VORYS

Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
P.O. Box 1008
Columbus, Ohio 43216-1008

614.464.6400 | www.vorys.com

Founded 1909

Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

March 23, 2017

VIA HAND DELIVERY

Mr. Jon R. Whitis
Ohio Power Siting Board
180 E. Broad St., 6th Floor
Columbus, OH 43215-3793

Re: OPSB Case No. 17-759-EL-BGA
Correspondence from Turbine Manufacturers

Dear Mr. Whitis:

Please find attached correspondence from Senvion regarding the Senvion 3.0 MW and 3.4 MW versions of the M122 turbine model, and correspondence from Nordex regarding the 2.4 MW and 3.6 MW versions of the N117 turbine model.

Please call if you have any questions regarding the attached correspondence.

Very truly yours,

Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorneys for Hardin Wind LLC

MJS/jaw
Enclosure

cc: Ms. Barcy F. McNeal, Secretary - Docketing

SENVION

Everpower Wind Holdings Inc.
1251 Waterfront Place, 3rd Floor
Pittsburgh, PA 15222
Attn. J. Sardonia / S. Wilmore

Similarities and differences of Senvion 3.0M122 and 3.4M122 wind turbine generator systems

To Whom It May Concern,

The purpose of this letter is to provide a statement in regards to the similarity of the "Senvion 3.0M122" wind turbine generator system (WTGS) and the power upgraded version called "Senvion 3.4M122".

Both variants are part of our "3.XM platform" which share many similar components and sub-systems like the main frame, nacelle housing, hub assembly, SCADA etc. The Senvion 3.4M122 is an evolutionary upgrade to the 3.0M122 with very minimal internal changes. All dimensions of the WTGS remain the same (hub height, tip height, blade length, etc.) as well as identical mechanical components (e.g. blades, main frame, nacelle housing, tower structures, etc.).
The main differences are in the internal electrical system,

- which has been upgraded from a Double-Fed Induction Generator (DFIG) to a Squirrel Cage Induction Generator (SCIG)
- and from a partial converter system to a full converter system

These upgrades enable an increased nameplate capacity of 3.4MW and feature more advanced grid support capabilities which make it easier to integrate the WTGS into the electrical grid. While these changes are all internal, they cannot be noticed from the outside of the WTGS, nor will they change the appearance of the WTGS.

Please contact us if you have any questions.

Yours sincerely,

Chris Cyrillus
Head of Engineering North America
Senvion USA Corp.
Chris.Cyrillus@senvion.com
(303)-328-3202

Oliver Kijas
Head of Sales US
Senvion USA Corp.
Oliver.Kijas@senvion.com
(303)-881-4051

NORDEX
We've got the power.

Nordex USA, Inc.
300 South Wacker Drive, Suite 1500
Chicago, Illinois 60606, USA

Monday 20 March 2017

Similarities between the N117/2400 and N117/3600

To Whom It May Concern,

We are pleased to provide you with this summary of the main similarities and differences between two of our available turbine models – The N117/2400 Gamma on a 91 meter tower, and the N117/3600 Delta on a 91 meter tower. Nordex has always maintained a design philosophy of evolutionary improvements, and we have kept our underlying design principals the same since our first multi-megawatt turbine in 2002. This has allowed us to gain a long history of experience with the technologies which are most common in our industry today. Some examples of this are our doubly-fed induction generator with "type 3" converter and low voltage electrical system, our multiple stage planetary gearbox, electrical pitch and yaw systems, and tall steel towers. We have kept these major design concepts the same across all of our offered products since the early 2000's, and both of our N117 models use them as well. So in regard to overall technological concept, they are very similar machines. Both models have an extensive track record, each with over 1,000 or more units deployed across the globe, and both have demonstrated quality, compliance and superb reliability in a vast variety of markets.

The N117/2400 is part of our "Gamma Generation", which is the 3rd release of this technology, and the N117/3600 is part of our "Delta Generation", which is the 4th release. Both machines have identical overall size dimensions, with a tip height under 500 feet. They both use 89m towers that are 4m in diameter, and 116.8 m rotors. Both models also have the same sound emission profile, with low tip speeds, which allows us to guarantee a sound power level less than 105 dB. The main difference between these two generations is the generator capacity. We have increased the maximum production capacity so each machine can produce more, but this has the benefit of allowing an increased electrical capability. For example, the N117/2400 Gamma was capable of a +/- 0.95 power factor range, while the N117/3600 is capable of +/- 0.90. The Delta can also ride through a wider range of grid conditions, which allows it to better support and stabilize the local electrical system.

There are some other minor differences which were made to the internal components, such as an increased gearbox size, a few additional power cables inside the tower. However, to an external observer, these machines will look, act, and operate nearly identically. Please don't hesitate to contact us if you would like any additional details.

Yours truly,

A D Edelson

Aaron Edelson
Sr. Sales Engineer
Phone: +1 (312) 608-5021
Email: AEdelson@nordex-online.com

Summary: Correspondence from Turbine Manufacturers electronically filed by Mr. Michael J. Settineri on behalf of Hardin Wind LLC