

---

References (extract february 2009)

# TÜV NORD in Wind Energy



TÜV®

**TÜV NORD**

## References

# Certifications & Type Approvals

Client	Type of Turbine	Rotor Blade	Hub Height	Guideline	Date
<b>Airwerk</b>	MD77 lattice tower		112 m	DIBt II	2004
<b>Conergy/PowerWind</b>	6 AC			DIBt	2007
	PW 56		59/71 m	DIBt III/IEC IIA	in progress
<b>DeWind</b>	D4-48 600 kW	RL 48	70.0 m	GL	2000/2001
	D4-48 600 kW	LM 48			
	D4-48 600 kW	ARA 48			
	D4-48 600 kW	LM 21.0	60.0m	DIBt II	2003
	D4-48 600 kW	NOI 23.3	70.0 m	DIBt II	2003
	D6-64 1250 kW	DW 62	65/91.5 m	DIBt II/IEC III/GL III	2001/2004
	D6-62 1000 kW	DW 60	68.5 m	DIBt II/GL III	2002
	D6-62 1000 kW	APX 60/LM 29.1P	68.5/91.5 m	DIBt II/GL III	2002/2004
	D6-62 1250 kW		65.0 m	GL II	2003
	D8-80 2000 kW		100.0 m	DIBt II	2003
<b>ECOTÈCNIA</b>	ECOTÈCNIA 62	LM 29.1	45 m	IEC IA	2006
	ECOTÈCNIA 1670	LM 37.3	70 m	IEC IIA	2003
	ECOTÈCNIA 74	LM 37.3	56/60/70/80 m	IEC IIA	2006-2008
	ECOTÈCNIA 80	LM 37.3	70 m	IEC IIIA	2004/2008
	ECOTÈCNIA 80	LM 37.3	80 m	IEC IIA/IEC IIIA	2006/2008
	ECOTÈCNIA 80	LM 37.3	60 m	IEC III A	2008
	ECOTÈCNIA 80 (Badaia)	LM 37.3	60 m	site specific/IEC III A	2007
<b>ENERCON</b>	E-30	E30-4	44 m	GL I	2003
	E-30	E30-5		IEC II/NVN II	2004
	E-33	E30-5	49/50 m	IEC II/NVN II/DIBt	2004/2008
	E-40	E40-6	45/50/65 m	NVN II/IEC II	2003/2007
	E-40	E40-41	40-68/74 m	GL I/GL II	2003/2004
	E-40		63 m	DIBt	2004
	E-44		56 m	IEC IA	2006
	E-48		50/57/74 m	IEC II/NVN II/DIBt	2004-2008
	E-58		56 m	IEC/NVN	2004
	E-66			GL I	1998
	E-66		58/63/65 m	IEC II/NVN II/DIBt	2002/2003
	E-66		65-112 m	DIBt	2004
	E-66 18.70/20.70			NVN II/IEC II	2003
	E-70	E70-4	64/78 m	IEC I/NVN I	2004/2006
	E-70		56.6 m	IEC/DIBt	2005
	E-82		83/97/107/137 m	IEC/DIBt / NVN / EN	2006/2007
	E-112		95/140 m	Site specific	2003/2005
	E-126	E126-4	116 + 136 m	Site specific/DIBt	in progress
<b>Gamesa</b>	G-52	Gamesa 25.3	44/49/55/65 m	IEC IA	2007
	G-58	Gamesa 28.3	44/55/65 m	IEC IIIB	2007
<b>GE Wind</b>	GE 1.5xle			IEC IIIB	2008
<b>IMPSA</b>	IWP 70			IEC IA	in progress
	IWP 77			IEC IIA	in progress
<b>MADE</b>	AE-61	LM 29.1	60 m	GL II	2008
	AE-61	LM 29.1	55/60 m	GL I/GL II	2008
<b>NORDEX Energy GmbH</b>	S46		60/74 m	DIBt	2004
	N50p/S50		74 m	DIBt III/IEC II/GL II	2001
	N60 R46	LM29	46/60 m	DS 1	2002
	N60 R60	LM29	60 m	DS 1/DIBt III	2002
	N60 R65	LM29	65 m	DIBt III	2002
	N60 R69	LM29	69 m	DIBt III	2002
	N60 R60	LM29.1	60 m	IEC I	2004

Client	Type of Turbine	Rotor Blade	Hub Height	Guideline	Date	
<b>NORDEX Energy GmbH</b>	N62 R69	LM29.1	69 m	DIBt II	2002	
	S70/77	NOI 34/37.5	65/85/100 m	DIBt II	2003/2005	
	S77 R80	LM 37.3	80/85/90 m	DIBt II	2004/2005	
	N80 R60	LM 38.8	60 m	IEC I/DIBt III	2002/2003	
	N80 R80	LM 38.8	80 m	Site specific	2003	
	N80 R80	LM 38.8	80 m	DIBt III/IEC I/NVN I	2003-2005	
	N80 R90	LM 38.8	90 m	DIBt	2004	
	N80 G105/N90 G105	LM 38.8/LM 43.8	105 m	DIBt II	2003/2005	
	N90 R80	LM 43.8	80 m	DIBt III	2004	
	N90 R100	LM 43.8	100 m	DIBt II	2004	
	N90 R120	LM 43.8	120 m	DIBt	2006	
	N90/2300	LM 43.8/NR 45	70/100 m	IEC IIA/IEC III A	2007	
	N90/2500	NR 45	80/100 m	IEC IB + IIA/DIBt/NVN/DS	2006-2008	
	N90/2500 (50/60 Hz)	LM 43.8	75/80/100 m	IEC IB + IIA + IIIA/DIBt/NVN/DS	2006-2008	
	N100	LM 48.8	100 m	DIBt II/IEC IIIA	in progress	
	N90 2500 HS	LM 43.8P R80MT	80 m	IEC I B	2009	
	<b>REpower</b>	MM 70		55/80 m	IEC I/IEC II	2005
		MD 70/77		90/100 m	DIBt	2004
		MM 82		80 m	DIBt/IEC II	2004
MM 92		LM 45.3	68.5/80/100 m	DIBt III/I/IEC II/IIIA	2005-2007	
MM 92		RE 45.2	68.5/80/100 m	DIBt/IEC/IEC IIA	2007	
MM 92 Goodnoe Hills (USA)		LM 45.3	80 m	site specific/IEC II A	2007	
3.XM		RE 50.8	80 m	IEC IIA/DIBt IV	in progress	
<b>SeeBA</b>	F56 lattice tower		71 m	DIBt	2005	
	MD 77 lattice tower		96.5/115 m	DIBt	2004	
	V 60 lattice tower		117 m	DIBt	2008	
<b>Siemens Windpower</b>	600 kW	LM 19	58 m	DIBt	2004	
	1.3 MW	LM 29	68/80/90 m	DIBt	2004	
	2.0 MW		60/90 m	DIBt	2005	
	2.3 MW		80/98/100 m	DIBt	2004	
	2.3 MW		58.5/88/90/93/103 m	DIBt	2005/2006	
	3.6 MW		80/107 m	DIBt	2005/2006	
<b>VENSYS Energy AG</b>	Vensys 64	ARA 64	85 m	DIBt II	2005	
	Vensys 77	APX70 LM34/37.3	61.5/80/100 m	DIBt II + III/IEC II + III/ IEC IIA + IIIA	2007	
	Vensys 77			GL III A	2008	
	Vensys 90	LM 43.8	80/100 m	DIBt II/III + IEC II/III	in progress	
	Vensys 100	LM 48.8	80/100 m	DIBt II/III + IEC II/III	in progress	
<b>WinWind</b>	WWD1	EU 30	66/70 m	IEC III	2002/2006	
	WWD3		90 m	Site specific	2005	
	WWD3		88/90/100 m	IEC IIIA	2007/2008	
<b>W2E Wind to Energy GmbH</b>	W8x/W93-2.0 MW	WN 453	85 m	GL IIA/IEC IIA/DIBt III A	2008	
	FL2500-100/					
	W2E-W100 2.5MW	LM 48.8 P	85/100 m	GL IIIA/EN IIIA	2008	
	W9x	LM 48.8	117/141/160 m	IEC/GL III A/DIBt II A	in progress	

## References (extract)

# Site Assessments, Inspection & Consultancy

Client	Country	Service	Date
Enertrag Energiebau GmbH	France	Site Specific Statement	2001
Nordex	China	Site Specific Statement	2001
DeWind	Japan	Turbulence Report	2002
Nordex	Netherland	Impact of a tank farm on wind profile/CFD	2002
Nordex	Norway	Wind inclination at a cliff/CFD	2002
Nordex	Australia	Site Specific Statement	2003
Nordex	Ireland	Turbulence Report	2003
Nordex	Norway	Turbulence Report for a site with 80 wind turbines	2003
Enairgy	Austria	Risc due to ice-shedding for a site located in the Alps	2003
Municipal Emden	Germany	Risc due to blade-failure for a dike, street and an adjacent industrial area	2003
Ökostrom Consulting Freiburg GmbH	Germany	Risc due to blade-failure and ice-shedding for a cable car	2003
DeWind	Ireland	Turbulence Report	2004
REpower	Germany	Risc due to blade-failure for an adjacent nuclear power plant	2004
Essent Wind Deutschland GmbH	Germany	Blade failure due to overspeed of a ENERCON E-112 wind turbine	2004
DeWind	United Kingdom	Turbulence Report	2004
Nordex	Estonia	Site Specific Statement	2004
EBV Management Holding AG	Germany	Impact of wind turbine wake on a power line/CFD	2004
e.n.o. Energiegesellschaft Nordost mbH	Germany	Turbulence Report	2005
WSB Planung GmbH & Co. KG	Germany	Turbulence Report	2005
Energie-Projekt-Nord GmbH	Bulgaria	Turbulence Report	2006
BOREAS Project GmbH	Germany	Turbulence Report	2006
Denker & Wulf AG	Germany	Turbulence Report	2006
REpower	United Kingdom	Wind inclination/CFD	2006
Fuhrländer	Polen	Site Class Study	2007
DeWind	Germany	Comparison reinforced concrete	2007
REpower	Italy	Wind Condition Evaluation Report	2007
Plambeck Neue Energien AG	Germany	Turbulence Report	2007
WeserWind	Germany	Offshore Product Certification	2007
REpower	United Kingdom	Wind Condition Evaluation Report	2007
I'REE	South Korea	Annual Energy Production Study	2007
REpower	Australia	Wind Condition Evaluation Report	2007
WPD	Germany	Turbulence Report	2007
AREVA Renewables	France	Technical Due Diligence	2007
Babcock & Brown	Germany	Final Inspection	2007
REpower	Poland	Wind Condition Evaluation Report	2007
Eole	France	Windpotential Study	2007
REpower	U.S.A.	Site Specific Statement	2007
REpower	USA	Wind Condition Evaluation Report	2008
REpower	Australia	Wind Condition Evaluation Report	2008
ABO Wind	Ireland	Turbulence Report	2008
ABO Wind	France	Turbulence Report	2008
ABO Wind	Spain	Turbulence Report	2008
ENERTRAG	Germany	Due Diligence	2008
BSU / Vattenfall	Germany	Wind farm configuration optimisation	2008
Agro	Germany	Shadow Flicker Analysis	2008
Wallenborn Projektentwicklung	Croatia	Turbulence Report	2008
REpower/EdF	Canada	Wind Condition Evaluation Report	2009
Energiekontor	Germany	Turbulence Report	2008
Essent	Germany	Turbulence Report	2008
I'REE	South Korea	Annual Energy Production Study	2008
Tomis Team/Cube Engineering	Poland	Construction inspections on foundations	2009
E.on Climate Ren.	France	Soil Assessment	2008
E.on Climate Ren.	Poland	Soil Assessment	2008

### TÜV NORD Group

Department Dynamic Systems

Große Bahnstraße 31 · 22525 Hamburg · Germany

Tel.: +49 (0)40 8557-2417 · Fax.: +49 (0)40 8557-2552

windenergy@tuev-nord.de · www.tuev-nord.de

