



windmills usa

Wind Energy Parks on Native American Lands

In partnership with
The Seminole Tribe of Florida, Inc.
and
Nordex AG



Mission Statement

Windmills USA is a company dedicated to creating Wind Energy Parks on Native American Reservation lands that have suitable terrain and wind conditions. This project in Partnership with the Seminole Tribe of Florida, Inc. and Nordex AG will create green energy while providing employment and other economic benefits to Tribal members.

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Windmills USA

Windmills USA is a group of skilled businessmen, Wind Energy Park developers, and equipment manufacturers working in collaboration with the Seminole Tribe of Florida, Inc. to develop renewable energy resources with local tribes on reservation lands that provide the most suitable terrain and optimum wind conditions.

Vision

Under our corporate program, Tribes will receive a share of the revenues generated from wind energy without the necessity for any investment from the Tribe itself. Our group, with more than 125 well skilled development specialists, will evaluate the Tribe's reservation lands for the feasibility of a wind energy park including wind and terrain conditions, accessibility and availability to connect to the grid, environmental considerations including birds, bats, livestock and more, airplane traffic, and an entire spectrum of other considerations necessary to bring the Wind Energy park to fruition. Included as applicable, will be on site wind mast tests and economic feasibility. The successful result of which will be funding and development of the Wind Energy park and employment and revenue for the Tribe and its members.

Tribal Benefits

- **Native American Indian Tribes will have the opportunity to profit from otherwise underutilized and or underdeveloped developed land, while continuing to preserve the environment and maintain livestock, mineral and agricultural programs.**
- **Creation of new job opportunities for tribal members, both on a short-term and long-term basis.**
- **Creation of long-term revenue stream from utilized lands.**
- **Creation of a new diversified business on Tribal lands that will attract positive attention and generate high success.**
- **Production of electricity for self sustaining uses and growth on Tribal lands.**
- **Participation and pride in creating a greener future for generations, hereafter.**



Seminole Tribe of Florida, Inc.



The Seminole Tribe of Florida, Inc. actively seeks to help improve the quality of life; not only of its members, but of other Native American Indian Tribes as well. As such they are continuously exploring different economic opportunities on Native American Reservation lands in order to help grow Tribal economies through diversification. In the case of Wind Energy Parks, an opportunity is available for Tribes to gain revenue from otherwise under-utilized land with minimal disturbance to the environment, while also benefiting from the creation of employment both on a short-term and long-term basis.

Consequently, The Seminole Tribe of Florida, Inc., recognizing the need for business diversification in all Native American Tribes, has taken this opportunity to initiate this effort and participate with Windmills USA by working with all applicable tribes in the development of Wind Energy parks on their Tribal lands. The Seminole Tribe, while noted for successful endeavors in Gaming, including the recent purchase of The Hard Rock Enterprise and our efforts in bringing a Native American consortium together for the sale of beef under the "Seminole Beef" brand, also sees Wind Energy as an available and "green" resource that many Tribes have available and could be of significant benefit to them. This project brings an opportunity for those Tribes to participate in a diversification effort which promises to bring long term benefits to both the Tribes and the general populace as our world wide needs for "greener" and more reliable energy sources continue to grow.





Nordex AG



Few technologies have made so much progress in recent years as the use of wind energy. Nordex is one of the fathers of this development.

Nordex was launched in 1985, before the international demand for wind turbines increased in the first half of the nineties. One of the founding members is today's Sales Director, Carsten Pedersen. From the outset, Nordex focused on large, powerful turbines. In just two years, the company installed the largest series wind turbine in the world at the time.



Nordex History

Following the principle of small steps, Nordex has succeeded in building reliable machines, which operate with ever-increasing efficiency. Moreover, they have set new standards with several of their innovative products: the entry into the megawatt class in 1995 and the development of the first wind turbine with a capacity of 2.5 megawatts in 2000 – which today is one of the largest serial produced wind turbines in the world - are just two examples of this.

- 2007 Opening of new rotor blade production in China / Launch N100
- 2006 Installation of Germany's first offshore turbine / Chinese production of multi-megawatt turbine commenced
- 2005 Launch N90/2500 kW
- 2003 Installation of the 2,000 Nordex turbine / 1. Offshore turbine installed
- 2001 Commencement of industrial rotor blade production
- 2001 IPO
- 2000 Transfer of wind power activities to the new Nordex AG
Completion of the world's first series 2.5 megawatt wind turbine
- 1999 Installation of the 1,000th Nordex turbine
- 1995 Construction of the world's first series megawatt wind turbine
- 1992 Establishment of production operations in Germany
- 1987 Production of the world's largest series wind turbine (250 kW)
- 1985 Incorporation of Nordex in Denmark

Today more than 3,400 Nordex wind turbines with a total rated output of more than 4,200 megawatts are already rotating in 34 countries of the world. Nordex is represented with offices and subsidiaries in 18 countries. In this way Nordex is consistently seizing development opportunities in a market which will continue growing in the course of the next few years.

Nordex AG is a management holding company with its headquarters in Rostock. The domicile of the board and administration is Norderstedt, near Hamburg. Nordex AG's task is to control and coordinate the activities of the two 100 percent subsidiaries Nordex Energy GmbH and Nordex Energy B.V.



TURBINE CONCEPT OF THE N90/2500.

A good example of this is the new N90/2500. This turbine is a direct further development of our N80/2500 kW and N90/2300 kW series, which we have been producing and operating since 2000 and 2002 respectively. Around 600 N80, N90 and N100 machines are now* in operation worldwide, onshore and offshore. Some of these turbines have been installed at very challenging locations—thereby we have been

able to gain a great deal of experience. This wealth of experience has contributed to the optimised N90/2500. The deliberately generous overall design of the N80/N90 series made it possible to increase the nominal output of the new N90 to 2,500 kW. But the modifications also relate to many other details that have a positive effect on the turbines yield and reliability: some examples:

Optimisation of the N90 concept:

High level of availability in the pitch system:

- optimised emergency power supply for pitch drive
- further developed battery-charging management, which supplies the battery sets with a temperature-based charging voltage and conducts an automatic voltage test of the batteries every two hours. Each set of batteries is equipped with a charger
- automatic lubrication system for all three pitch systems
- ventilated water protection

Low-wear rotor brake

- active hydraulic rotor brake permits idling when separated from the network, relieving the drive train

Maintenance-friendly nacelle housing

- optimised nacelle casing provides better thermal properties, safer working and makes service and transport easier

Powerful yawing

- further developed brake and drive system
- intelligent control concept ensures low-strain yawing under extreme operating conditions

Automatic lubrication

- automatic greasing for components of the drive train and yaw and pitch system

All-location turbine concept for reliable yields

With the N90/2500 you opt for a mature product that has proven itself over and over again. And what is more, you have several options to choose from. The new N90/2500 is designed for locations with strong winds and locations with light winds, the HS-version (high-speed) is certified according to IEC 1b, the

LS-version (low-speed) according to IEC 2a (80 m tower). Nordex supplies the turbine as a 50 or 60 Hz version, depending on the country where you wish to connect your wind park to the grid. The HS version of the N90/2500 can also be employed offshore. The N90/2500 is our all-location turbine concept—your yield guarantee for every wind farm.

Our N90/2500 range at a glance

- ✓ N90/2500 LS 50 Hz
- ✓ N90/2500 HS 50 Hz
- ✓ N90/2500 HS Offshore 50 Hz
- ✓ N90/2500 LS 60 Hz
- ✓ N90/2500 HS 60 Hz



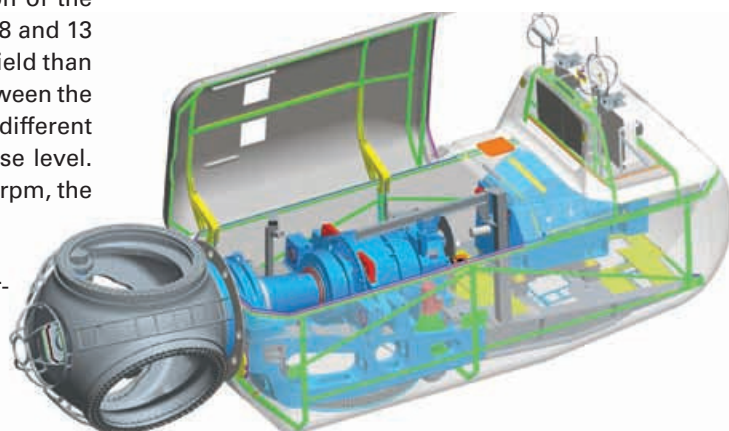
TECHNICAL SPECIFICATIONS

Turbine concept	variable speed, single-blade adjustment	Operating data	
Nominal output:	2,500 kW	Cut-in wind speed:	3 m/s
Rotor diameter:	90 m	Nominal output wind:	approx. 13 m/s (HS), approx. 14 m/s (LS)
Hub height:	70 m, 75 m, 80 m, 100 m, 120 m	Cut-out wind speed:	25 m/s
Rotor		Generator	
Type:	upwind with active blade adjustment	Type:	double-fed asynchronous generator
Number of blades:	3	Nominal output:	2,500 kW
Swept area:	6,362 m ²	Nominal voltage:	660 V
Speed range:	9.6–14.9 rpm (LS); 16.0 rpm (HS)	Frequency:	50 or 60 Hz
Tip speed:	approx. 70 m/s (LS); 75 m/s (HS)	Max. speed range:	740–1,310 rpm
Blade material:	glass fibre-reinforced plastic, integrated lightning protection	Gearbox	
Tower		Type:	two-stage planetary gearbox with one spur-gear stage or differential gearbox
Hub height:	70 m, 75 m, 80 m, 100 m, 120 m	Nominal output:	2,775 kW
		Transmission:	i = 71.9 to 92.9

TECHNICAL SPECIFICATIONS.

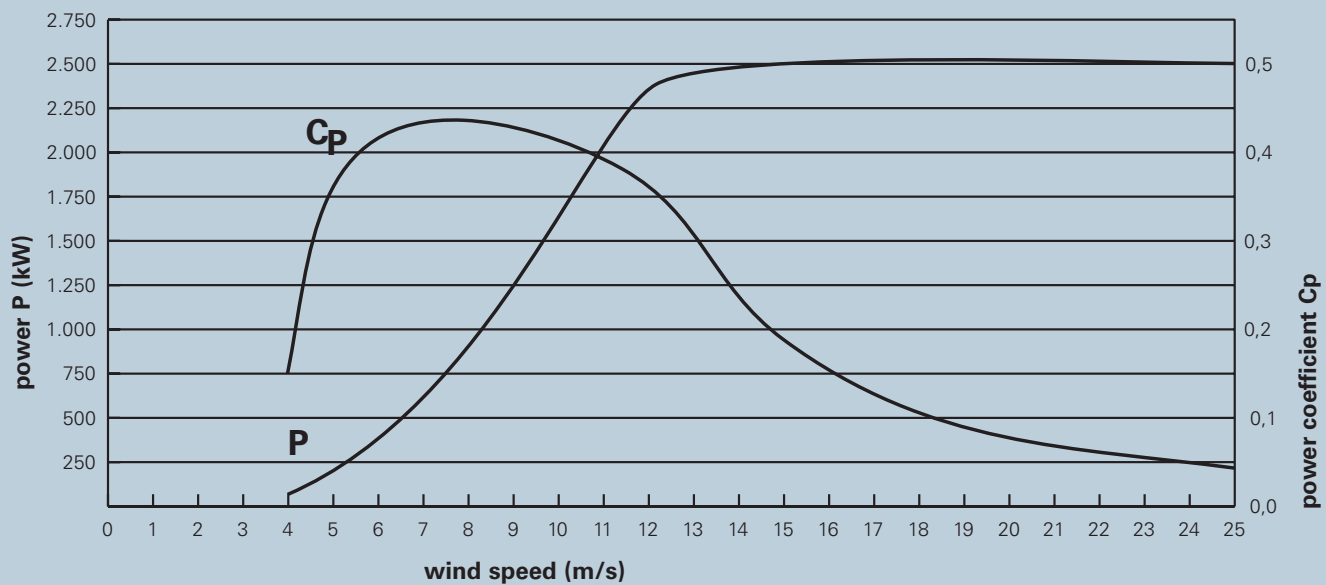
The higher speed at which the HS version of the N90/2500 rotates at wind speeds of between 8 and 13 m/s means that it produces a higher energy yield than the LS version. A further major difference between the HS and LS versions, apart from suitability for different locations (strong wind/light wind), is the noise level. While the HS has a nominal speed of up to 16 rpm, the LS is running at a maximum of 14.9 rpm.

This is reflected in the noise level. The reference output level at 95% nominal output is shown below:

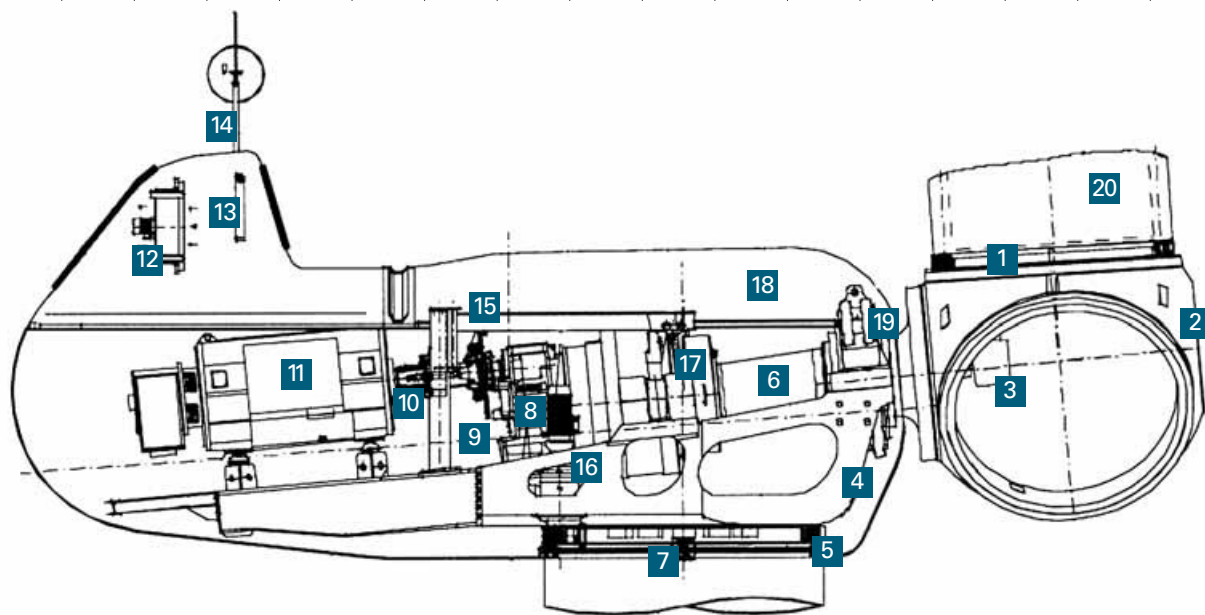


N90/2500 LS			N90/2500 HS	
reduced-noise operation at 95% red. nominal output			at 95% red. nominal output	at 95% red. nominal output
101.5 dB(A)	102.5 dB(A)	103.5 dB(A)*	104.5 dB(A)	107 dB(A)
1,600 kW	2,000 kW	Ca. 2,200 kW	2,500 kW	2,500 kW

*Calculated



N90/2500 LS power curve | High yield also at low wind speed.



- | | | | |
|-----------------|-----------------------|---------------------|---------------------|
| 1 Pitch bearing | 6 Rotor shaft | 11 Generator | 16 Yaw drive |
| 2 Rotor hub | 7 Yaw brakes | 12 Generator cooler | 17 Gearbox mounting |
| 3 Pitch drive | 8 Gearbox | 13 Gearbox cooler | 18 Nacelle cover |
| 4 Nacelle frame | 9 Safety brake | 14 Wind sensors | 19 Rotor bearing |
| 5 Yaw bearing | 10 Generator coupling | 15 Hoist | 20 Rotor blade |



 **Nordex rotor blade production** | a N90 blade beside smaller blade generations.

NORDEX ROTOR BLADE CONCEPT.

One of the core components of the N90/2500 is the rotor with its diameter of 90 metres and a sweep of 6,362 square meters—equivalent to the area covered by a football pitch. With these dimensions, the N90 numbers among the largest onshore turbines, making it possible to exploit the maximum amount of energy from the wind supply.

But a rotor blade is also subjected to enormous strains. This is why only rotor blades fulfilling the highest standards in terms of manufacture and material quality are used for the N90/2500. For example, Nordex produces its blade by means of the vacuum-injection method, using a new type of VAP foil (Vacuum-Assisted Process; an EADS patent), which prevents even the smallest air pockets forming in component structures. In this process glass fibres are subjected to a vacuum in order to inject epoxy resin into the fibre material. The material used (glass fibre) is 10 per cent more resistant to tensile stress than conventional fibres. This is the result of a material test conducted by the Institut für Materialfor-

schung und Anwendungstechnik Dresden, which tests the material properties of airbus wings, among other objects. In addition to this, Nordex produces the supporting structures (struts, stays) separately from the aerodynamic shell in order to ensure a high degree of dependability in production and quality control.

Aviation industry as a benchmark

Thanks to the new geometry of the blade tip, Nordex has made major advances with regard to noise optimisation. The new profile has resulted in a significant reduction in noise emissions. One more special feature: the large proportion of aluminium in the tip ensures an extremely high level of protection against lightning, providing a safety bonus compared to many conventional rotor blades.

All the rotor blade types used by Nordex have withstood load tests above the design threshold. Furthermore, Nordex conducted extensive additional material tests when developing the rotor blade.



Component in the vacuum injection process.



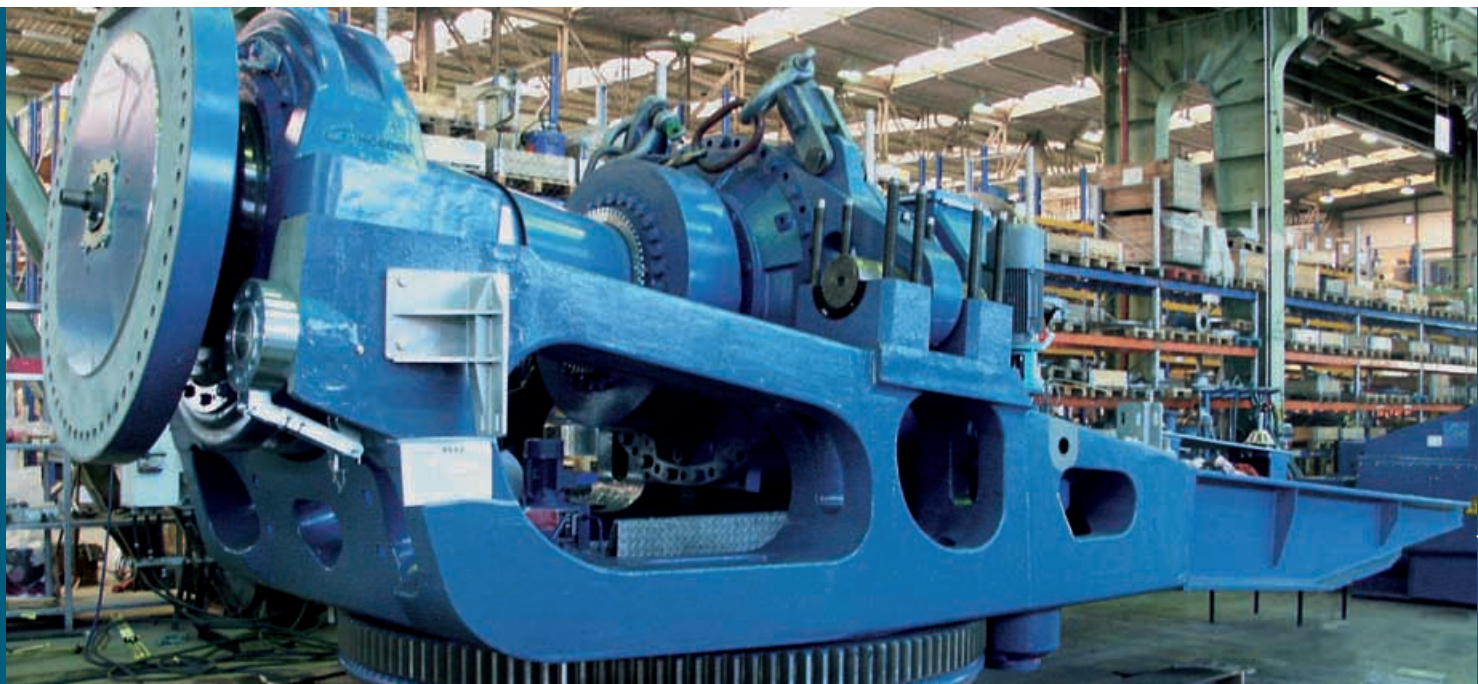
Rotor blade installation.



Ready for take-off.

Your benefits at a glance:

- With a swept area of 6,362 m², one of the largest onshore serial-produced turbines
- High rotor blade quality thanks to vacuum-injection process using VAP foil
- 10% higher tensile strength of glass-fibre reinforced plastic
- Blade tip optimised for low noise
- High lightning protection thanks to aluminium blade tip



DRIVE CONCEPT.

For large turbines in the multi-megawatt class Nordex makes use of a gearbox-based drive concept. In this way it is possible to keep the tower-head mass low and so have dependable control of the loads in the system as a whole. The drivetrain consists of a rotor shaft, which is connected to the gearbox via a shrink-fit coupling. The speed is increased and transferred to the generator via a coupler with overload protection in order to be converted into correspondingly high electrical energy. This principle makes it possible to use very compact sub-assemblies. The relatively light weight and small volume for the N90/2500 power class also facilitates transport and installation of the turbine.

Gearbox with reliable torque split.

The N90/2500 can be supplied with different gearboxes. In addition to the two-stage planetary gearbox with a one-stage spur gear, the option of a differential gearbox is also offered. Both gearboxes are compact and reliably convert the high output (torque) of large turbines. This planetary gearbox was first used in the N80 in the year 2000 and has since established itself as the standard for large turbines on the basis of positive experience. Working principle: the power transmitted is split onto the planet wheels in order to ensure good transmission of the power torque. The power is brought together again on the spur wheel.

The torque split is slightly different in the differential gearbox. With this gearbox the rotor torque is transferred to two planetary stages and converted, and the two power lines are subsequently reunited in the third planetary stage. Here, the torque and speed are converted again and passed on to the generator by the spur-wheel stage.

Heat is removed from the gearbox through the oil circuit in an oil/air cooler. A pump with two pumping stages forces the gearbox oil through a combined filter element (coarse filter 50 μm , fine filter 10 μm) into the cooling circuit. The job of the coarse and fine filters is to remove solids from the gearbox oil. As an option, an additional ancillary flow filter system (ultrafine filter 5 μm) can be installed.

If the optimal operating temperature has not yet been reached, a thermo-bypass returns the oil directly to the gearbox. If the optimal operating temperature of the oil is exceeded, the active oil/air filter is switched on and the oil is cooled.

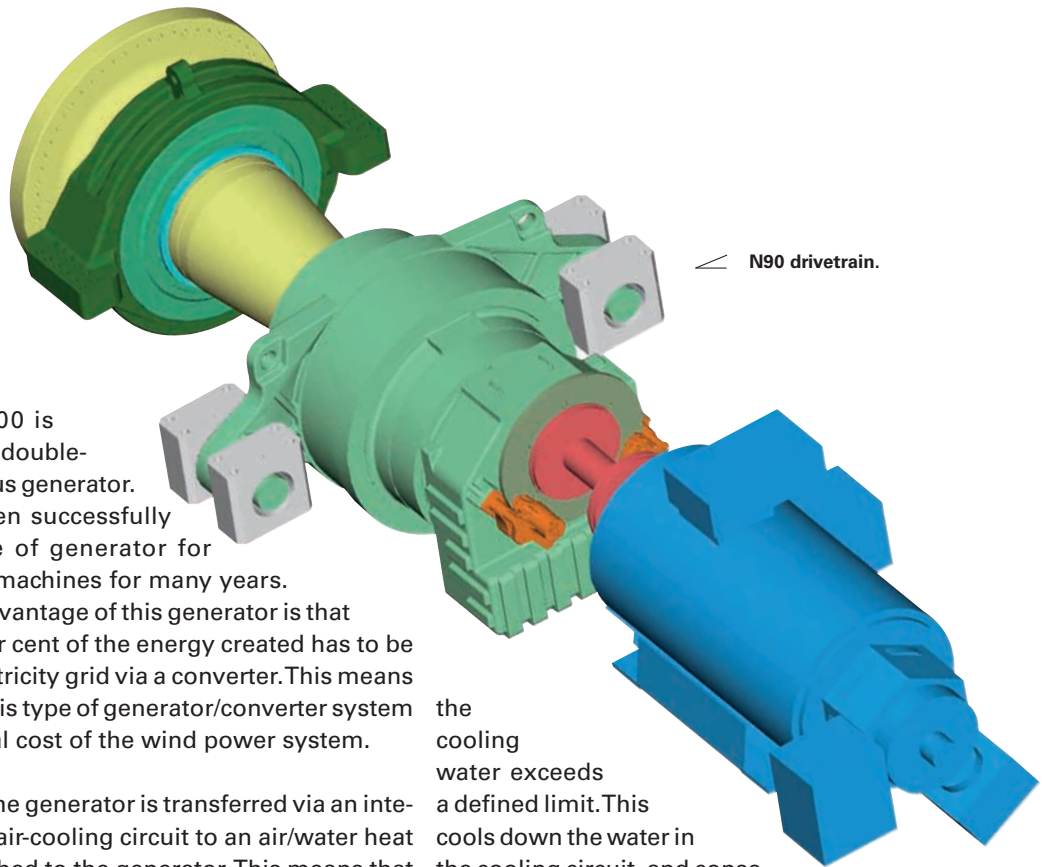
The cooled and filtered oil is carried specifically to those components subjected to high thermal loads and to all those points requiring lubrication (bearings, gear teeth, etc.).

Your benefits at a glance:

- Compact drive train
- Low tower-head mass
- Guaranteed installation quality
- Multi-megawatt gearbox design
- Reduced-load operation via drivetrain damping



▲ N90 drivetrain.



◀ N90 drivetrain.

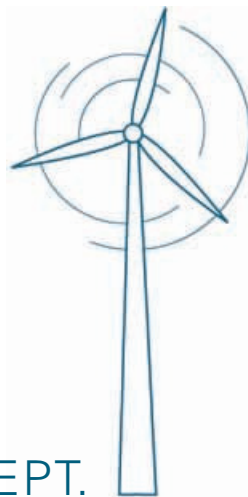
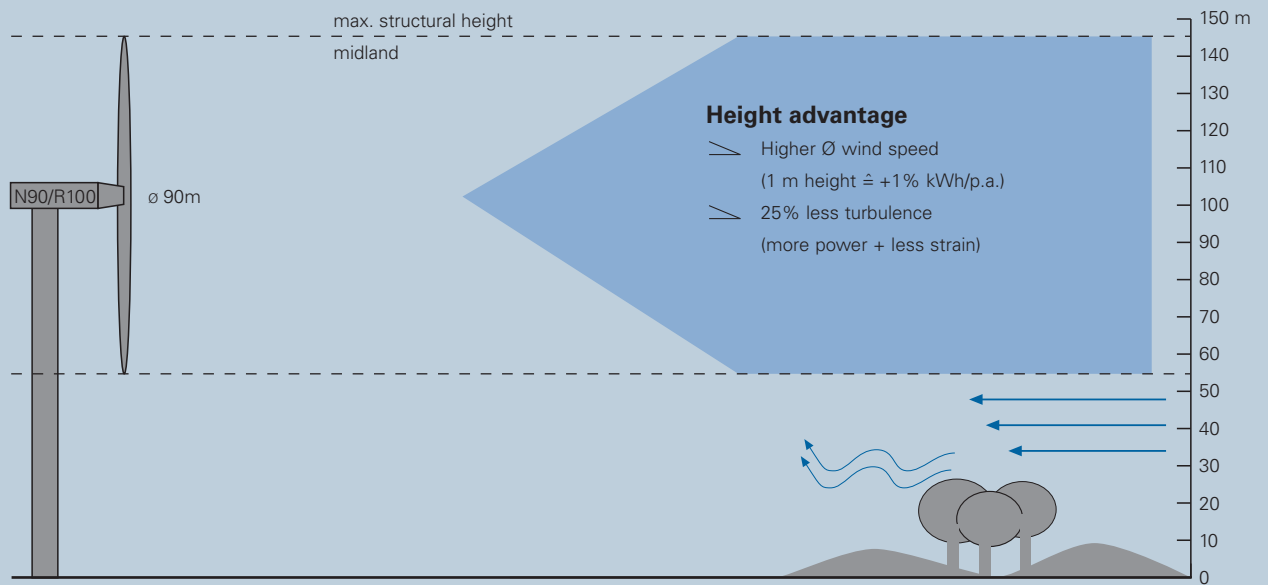
Generator

The N90/2500 is equipped with a double-fed asynchronous generator. Nordex has been successfully using this type of generator for variable-speed machines for many years. The principal advantage of this generator is that only 25 to 30 per cent of the energy created has to be fed into the electricity grid via a converter. This means that installing this type of generator/converter system reduces the total cost of the wind power system.

The heat in the generator is transferred via an integrated (closed) air-cooling circuit to an air/water heat exchanger attached to the generator. This means that the generator is more effectively cooled than in a water-jacket cooled generator as the air is able to flow through the rotor and safely and rapidly dissipate the heat generated there. The cooling water is then led to an active water/air heat exchanger outside the nacelle using a maintenance-free centrifugal pump. This pump is switched on as soon as the temperature of

the cooling water exceeds a defined limit. This cools down the water in the cooling circuit, and consequently that in the generator, to the optimal operating temperature.

The N90/2500 is operated using a newly developed active drivetrain damping system. This intelligent control system makes it possible to operate the machine at a reduced load.



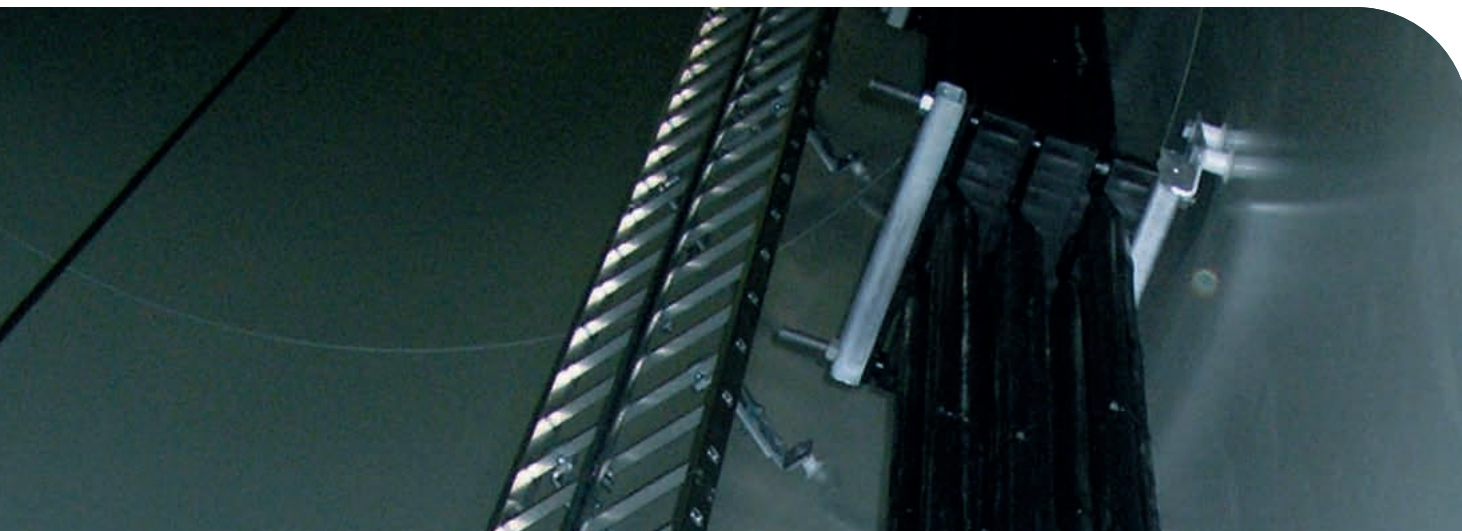
TOWER CONCEPT.

Modern wind turbines are becoming taller and taller. There are good reasons for this: high above the ground the wind always blows more strongly and more constantly. Due to turbulence resulting from obstacles on the ground (roughness length) the wind quality improves with increasing height, above all inland. Apart from the tower costs, building permission often means that the limits for adjusting the hub height are very tight. Typical construction height limits are between 80 and 100 m. In Germany hub heights of more than 100 metres are becoming increasingly popular. This is why Nordex is initially offering the N90/2500 with hub heights of 80 and

100 metres. This puts the rotor sweep in the height range of 55 to 145 metres (100 m tower) or 35 to 125 metres (80 m tower). The 100-metre tower is ideal for inland locations whereas the 80-metre tower is more suitable for locations near the coast. Also a tower with a hub height of 120 metres is available.


Tower features:

Inside the 100 m tower there are the lift and working platforms. As an option it is possible to supply a tower with an integrated transformer. Corrosion protection of the tubular tower is achieved by means of an epoxy resin coating on the surface.



High energy yield also in midland due to large hub heights.



 View into a tower at the installation phase.



Remote monitoring in Rostock.



SYSTEM CONTROL.

Operation control of the N90/2500 is effected using Nordex Control 2 (NC2). This software and hardware controls individual wind turbines as well as wind farms or the interconnected power plants of decentralised power utilities. NC2 continuously evaluates all the operating and climatic data measured, ensuring that the turbine operates with optimum yield. To do this, Nordex adapts each control system with parameters specific to the machine and location. The wind turbine works with two measuring instruments to record the wind speed and direction. The first is used for control while the second monitors the first unit. If one of the measuring instruments breaks down, the other is used for controlling.

What does this mean in practice? If there is no wind, the turbine remains at rest (energy-saving mode) and only the control computer works, collecting the climatic data. The other systems are only switched on when required, meaning that no electricity is used. The exceptions are those functions of relevance to safety, such as the brake system. Once the cut-in

wind speed (3 m/s) is reached, the turbine changes to "operation" mode. Now all the systems are tested and the nacelle aligns itself with the wind direction. The rotor blades are pitched to the starting position so that the wind can start the rotor rotating. As the wind gets stronger, the rotor begins to turn faster. Once the defined synchronisation speed has been achieved, the generator is connected to the grid and the turbine produces electricity. During operation the nacelle constantly follows the wind direction. If the cut-out wind speed (25 m/s) is exceeded, the system is stopped by turning the rotor blades through 90° in the direction of the wind. Then the rotor slows down.

The operation control system offered can easily be integrated in the Nordex modular SCADA system. On request, all existing wind farm management systems can also be implemented. This system level also has the same user interface as all other turbines with an NC2 control system and is ideally suited for its own modular overall system.



Your benefits at a glance:

- Secure annual yields thanks to the full-service concept
- Short reaction time ensured by service network and expert remote monitoring
- High level of staff qualification thanks to company's own academy



NORDEX SERVICE.

A secure and high level of technical availability is the key to every operator's investment in a wind turbine. After all, the machine should produce high yields over a useful life of at least 20 years, ensuring a high return on capital. Nordex ensures this by means of high product and manufacturing standards (ISO 9001). On the other hand, Nordex offers a comprehensive range of services. This multistage service range is divided into three packages: Premium, Extended and Basic. Premium customers have the highest degree of security that they will be able to realise the technically possible annual yield. Only the risk of poor

wind conditions or damage resulting from force majeure are not covered by Nordex. And if a customer does not wish to be responsible for technical operation of the turbines, he can assign this task to Nordex. Nordex then takes direct charge of operation management and supplies all the commercially relevant data. The Service division looks after the majority of the wind turbines erected by Nordex in the past 20 years: by means of remote monitoring and for local maintenance work and rapid service activities using a dense global network of service stations geographically located to be close to the wind farms they

are responsible for. In this way the service network grows with the number of turbines installed and supported. The service staff are continuously trained in the company's own academy. This academy has also achieved success in training new staff or teaching technical innovations and developments.

PERFORMANCE	PREMIUM	EXTENDED
Service/maintenance of all components, incl. the tower	yes	yes
24-hour remote monitoring	yes	yes
Repair work	all repairs excl. damage by third parties or force majeure	up to EUR 2,000 per annum (net)
Availability guarantee	96% (wind farm) or 95% (individual turbine in GER)	96% (wind farm) or 95% (individual turbine in GER)
Technical operation management	optional	no
Lifetime	9 + 3 years	6 + 3 years

Service contracts for N90 customers.



Conclusion

Windmills USA, in partnership with the Seminole Tribe of Florida, Inc and Nordex AG, are pleased to work with your Tribe in the Development of a Wind Energy Park on your reservation lands. Our team has the proven capability and resources to make this program happen so that your tribe and its members can benefit from long term cash flow, employment opportunities, and a strong relationship in the diversification of your economic activities. The development of a Wind Energy park requires the successful cohesion of many different elements in the process starting with positive and strong Tribal cooperation through feasibility, grid access, construction, operation and ongoing maintenance. Our team looks forward to combining our efforts with yours toward the successful development and completion of a Wind Energy Park.

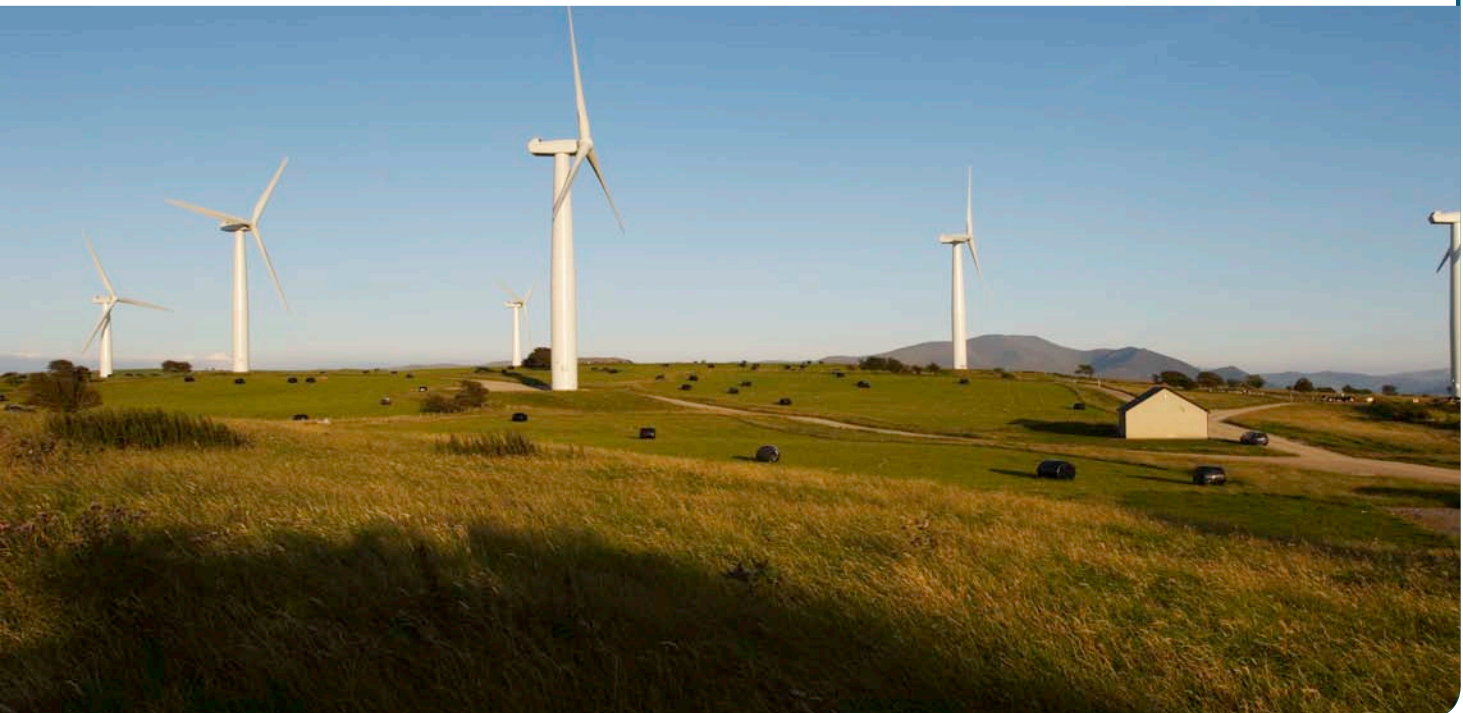
Our success will provide many benefits for our team members while at the same time adding to the quality of life for us all by providing a renewable source of "Green Energy".

With the above in mind, we share a mutual enthusiasm for our success.

**WindmillsUSA, The Seminole Tribe of Florida, Inc. and
Nordex AG**
**Your partners in providing clean "Green Energy", jobs and
revenues for your Tribe!**

Ten Steps to Success for Wind Energy on Tribal Lands

1. Telephone pre-meeting completion of Wind energy park questionnaire.
2. Preliminary meeting to discuss and present the Windmills USA concept and procedure.
3. Establish a working agreement between Tribe and WindmillsUSA
4. Perform preliminary evaluation of applicability to Tribal lands (Site Review)
5. Develop Lease Agreement to commence based on favorable wind feasibility tests, soil tests, and economic studies
6. Conduct wind, economic, environmental and feasibility studies
7. Obtain permits, funding, agreements and approvals to initiate Wind Park
8. Begin Construction
 - a. Employ workers
 - b. Assemble and/or manufacture components
9. Create Management and Maintenance teams
10. Begin Energy production
11. Distribute Lease Revenues



Native American Reservation Site Review for a Wind Energy Park

The following questionnaire should be completed and returned to us at your earliest convenience.

It allows our group to summarize and synthesize important information relative to the establishment of a wind energy park on reservation lands. The first two sections are of particular primary importance. Please answer all questions as completely as possible.

The data provided via this questionnaire will help us evaluate your lands efficiently and provide a general conceptual idea on the detailed studies required for your site.

A copy of this questionnaire can be obtained online at www.windmillsusa.com/sitereview for easy access and completion.

About the Site (high priority):

- What are the boundaries of the land available for the project? Whole reservation? Part of it, which part?
- What is the topography or relief? Flat prairies, hills, mountains, ridges...?
- What is the land cover (crops, prairies, small scattered trees, forest...)?
- Is the site easy to access, is there a steep slope?
- Are there relevant obstacles in the vicinity of the site (such as big hills, big forests, cities, towers...)? Where are they located?
- What is the nature of the soil? Is it clay, sand, wetlands, rocks...?
- Are there scattered houses or structures in the project area? How many?
- Create photos, in all directions, if possible.
- GPS coordinate values associated to each photo.

About the Wind (high priority):

- Is there any metrological mast installed? How many?
- For how long have they been installed?
- What size? What type (tubular, latticed...)?
- How is it equipped? (How many anemometers, wind vanes...what are the type, mounting height, brand, orientation of this equipment)?
- Please take photos of the equipment if possible with GPS coordinate values.
- Who installed them? Who makes the equipment?
- Who owns the data? Are there any wind reports made? By whom? – If there are, how is access to the reports & data obtained?

About the grid connection (medium priority):

- Are there any existing substation/transmission lines in the vicinity of the project area?
- Which utility owns/operates this equipment?
- Is there a new grid investment planned yet?
- Has any application to the grid connection queue been made already (with reservation fee)?

About land rights (medium priority):

- Who provides permission to use the land?

About the project development (medium priority):

- If the project is already in an advanced stage, has a fatal flaw analysis been conducted?
- What federal/state/county/local approvals are required if any?
- Is there a permitting process defined?
- Has any environmental impact study been conducted or required?
- Are there any existing local ordinances concerning wind farms? If yes, what are the setbacks to dwellings, roads, plants, cattle...?
- Are there any other wind farms in operation/under construction/in project in the vicinity of the area?

About the Tribe (medium priority):

- What is the reservation acreage?
- How many enrolled members are there? How many are living on reservation?
- What is the population?
- How is the Tribal Council composed? How many members? How long are the terms and when are they elected?

In Partnership with Seminole Tribe of Florida, Inc. and Nordex AG



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