



American Wind  
Energy Association

## WIND ENERGY: AN UNTAPPED RESOURCE

The United States has tremendous wind energy resources. Although California gave birth to the modern U.S. wind industry, 16 states have greater wind potential.

Installed wind energy generating capacity now totals 9,149 MW, and is expected to generate about 24.8 billion kWh of electricity in 2006. However, that is still less than 1% of U.S. electricity generation. By contrast, the total amount of electricity that could potentially be generated from wind in the United States has been estimated at 10,777 billion kWh annually—three times the electricity generated in the U.S. today.

These new wind farms demonstrate how wind energy can help meet the nation's growing need for affordable, reliable power. With continued government encouragement to accelerate its development, this increasingly competitive source of energy will provide at least six percent of the nation's electricity by 2020 and revitalize farms and rural communities – without consuming any natural resource or emitting any pollution or greenhouse gases.

**THE TOP TWENTY STATES** for wind energy potential, as measured by annual energy potential in the billions of kWhs, factoring in environmental and land use exclusions for wind class of 3 and higher.

1	North Dakota	1,210	11	Colorado	481
2	Texas	1,190	12	New Mexico	435
3	Kansas	1,070	13	Idaho	73
4	South Dakota	1,030	14	Michigan	65
5	Montana	1,020	15	New York	62
6	Nebraska	868	16	Illinois	61
7	Wyoming	747	17	California	59
8	Oklahoma	725	18	Wisconsin	58
9	Minnesota	657	19	Maine	56
10	Iowa	551	20	Missouri	52

Source: *An Assessment of the Available Windy Land Area and Wind Energy Potential in the Contiguous United States*, Pacific Northwest Laboratory, 1991.

For more information, see AWEA's web page at <http://www.awea.org>.

## Turbines Available

	<b>Nordtank 150</b>	<b>Micon 108</b>	<b>Nordtank (50) or (65)</b>
Condition	Re-manufactured (NREL)*	Re-manufactured (NREL)*	Re-manufactured (NREL)*
Output	150 Kw	100 Kw	50 Kw or 65 Kw
Phase	3 phase	3 phase	Single or 3 phase
Tower	Tubular 75 ft	Tubular 80 ft	Tubular 80 ft
Generator	Induction 150kw	Induction 100 kw	Induction 50 or 65 kw
Generator RPM	1,800	1,200	900 or 1,200
Blades	Stork	Arrow Star	Arrow Star
Rotor	3 blade 68 ft diameter	3 blade 70 ft diameter	3 blade 54 ft diameter
Rotor speed	46 rpms	46 rpms	36 or 46 rpms
Cut in speed	8 mph	8 mph	8 mph
Cut out speed	None (auto stall)	None (auto stall)	None (auto stall)
Survival speed	120 mph	120 mph	120 mph
Controller	PLC Based Computer	PLC Based Computer	PLC Based Computer
Internet access control	Yes	Yes	Yes

- **NREL (National Renewable Energy Lab) – Remanufactured to NREL standards**
  - 1. Modern computer controller
  - 2. New wiring
  - 3. New Yaw motor
  - 4. Rebuilt Yaw box including bearings and seals
  - 5. Rebuilt Nacelle Yaw bearing
  - 6. Rebuilt main gear box including bearings and seals
  - 7. Rebuilt braking system
  - 8. Rewound motor with new bearings
  - 9. Remanufactured blades (lead-lag testing, root repack, repainted, blade tip rebuilt matched and balanced)
  - 10. Tower and Nacelle cleaned and painted white inside and out

# **N-150 3 phase**

**Located Great Bend Feeding Inc**  
**355 NW 30 Ave**  
3 West, 2 North of Great Bend, KS



# Projected Yearly Turbine Output

Turbine	Nordtank 150	Micon 108	Nordtank 65	Nordtank 50	Storm Master 15	Bergey 10kw
	3 phase	3 Phase	3 Phase	1 Phase	1 Phase	1 Phase
<b>Power Output KWH</b>						
<b>40 % Production</b>	525,600	350,400	227,760	175,200	53,611	35,040
<b>30 % Production</b>	394,200	267,800	170,820	131,400	40,208	26,280
<b>Income 40% Production</b>						
<b>\$.04 per KWH</b>	\$21,024	\$14,016	\$9,110	\$7,008	\$2,144	\$1,402
<b>.05</b>	26,280	17,520	11,388	8,760	2,680	1,752
<b>.06</b>	31,536	21,024	13,665	10,512	3,217	2,102
<b>.07</b>	36,792	24,528	15,943	12,264	3,573	2,453
<b>.08</b>	42,048	28,032	18,220	14,016	4,289	2,803
<b>.09</b>	47,304	31,536	20,498	15,768	4,825	3,154
<b>.10</b>	52,560	35,040	22,776	17,520	5,361	3,504
<b>Income 30% Production</b>						
<b>\$.04 Per KWH</b>	\$15,768	\$10,712	\$6,383	\$5,256	\$1,608	\$1,051
<b>.05</b>	19,710	13,390	8,541	6,570	2,010	1,314
<b>.06</b>	23,652	16,068	10,249	7,884	2,412	1,577
<b>.07</b>	27,594	18,746	11,957	9,198	2,815	1,840
<b>.08</b>	31,536	21,024	13,665	10,512	3,217	2,102
<b>.09</b>	35,478	24,102	15,374	11,826	3,619	2,365
<b>.10</b>	39,420	26,780	17,082	13,410	4,020	2,628
<b>Income Production Tax Credits \$0.019</b>						
<b>40 % Production</b>	\$9,986	6,658	4,327	3,329	1,019	667
<b>30 % Production</b>	\$7,490	5,088	3,246	2,497	764	499
Prices subject to change based on turbine availability						
<b>Unit Price</b>	\$175,000				<b>Unavailable</b>	<b>\$50,000 +</b>

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