

**Internal distribution code:**

- (A)  Publication in OJ  
(B)  To Chairmen and Members  
(C)  To Chairmen  
(D)  No distribution

**Datasheet for the decision  
of 16 May 2013**

**Case Number:** T 1444/11 - 3.2.04

**Application Number:** 05000115.5

**Publication Number:** 1561945

**IPC:** F03D 9/00, H02P 9/04,  
G05D 19/02

**Language of the proceedings:** EN

**Title of invention:**  
Variable speed distributed drive train wind turbine system

**Applicant:**  
Clipper Windpower, LLC

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 123(2)  
EPC R. 115(2)

**Keyword:**  
"Added subject-matter - main and auxiliary request (yes)"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 1444/11 - 3.2.04

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.04  
of 16 May 2013

**Appellant:** Clipper Windpower, LLC  
(Applicant) 6305 Carpinteria Avenue, Suite 300  
Carpinteria CA 93013 (US)

**Representative:** Zenz  
Patent- und Rechtsanwälte  
Rüttenscheider Straße 2  
D-45128 Essen (DE)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 21 December 2010  
refusing European patent application  
No. 05000115.5 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** C. Scheibling  
**Members:** J. Wright  
T. Bokor

## Summary of Facts and Submissions

I. This appeal is against the decision of the Examining division dated 21 December 2010 to refuse the patent application. The Appellant's notice of appeal was received on 23 February 2011 and the appeal fee was paid simultaneously. The statement setting out the grounds of appeal was received on 29 April 2011.

II. The Appellant (applicant) requests that the decision under appeal be set aside, that a patent be granted based on the set of claims of the main request filed with the grounds of appeal or on the set of claims of the auxiliary request filed (then as a main request) during the oral proceedings before the Examining division and on which the first instance's decision is based.

III. Claim 1 of the main request reads as follows

"An electric power-generating device comprising:

    a main input shaft turned by a source of energy;  
    at least one synchronous generator (106, 108, 110 or 112) operatively connected to said main input shaft, an output of said synchronous generator being AC electrical power;

    said synchronous generator selected from a group consisting of

    wound field synchronous generators wherein an exciter field is excited with a constant current and permanent magnet synchronous generators;

    a passive rectifier (114, 116, 118 or 120) connected to said output of said synchronous generator,

an output of said passive rectifier being DC electrical power; and,

an inverter (136, 138, 140 or 142) connected to said output of said passive rectifier, an output of said inverter being AC electrical power which is synchronized in frequency and voltage with a utility grid to feed its output to said utility grid;

characterized by

a first controller (132) that generates a generator torque command, said torque command calculated to result in regulating the rotational speed of the main input shaft to a desired speed determined by the first controller (132); and

a second controller (122) that controls said inverter in response to said generator torque command and produces the commanded generator torque by regulating the current in said DC electrical power output of said passive rectifier through control of said inverter."

Claim 1 of the auxiliary request reads as follows

"An electric power-generating device comprising:

a main input shaft turned by a source of energy;  
at least one synchronous generator operatively connected to said main input shaft, an output of said synchronous generator being AC electrical power;

said synchronous generator selected from a group consisting of

wound field synchronous generators wherein an exciter field is excited with a constant current and permanent magnet synchronous generators;

a passive rectifier connected to said output of said synchronous generator, an output of said passive rectifier being DC electrical power;

characterized by

one or more sensors, an output thereof being sensor information, said sensor information including turbine speed;

a first controller (132) that coordinates between torque and blade pitch and generates a blade pitch angle and torque command derived from said sensor information including turbine speed;

a second controller (122) that controls generator torque by regulating the current in said DC electrical power in response to said torque command

an inverter connected to said output of said passive rectifier, an output of said inverter being AC electrical power."

IV. The Board informed the Appellant in a communication dated 12 February 2013 that compliance of the claims of the main and auxiliary request with the requirements of Article 123(2) EPC had to be discussed inter alia during the oral proceedings before the Board scheduled for the 16 May 2013.

Although duly summoned the Appellant did not appear. He informed the Board with letter dated 11 March 2013 that he will not attend the oral proceedings. According to the provisions of Rule 115(2) EPC, the proceedings were continued without him.

V. The Appellant mainly argued in writing as follows:

The feature that the output AC power from the inverter is synchronised with a utility grid has been added into

claim 1. Support for this amendment can be found on page 10, first paragraph of the original specification, further on page 13, lines 18 to 25 as well as page 2, second paragraph.

The function of the first controller, respectively the second controller has been specified. Support for these amendments can be found on page 12, last paragraph, on page 15 second to last paragraph and on page 17, third paragraph, respectively on page 9, last line to page 10, line 16 and page 17, third paragraph.

## **Reasons for the Decision**

1. The appeal is admissible.
2. *Amendments*
  - 2.1 The independent claims of both the main request and the auxiliary request have been extensively amended with respect to the originally filed claims.  
Therefore, the compliance of these claims with the provisions of Article 123(2) EPC has to be examined.
  - 2.2 The criterion for assessing whether an amendment is infringing Article 123(2) EPC is whether the amendment can be derived directly and unambiguously from the originally filed application. In this respect, features, which can be derived by the skilled person from the original application in an obvious manner, but which are neither explicitly or implicitly present do not fulfil the above mentioned criterion. A feature is implicit when it is absolutely necessary for obtaining the expected result and when the skilled person cannot

contemplate any alternative feature for obtaining this same result.

3. *Claim 1 of the main request*

3.1 Claim 1 of the main request comprises inter alia the following feature "said synchronous generator selected from a group consisting of wound field synchronous generators wherein an exciter field is excited with a constant current and ..."

However, there is no explicit indication in the application as filed that the group of generators within which the generator of the claimed device is to be selected comprises "synchronous generators wherein an exciter field is excited with a constant current". In fact the expression "an exciter field is excited with a constant current" is not to be found in the application as originally filed.

3.2 Claim 1 also features "a first controller that generates a generator torque command ... calculated to result in regulating the rotational speed of the main input shaft to a desired speed ..."

These features concerning the first controller have no basis in the claims as originally filed. They can thus only be based on the originally filed description.

However, according to the original description the first controller (TCU 132) coordinates the control of generator torque and blade pitch in a way which maximizes the energy capture of the turbine while minimizing the mechanical loads (page 5, lines 2 to 6). Further, it is said on page 7, second paragraph, that the first controller "TCU provides a complicated, coordinated control function to both of these elements,

and does so in a way, which maximizes the energy capture of the turbine while minimizing the mechanical loads ... The TCU uses many necessary inputs to complete this coordination function between torque and pitch. Typical TCU inputs include turbine speed, blade pitch angle, tower acceleration (vibration), nacelle acceleration (nacelle vibration), wind speed, wind direction, wind turbulence, nacelle position, AC line parameters, DC bus voltage, generator voltage, power output, reactive power output, and others ..."

Finally on page 14, line 31 to page 15, line 4, it is indicated: "The TCU 132 has control of the two principle actuators on the turbine; the generators via the GCU 122, and the pitch system (PCU) 178. The TCU 132 performs a complicated, coordinated control function for both of these elements, and does so in a way, which maximizes the energy capture of the turbine while minimizing the machine's mechanical loads".

Thus, claiming a first controller which may solely control the generator torque without any indication about the blade pitch and the way it functions, i.e. so as to maximize the energy capture of the turbine while minimizing the mechanical loads results in an unallowable intermediate generalisation.

3.3 Consequently, claim 1 of the main request as amended does not fulfil the requirements of Article 123(2) EPC and already therefore, the main request must fail.

4. *Claim 1 of the auxiliary request*

4.1 Claim 1 of this request too states that the generator is selected "from a group of generators consisting of wound field synchronous generators wherein an exciter field is



excited with a constant current ..." However, this information is not directly and unambiguously derivable from the application as originally filed, as already mentioned in section 3.1 above.

4.2 Furthermore, in the characterising portion of claim 1 it is stated that "one or more sensors, an output thereof being sensor information including turbine speed". This means that in case there is only one sensor, solely the turbine speed is measured. However, there is no embodiment in the originally filed application where the first controller 132, which "generates a blade pitch angle and torque command derived from said sensor information including turbine speed", regulates solely in response to the turbine speed (see page 14, lines 25 to 31). Therefore the now claimed alternative comprising only "one sensor" has no basis in the application as filed.

3.3 Claim 1 also features "a first controller (132) that coordinates between torque and blade pitch and generates a blade pitch angle and a torque command derived from said sensor information including turbine speed". As already stated in section 3.2 above, these features concerning the first controller find no basis in the claims as originally filed. They can therefore only be based on the originally filed description. However, the broadest definition of the first controller that can be found in the original description is that given on page 5, lines 2 to 6 that reads "A Turbine Control Unit or TCU is responsible for coordinating the control of generator torque and blade pitch in a way which maximizes the energy capture of the turbine while minimizing the mechanical loads". The fact that claim 1

does not indicate in which way the control of generator torque and blade pitch is coordinated removes functional limitations to the control unit and amount thus to an intermediate generalisation of the specific type of control unit originally disclosed.

3.4 Accordingly, claim 1 of the auxiliary request as amended infringes Article 123(2) EPC and therefore, the auxiliary request must fail too.

### **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Scheibling