

Dynamics Model Register

This document outlines the current status of the wind turbine generator dynamic models with respect to the Planning Code Appendix of the Grid Code.

The relevant sections of the **Planning Code Appendix** (PCA4.10.1) can be found here¹.

All transmission and distribution connected wind farms greater than 5 MW are required to submit with their application a dynamic model in compliance with PCA4.10.1. 2.

Wind farms which had 'live' connection offers or had signed connection agreements as of the 9th July 2004 are required by CER Direction CER/04/245 9th July 2004 to provide the dynamic model no later than 120 business days prior to their scheduled date of connection to the power system. The CER Direction CER/04/245 can be found here².

This document lists the models that have been provided to EirGrid and assesses their compliance with the Planning Code Appendix (PCA4.10.1. 2).

Please note all dynamic models must be compliant with PSS/E versions 29 and 30.

¹ <http://www.eirgrid.com/EirGridPortal/uploads/Regulation and Pricing/MPID 126 Approved.pdf>

² <http://www.eirgrid.com/EirGridPortal/uploads/Regulation and Pricing/Wind Connection Policy - cer04245.pdf>

Manufacturer	Model	MW Size (MW)	Version Number	Compliant with Grid Code (Note1)	Reason for non compliance	Remark
Siemens - Bonus	1.3 MW	1.3	Ver_09	✓		Received a new version 9 of the model which solved the non convergence issue.
	2.3 MW	2.3	Ver_09	✓		Received a new version 9 of the model which solved the non convergence issue.
	3.6 MW	3.6	Ver_1	✓		Comments on this model have been sent to Siemens.
	2.3 MW (82 m rotor diameter)	2.3				This converter fed model was received from Siemens on the 01/12/06. Some minor issues with this model have been referred to Siemens.
	2.3 MW (93 m rotor diameter)	2.3				This full converter model was received from Siemens on the 01/12/06. Some minor issues with this model have been referred to Siemens.
DeWind	D6 1.25 MW	1.25	Ver1.2	✓		

Manufacturer	Model	MW Size (MW)	Version Number	Compliant with Grid Code (Note1)	Reason for non compliance	Remark
DeWind	D8 2 MW	2	Ver1.2	✓		
Enercon	E40	0.6	Ver 5.3	✓		
	E48	0.8				
	E66	2.0 /2.3				
	E70	2 /2.3				
Enercon	E44	0.9	Ver 5.3			This model version was received on 12/07/06. This model has not been tested.
Gamesa	G5X (G52 & G58)	0.85	Ver5.2	✓		
	G8X	2	Ver5.3	✓		
GE	1.5 MW	1.5	Ver1.0.0	✓		
	3.6 MW	3.6	Ver1.0.0	✓		

Manufacturer	Model	MW Size (MW)	Version Number	Compliant with Grid Code (Note1)	Reason for non compliance	Remark
Nordex	N80	2.5	Ver1.05	-		Awaiting new model from Nordex.
Vestas	V47	0.66		✓		New model received from PTI on 15/10/06. Preliminary tests have been carried out on the model.
	V52	0.85	Ver5.4	✓ (Note2)		Vestas have engaged in meaningful discussions with EirGrid and have submitted a satisfactory proposal to develop a compliant model. EirGrid attended a workshop with Vestas on 11/12/06. Receiving monthly progress updates from Vestas.
	V66	1.75	Rev 4	✓ (Note2)		
	V80	2	Ver5.4	✓ (Note2)		
	V90	3	Ver5.4	✓ (Note2)		

Notes:

1. Compliance with the Grid Code is assessed based on the requirements of the Planning Code Appendix (PCA.4.10.1). At present, a model can be deemed compliant with PCA4.10.1 without having fulfilled the requirements of the section titled "Validation of Model" (PCA4.10.1.3)
2. The Vestas models have been deemed compliant on the basis of the "Time to Comply" clause in the Grid Code (PCA4.10.1.2.6). However, these models (version 5.4) still do not fully meet our requirements and cannot be viewed as a long term solution.