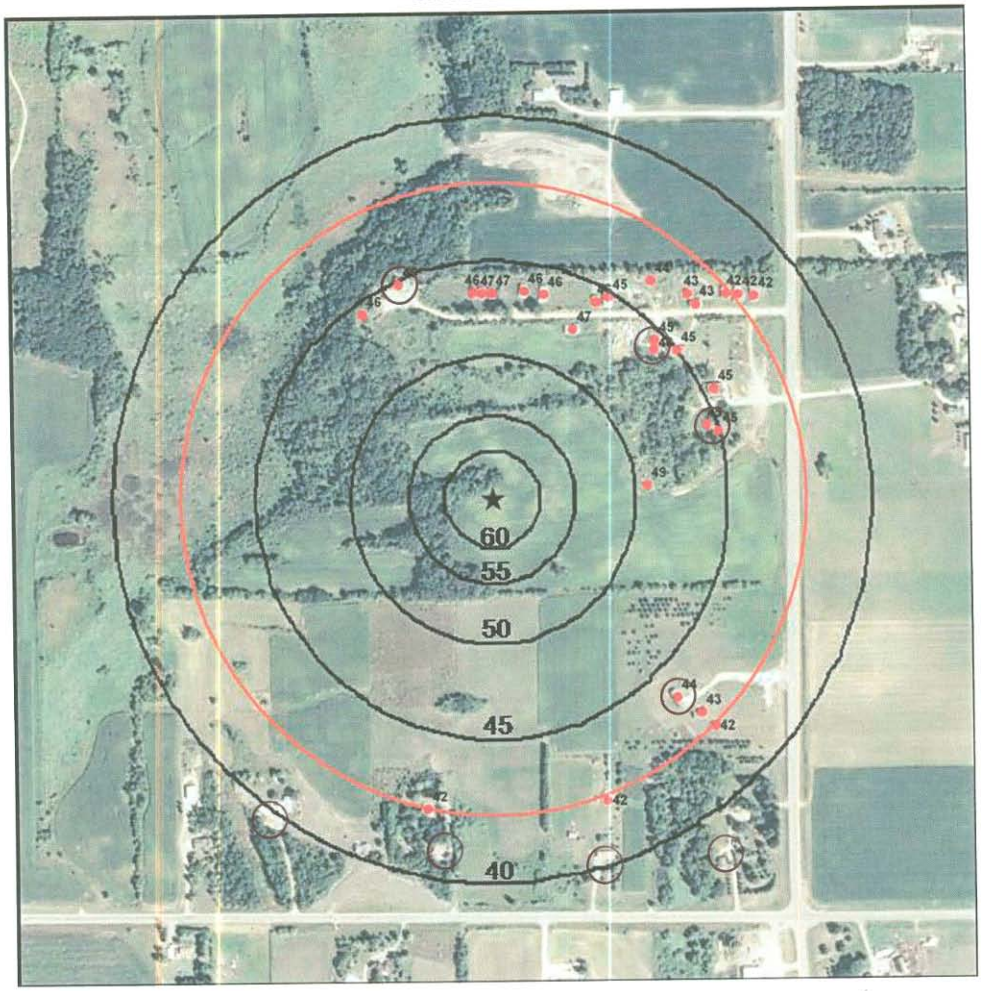
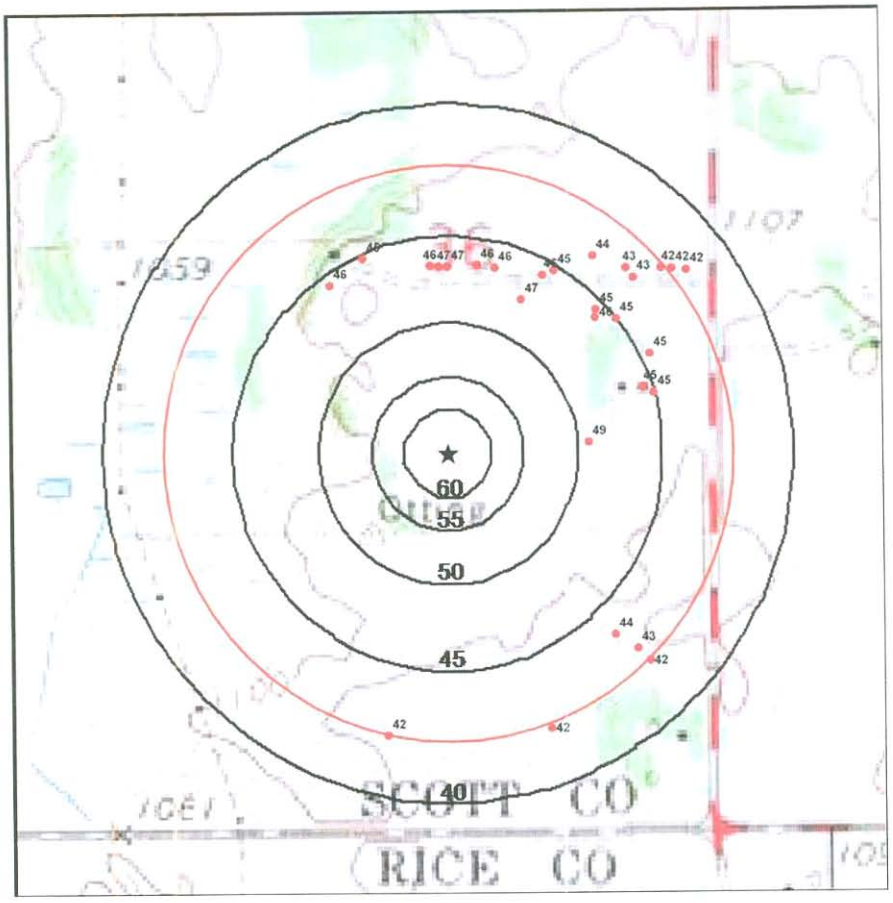


FIGURE 1



GroWind - Otting #1 Turbine - Scott County, MN

Decommissioning and Restoration

Decommissioning and restoration will be conducted in accordance with the requirements of Minnesota Rules part 7836.0500, subp. 13. Wind turbines have a life expectancy of 25-30 years.

GroWind, LLC reserves the right to explore alternatives regarding decommissioning at the end of the permit term. One option GroWind may explore is to re-apply for a permit and continue operation of the turbine. Retrofitting, repowering or replacing the turbine based on new technology may allow the turbine to produce efficiently and successfully for many more years.

Another option is selling the wind turbine for removal and placement in another area. The estimated value of the turbine at the end of the permit term is $250,000.

If the turbine cannot be sold for re-use, a third option is to scrap the turbine for its salvage value to help defray the cost of decommissioning. At the current price of scrap, $350/ton, a 58 ton tower has a scrap value of $15,000. Copper and aluminum components add another $1000. The transformer at the base of the turbine would have little wear and would be valuable for reuse. It would not be scrapped. Based on a 7% increase per year, it is estimated that the value of the scrap in 30 years will be approximately $65,000.

The decommissioning process comprises the removal of above-ground structures to a depth of 48 inches, restoration of topsoil, re-vegetation and rock picking. Access roads, fencing and residual minor improvements need not be removed if the underlying landowner requests that they remain in place. Above ground structures include the turbine and transformer.

The turbine will either be reduced to shippable dimension for disposal, or disassembled and shipped to another location. An appropriate sized crane will be brought in using the access road already there.

The below-ground foundation will be removed to a depth of 48 inches. Top soil will be removed from an area surrounding the foundation and stored for backfill. After removal of the foundation materials, the hole will be filled with clean sub-grade material comparable to the immediate surrounding area. It will be compacted, top soil will be added, and the surface will be seeded according to the land owner's request. All unexcavated areas compacted by equipment shall be de-compacted consistent with the surrounding area.

All below-ground cables and conduits will be buried to a depth of 48 inches at installation. They contain no materials known to be harmful to the environment and will be abandoned and remain in place.

The cost of removing the turbine and selling its components for scrap value is:

Crane Set-up & Tear-Down		$20,000
Dismantle blades, hub, nacelle, and tower		$50,000
Foundation removal		$ 8,000
Backfill/restoration		$4,000
Total Decommissioning Costs		**$82,000**
Scrap value		$65,000
Value of transformer		$20,000
TOTAL Net Costs for Decommissioning	**Plus**	**$ 3,000**

Though the above decommissioning costs will be more than covered by the cost of scrap and the value of the transformer, GroWind will escrow $5000/yr in an interest bearing account as an added guarantee, beginning in the eleventh year through the 20th year.

GroWind will complete the decommissioning process within 120 days of the cessation of operation.