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**Datasheet for the decision  
of 17 November 2022**

**Case Number:** T 2711/18 - 3.5.02

**Application Number:** 11195355.0

**Publication Number:** 2607692

**IPC:** F03D9/25, F03D7/02, H02J3/16,  
H02J3/38

**Language of the proceedings:** EN

**Title of invention:**

Method for determining a voltage bounding range

**Patent Proprietor:**

Siemens Gamesa Renewable Energy A/S

**Opponent:**

Vestas Wind Systems A/S

**Relevant legal provisions:**

EPC Art. 54, 56, 83, 123(2)

**Keyword:**

Novelty - main request (no)  
Inventive step - auxiliary request (yes)  
Amendments - auxiliary request - allowable (yes)  
Sufficiency of disclosure - auxiliary request (yes)



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Case Number: T 2711/18 - 3.5.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.02**  
**of 17 November 2022**

**Appellant:** Siemens Gamesa Renewable Energy A/S  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
10 September 2018 concerning maintenance of the  
European Patent No. 2607692 in amended form.**

**Composition of the Board:**

**Chairman** R. Lord  
**Members:** C.D. Vassoille  
W. Ungler

## Summary of Facts and Submissions

I. The patent proprietor filed an appeal against the interlocutory decision of the opposition division concerning European patent No. 2 607 692.

II. The following documents are relevant for the present decision:

D1: WO 2006/037576 A1

D2: DE 41 00 064 A1

D9: EP 2 551 515 A1

III. The parties were summoned to oral proceedings. In a communication under Article 15(1) RPBA 2020 annexed to the summons, the board set out their preliminary observations on the appeal, concluding *inter alia* that the subject-matter of claim 1 appeared to be new over document D1.

IV. Oral proceedings before the board were held on 17 November 2022.

The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted (main request), or if this was not possible that the patent be maintained in the form of the first auxiliary request filed with letter of 4 October 2017.

The respondent (opponent) requested that the appeal be dismissed.

V. Claim 1 of the patent as granted (appellant's main request) reads as follows:

"Method for determining a voltage bounding range (125) defining a range of a wind turbine reference voltage (123) for a wind turbine (101) for controlling an output voltage ( $V_{\text{turb}}$ ) of the wind turbine at a wind turbine output terminal (113), the method comprising:

obtaining information regarding an electrical characteristic of a transmission line (106) connecting the wind turbine output terminal (113) to a point of common coupling (111) to which plural other wind turbines are connectable; and

defining the voltage bounding range (125) based on the electrical characteristic of the transmission line (106)."

VI. Claim 1 of the first auxiliary request differs from claim 1 of the main request in the following additional wording:

", wherein the electrical characteristic comprises a transformation ratio ( $m$ ) of a wind turbine transformer (107) connected between the wind turbine output terminal (113) and the point of common coupling (111), the transformation ratio ( $m$ ) being a ratio between a voltage ( $V_{\text{mv}}$ ) at a medium voltage side and a voltage ( $V_{\text{lv}}$ ) at a low voltage side of the wind turbine transformer (107), wherein the wind turbine output terminal (113) is connected to the low voltage side of the wind turbine transformer (107)."

Claims 2 to 12 are dependent on claim 1.

VII. Independent claim 13 of the first auxiliary request has the following wording:

"Arrangement (200) for determining a wind turbine reference voltage for a wind turbine for controlling an output voltage of the wind turbine at a wind turbine output terminal, the arrangement comprising:

a input system (201, 131, 204) adapted to obtain an operator reference voltage (203) and to obtain a measured voltage (205) indicative of a voltage at a point of common coupling (111) to which the wind turbine output terminal is connected via a transmission line;

a processor adapted to determine the wind turbine reference voltage (123) based on the operator reference voltage (203) and the measured voltage (205) such as to be within a voltage bounding range (125), wherein the voltage bounding range is defined based on an electrical characteristic of the transmission line, wherein the electrical characteristic comprises a transformation ratio ( $m$ ) of a wind turbine transformer (107) connected between the wind turbine output terminal (113) and the point of common coupling (111), the transformation ratio ( $m$ ) being a ratio between a voltage ( $V_{mv}$ ) at a medium voltage side and a voltage ( $V_{lv}$ ) at a low voltage side of the wind turbine transformer (107), wherein the wind turbine output terminal (113) is connected to the low voltage side of the wind turbine transformer (107)."

VIII. The relevant arguments of the appellant can be summarised as follows:

*Main request - Novelty in view of document D1*

The subject-matter of claim 1 was new in view of document D1. In particular, D1 did not disclose defining the voltage bounding range based on the

electrical characteristic of the transmission line. Rather, D1 on page 8, line 30 to page 9, line 10 merely disclosed a limitation, without however taking account of any electrical characteristic of the transmission line.

*Main request - Novelty in view of document D9*

The subject-matter of claim 1 was new in view of document D9. In particular, D9 disclosed measuring the voltage at only one location, namely at the point of common coupling (POCC). This was not sufficient in order to obtain information regarding an electrical characteristic of a transmission line. Rather, at least two measurements were necessary to determine an electrical characteristic of a transmission line in the sense of claim 1. This was clear from the patent in paragraphs [0013], [0014], [0023], [0041] and [0062].

*First auxiliary request - Amendments*

The subject-matter of claim 1 of the first auxiliary request did not extend beyond the content of the application as originally filed. The term "voltage bounding range" implied the existence of a range between a maximum voltage and a minimum voltage. Original claim 2 thus merely served to clarify what was already included in claim 1 of the main request. Omitting the corresponding feature therefore did not constitute an inadmissible amendment.

*First auxiliary request - Sufficiency of disclosure*

*First insufficiency objection*

The equation in paragraph [0056] of the patent was not mandatory for carrying out the invention according to claim 1. Even if the actual wind speed was not known, the skilled person could, for example, apply an average expected wind speed to calculate the actual possible maximum or minimum voltage expected from the wind turbine. The equation was also not directly related to the description in paragraphs [0062] to [0064] of the patent. In particular, paragraphs [0063] and [0064] contained sufficient information on how to determine the maximum and minimum possible voltages in relation to an off-line determination as described in paragraph [0062].

*Second insufficiency objection*

As to the invention according to claim 12 (corresponding to claim 13 as granted), it was known to the skilled person that the voltage bounding range could be maintained constant after it has been defined according to the subject-matter of claim 1. The skilled person would therefore have no difficulties in carrying out the invention according to claim 12.

*Third insufficiency objection*

As regards the disclosure in paragraph [0014] of the patent, the person skilled in the art would understand that not only measurements of current, but also further information may be comprised in the information regarding the electrical characteristics of the transmission line. The description in paragraph [0014] therefore did not prevent the skilled person from carrying out the invention.

*Fourth insufficiency objection*

As regards the invention according to claim 7 (corresponding to claim 8 as granted), the skilled person had a number of software packages available that allowed for the simulation of electrical circuits. For high power equipment, carrying out simulations formed part of the common general knowledge of the skilled person. The patent, in particular in view of the description in paragraphs [0004], [0005] and [0053] to [0066], provided sufficient information for the person skilled in the art to be able to carry out the invention.

*First auxiliary request - Inventive step*

The subject-matter of claim 1 of the first auxiliary request involved an inventive step in view of document D1 in combination with the common general knowledge of the skilled person or in combination with document D2. Pages 6 and 7 of document D1 merely disclosed that for calculating the reference voltage, transformers may be considered. Document D1, however, did not disclose a transformation ratio. Furthermore, D1 did not disclose any relationship between the voltage limiter 182 and the transformer 66. There was no hint in D1 to considering the transformation ratio of the wind turbine transformer as an electrical characteristic of a transmission line on which the definition of the voltage bounding range was based, as specified in claim 1.

The subject-matter of claim 1 was also not rendered obvious by a combination of document D1 with D2. The objective technical problem when starting from D1 and considering the distinguishing features of claim 1 was



to be considered as how to improve the control of the wind turbine and to avoid damage. The skilled person would not have considered the teaching of document D2 in order to solve this objective technical problem, because D2 was not concerned with the converter control of wind turbines. Rather, document D2 was concerned with the very specific reset-windup-effect in a control circuit. Even when combining documents D1 and D2, the skilled person would not arrive at the subject-matter of claim 1 of the first auxiliary request. In particular, neither D1 nor D2 disclosed a transformation ratio as recited in claim 1.

IX. The relevant arguments of the respondent can be summarised as follows:

*Main request - Novelty in view of document D1*

The subject-matter of claim 1 was not new in view of document D1. Document D1 on page 8, line 30 to page 9, line 10 disclosed a voltage limiter setting a limit for the reference voltage, wherein the limit was based on an electrical characteristic of the transmission line. Claim 1, without any further specification, merely recited that the voltage bounding range *was based on* an electrical characteristic of the transmission line. The disclosure of D1 therefore fell under the wording of claim 1.

*Main request - Novelty in view of document D9*

The subject-matter of claim 1 was not new in view of document D9. Document D9 disclosed measuring the voltage at the POCC, which corresponded to obtaining information regarding an electrical characteristic of a transmission line in the sense of claim 1. Furthermore,

in D9, a voltage bounding range was based on the measured POCC voltage. It was clear that a single voltage measurement at the end of a transmission line, i.e. at the POCC, was sufficient to obtain information regarding an electrical characteristic of the transmission line. According to paragraphs [0014] and [0041] and claim 11 of the patent, the voltage could be measured at the POCC in order to obtain information regarding an electrical characteristic of the transmission line. The use of the plural "voltages" in these passages could also be interpreted as referring to a plurality of measurements at different points in time and not necessarily to a plurality of measurements at different locations.

*First auxiliary request - Amendments*

Claim 1 of the first auxiliary request comprised the additional feature of original claim 4, which was originally dependent on claim 2, i.e. that the voltage bounding range is defined to be a voltage range between a maximum voltage and a minimum voltage. Omitting the feature of original claim 2 amounted to an inadmissible extension of the claimed subject-matter, because the voltage bounding range could be an open range without a minimum or a maximum voltage.

*First auxiliary request - Sufficiency of disclosure*

*First insufficiency objection*

It was not possible to determine the maximum and minimum voltage limit of the voltage bounding range based on the actually possible maximum and minimum voltage in an off-line state of the wind turbine, i.e. previous to the operation of the wind turbine, as

disclosed in paragraph [0062] of the patent. The reason was that, according to the equation in paragraph [0056] of the patent, the possible maximum and minimum voltages depended on the active power, which in turn depended on the wind speed.

*Second insufficiency objection*

The skilled person could not implement the subject-matter of claim 12 (corresponding to claim 13 as granted), according to which the determined voltage bounding range was maintained constant during operation.

*Third insufficiency objection*

Paragraph [0014] of the patent implied that information relating to current measurements may be sufficient to obtain information regarding an electrical characteristic of a transmission line. It was however not possible to define a voltage bounding range by means of only measurement data relating to a current flowing through the transmission line. The invention according to claim 1 therefore could not be carried out by a person skilled in the art.

*Fourth insufficiency objection*

The invention according to claim 7 (corresponding to claim 8 as granted) could not be carried out by the person skilled in the art, because the description in paragraphs [0032] to [0034] did not provide sufficient information of how the voltage bounding range could be defined by performing a simulation, in particular a software simulation, of electrical components connected between the wind turbine and the POCC.

*First auxiliary request - Inventive step*

The subject-matter of claim 1 of the first auxiliary request did not involve an inventive step in view of a combination of document D1 with the common general knowledge of the skilled person, as correctly found by the opposition division in the decision under appeal.

Furthermore, the subject-matter of claim 1 of the first auxiliary request did not involve an inventive step in view of the combination of document D1 with document D2. Document D1 on page 6, line 31 to page 7, line 1 disclosed the calculation of the wind turbine reference voltage based on a wind turbine transformer connected between the wind turbine output terminal and the POCC. The subject-matter of claim 1 of the first auxiliary request therefore differed from that of document D1 in that it was the voltage bounding range (and not the wind turbine reference voltage) that was based on the electrical characteristic of the transmission line, which comprised the transformation ratio of the wind turbine transformer. The objective technical problem resulting from the distinguishing feature was that of how to avoid a saturation of the controller of the wind turbine's controller. Document D2 provided a solution to the objective technical problem by providing a voltage bounding range defined by a maximal limit voltage  $x_{\max}^*(z)$  and minimal limit voltage  $x_{\min}^*(z)$ , see the equations on page 2. When transferring this teaching of D2 to the method and the arrangement disclosed in D1, the skilled person would use the difference between the wind turbine reference voltage and the actual voltage of the converter as the error variable  $e(z)$  in the equations on page 2 of document D2. The skilled person, when combining document D1 with

document D2, would thus directly have arrived at the subject-matter of claim 1.

## **Reasons for the Decision**

1. The appeal is admissible.
2. *Main request - Novelty (Article 100(a) EPC in connection with Article 54 EPC)*
  - 2.1 *Novelty in view of document D1*
    - 2.1.1 The subject-matter of claim 1 of the main request is new in view of document D1.
    - 2.1.2 Document D1 does not disclose the feature of claim 1 of defining the voltage bounding range based on the electrical characteristic of the transmission line.

In particular, document D1 on page 8, line 30 to page 9, line 10, which the respondent primarily relied on, discloses a voltage limiter for the wind turbine reference voltage. This passage indicates that the voltage limiter serves to take account of different transmission conditions with respect to different wind turbines. However, it does not directly and unambiguously disclose that a voltage bounding range is in fact based on the different conditions and, in particular, on an electrical characteristic of the transmission line.
    - 2.1.3 The respondent argued in favour of a broad interpretation of claim 1, in the sense that the formulation "based on" was to be interpreted as including any kind of relationship between the voltage

bounding range and the electrical characteristic of the transmission line.

2.1.4 However, the board is not convinced that claim 1 is susceptible to such an unreasonably broad interpretation. Rather, it is clear from the wording of claim 1 alone that "based on" is intended to express and be understood by the skilled person as a factual reflection of an electric characteristic of the transmission line in the definition of the voltage bounding range. However, this does not result from document D1.

2.1.5 The board therefore arrived at the conclusion that the subject-matter of claim 1 of the main request is new in view of document D1. The same applies to the subject-matter of independent claim 14 of the main request.

## 2.2 *Novelty in view of document D9*

2.2.1 The subject-matter of claim 1 of the main request is not new in view of document D9.

2.2.2 It was in dispute between the parties whether document D9 discloses obtaining information regarding an electrical characteristic of a transmission line connecting the wind turbine output terminal to a point of common coupling to which plural other wind turbines are connectable and defining the voltage bounding range based on the electrical characteristic of the transmission line.

2.2.3 The board does not agree with the appellant that claim 1 or the related description in the patent implies the necessity of measurements at at least two different locations on a transmission line in order to obtain an

electric characteristic of the transmission line in the sense of claim 1.

The board rather concurs with the respondent that it is possible to obtain information regarding an electrical characteristic of the transmission line by measuring the voltage at the end of the transmission line, i.e. at the POCC.

More specifically, claim 11 of the patent may refer to "measuring the characteristic of the transmission line, in particular regarding possible voltagess at the transmission line" (emphasis added), i.e. to a plurality of voltages. Accordingly, the description of the patent in paragraph [0014] refers to "electrical measurements" (emphasis added).

However, the board does not consider this disclosure to imply directly and unambiguously that more than one measurement on the transmission line is necessary to obtain information regarding an electrical characteristic of the transmission line. It is further to be noted that, as was pointed out by the respondent, claim 1 does not provide any definition of the electrical characteristic of the transmission line.

2.2.4 Nor is it derivable from the disclosure in paragraph [0041] of the patent that a plurality of measurements is required to obtain information about an electrical characteristic of the transmission line within the meaning of claim 1.

While the first sentence of this paragraph refers to possible voltagess in accordance with claim 11 of the patent, the next sentence specifies that "the voltage" can be measured at the point of common coupling. The

next sentence discloses that "the voltage" may be measured at the wind turbine output terminal. The following sentence then states that such electrical quantities may be measured at plural different locations along the transmission line between wind turbine and POCC. In the light of this description, the board considers that measuring a plurality of voltages at different locations merely constitutes a specific embodiment of the subject-matter of claim 1.

The board therefore agrees with the respondent that a plausible understanding of the wording "possible voltagess" (emphasis added) includes a plurality of measurements at the same location at different points in time and not necessarily measurements at different locations. Thus, paragraph [0041] in principal reveals different possibilities to obtain an electrical characteristic of the transmission line:

- (1) by measuring at the POCC
- (2) by measuring at the wind turbine output terminal
- (3) by combining measurements according to (1) and (2)

Therefore, in line with the disclosure of the patent in paragraph [0041], voltage measurements (only) at the POCC to which the wind turbine output terminal is connected via the transmission line, can be considered to correspond to information regarding an electrical characteristic of the transmission line within the meaning of claim 1.

- 2.2.5 In document D9, the POCC is connected to a wind turbine via a transmission line. Document D9 further discloses measuring a voltage Umeas at the POCC. The measured



voltage  $U_{meas}$  is applied as an input signal to a controller (see paragraph [0067], figure 1). For the sake of completeness, it is noted that a plurality of measurements, corresponding to the plural wording "voltages" used in the patent, are thereby performed.

As is further disclosed in D9, see e.g. paragraphs [0008], [0067] and [0068] as well as figures 1 to 3, the voltage bounding range, defined by the upper and lower limit voltages  $U_{maxref}$  and  $U_{minref}$ , is clearly based on the voltage  $U_{meas}$  measured at the POCC. The voltage bounding range in D9 is thus based on the electrical characteristic of the transmission line as recited in claim 1.

- 2.2.6 The board thus concluded that the subject-matter of claim 1 of the main request is not new in view of document D9. Consequently, the ground for opposition under Article 100(a) EPC in combination with Article 54 EPC prejudices the maintenance of the patent as granted.

### 3. *First auxiliary request*

#### 3.1 *Amendments (Article 123(2) EPC)*

- 3.1.1 The subject-matter of claim 1 does not extend beyond the content of the application as originally filed.
- 3.1.2 Claim 1 of the first auxiliary request includes the additional features of claim 4, which originally depended on claim 2. Claim 2 as filed recites that the voltage bounding range is defined to be a voltage range between maximum voltage  $V_{max}$  and minimum voltage  $V_{min}$ .

3.1.3 The board agrees with the appellant that the definition of claim 2 is already implied in the wording "voltage bounding range". In particular, there cannot be any doubt that the skilled person would understand from the respective wording in the overall context of claim 1 that a voltage range requires an upper voltage limit and lower voltage limit.

3.1.4 Correspondingly, the board does not agree with the respondent that claim 1, without the definition of claim 2, may comprise a voltage bounding range, which is open, i.e. unlimited at one end.

3.1.5 The omission of the feature of original claim 2 therefore does not result in an inadmissible extension of the subject-matter of claim 1. The subject-matter of claim 1 of the first auxiliary request therefore meets the requirement of Article 123(2) EPC. The same applies to the subject-matter of independent claim 13 of the first auxiliary request.

### 3.2 *Sufficiency of disclosure (Article 83 EPC)*

3.2.1 The patent describes the invention as defined in claims 1 and 13 in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art.

3.2.2 As regards the first objection raised by the respondent under Article 83 EPC against the first auxiliary request, the board concurs with the appellant that the skilled person would know how to calculate the voltage  $V_{\text{turb}}$ , i.e. the output voltage of the turbine, off-line (prior to the operation of the wind turbine) by means of the equation in paragraph [0056] of the patent. In particular, the appellant convincingly argued that the

skilled person can, for example, use an average expected wind speed to calculate the actual possible maximum or minimum voltage expected from the wind turbine if the actual wind speed was not known.

The board therefore considers the description in paragraphs [0056] and [0062] not to prevent the skilled person from implementing the invention.

3.2.3 The respondent raised a second objection under Article 83 EPC against claim 12 of the first auxiliary request (corresponding to claim 13 as granted). In this respect, the board agrees with the appellant that the person skilled in the art would know that the voltage bounding range may be maintained constant after it has been defined according to the subject-matter of granted claim 1. The invention as defined in claim 12 is therefore sufficiently described for it to be carried out by the skilled person.

3.2.4 The respondent raised a third objection under Article 83 EPC in view of the description in paragraph [0014] of the patent, which allegedly implied that current measurements could be performed without voltage measurements. In this respect, the board agrees with the appellant that the skilled person would not understand paragraph [0014] of the patent to imply that only current measurements are comprised in the information regarding an electrical characteristic of the transmission line. Rather, the skilled person would clearly understand that further information may be comprised in the information regarding the electrical characteristic of the transmission line. The description in paragraph [0014] therefore does not hinder the skilled person from implementing the invention of claims 1 and 13.

3.2.5 A fourth objection under Article 83 EPC, raised by the respondent, concerned claim 7 of the first auxiliary request (corresponding to claim 8 as granted). The board in this context agrees with the appellant that the skilled person in the technical field of wind turbine control is well aware of the necessary tools and skills to simulate electrical circuits in this context. The skilled person therefore would have no difficulties in carrying out the invention as defined in claim 7.

3.3 *Novelty in view of document D1 (Article 54 EPC)*

3.3.1 The conclusions on novelty of the subject-matter of claim 1 of the main request in view of document D1 likewise apply to the subject-matter of claim 1 of the first auxiliary request, see point 2.1 above.

3.3.2 In particular, document D1 does not disclose defining a voltage bounding range based on an electrical characteristic of the transmission line. It follows from this that document D1 does not disclose the additional feature of claim 1 of the first auxiliary request, namely that the electrical characteristic comprises a transformation ratio of a wind turbine transformer connected between the wind turbine output terminal and the point of common coupling, the transformation ratio being a ratio between a voltage at a medium voltage side and a voltage at a low voltage side of the wind turbine transformer, wherein the wind turbine output terminal is connected to the low voltage side of the wind turbine transformer.

3.3.3 The board has therefore come to the conclusion that the subject-matter of claim 1 of the first auxiliary request is new in view of document D1, Article 54 EPC.

3.4 *Inventive step in view of document D1 (Article 56 EPC)*

*Document D1 in combination with the common general knowledge of the skilled person*

3.4.1 The subject-matter of claim 1 of the first auxiliary request is not rendered obvious by a combination of document D1 with the common general knowledge of the skilled person.

3.4.2 In the decision under appeal, the opposition division found that the skilled person would obviously take the transformation ratio of the transformer in the transmission line together with the electrical characteristic of the transmission line into consideration, when defining the limit to be set in the limiter 182. Since document D1 disclosed a transformer and a limiter, the skilled person would see the relation between these two elements.

3.4.3 The board is not convinced by this reasoning. In particular, the board does not recognise any corresponding relation in document D1 between the limiter on the one side and the transformer being arranged in the transmission line on the other side.

3.4.4 The respondent cited document D1 on page 6, line 31 to page 7, line 1, where it is generally disclosed that the intermediate transformer can be taken into account in a compensation unit for calculating the wind turbine reference voltage. Furthermore, the respondent's submission focuses on page 8, line 30 to page 9, line

10 of D1, where it is disclosed that a limiter is provided to prevent damage caused by excessive reference voltages due to long transmission lines and corresponding complex impedances.

- 3.4.5 However, the board agrees with the appellant that document D1 in the respective passages does not disclose directly and unambiguously a transformation ratio that is considered in the compensation unit. In particular, the passage on page 6, line 31 to page 7, line 1 is exclusively concerned with the compensation unit and a calculation of the reference voltage which takes into account influences of the transmission line and/or an intermediate transformer. Document D1, however, does not disclose any details of how the intermediate transformer is considered in the calculation of the reference voltage. Nor is there any relation apparent between calculating the (individual) reference voltages and determining the voltage limits by means of the limiter.
- 3.4.6 Consequently, the board considers that document D1 does not disclose or suggest taking into account the transformation ratio of the intermediate transformer, and in particular not taking into account the transformation ratio for obtaining information regarding an electrical characteristic of the transmission line in the sense of claim 1 of the first auxiliary request.

Furthermore, the board does not understand this to correspond to normal practice which the person skilled in the art would, without any motivation or hint in this respect, implement in D1. The respondent has not submitted anything further in this regard.

3.4.7 Therefore, the board concluded that the subject-matter of claim 1 of the first auxiliary request is not rendered obvious by document D1 in combination with the common general knowledge of the skilled person.

*Document D1 in combination with document D2*

3.4.8 The subject-matter of claim 1 of the first auxiliary request is also not rendered obvious by a combination of documents D1 and D2.

3.4.9 As outlined in particular under the points 3.4.4 to 3.4.6 above, document D1 merely generally discloses that an intermediate transformer is somehow considered in the calculation of the wind turbine reference voltage. Document D1 does not directly and unambiguously, either explicitly or implicitly, disclose that it is the transformation ratio of the intermediate transformer that is considered in the calculation of the wind turbine reference voltage.

The respondent's argument with regard to a combination of documents D1 and D2 is based on the assumption that document D1 discloses a transformation ratio of an intermediate transformer, on which the calculation of the reference voltage is based. According to the respondent, when transferring the teaching from document D2 to document D1, the error variable  $e(z)$  in the equations on page 2 of D2 would be based on the transformation ratio of an intermediate transformer. However, since the board is convinced that, as outlined above, document D1 does not directly and unambiguously disclose the use of the transformation ratio of an intermediate transformer as part of such a calculation, the combination of documents D1 and D2 in any case does

not result in the subject-matter of claim 1 of the first auxiliary request.

This statement applies regardless of further questions that were assessed in this context, in particular the questions of how the objective technical problem should be formulated as well as the question of whether the skilled person would have considered document D2 at all.

- 3.4.10 In conclusion, the subject-matter of claim 1 of the first auxiliary request is not rendered obvious by a combination of documents D1 and D2. The same applies to the subject-matter of independent claim 13 of the first auxiliary request.

Given that the respondent did not raise any further objections under Article 56 EPC against the first auxiliary request, the subject-matter of claims 1 and 13 of this request is considered to involve an inventive step under Article 56 EPC.

4. *Result*

Given that the maintenance of the patent as granted is prejudiced by the ground for opposition under Article 100(a) in combination with Article 54 EPC, but none of the objections raised by the respondent prejudices the maintenance of the first auxiliary request, the board had to accede to the appellant's first auxiliary request.



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of claims 1 to 13 of the first auxiliary request filed with letter of 4th October 2017 and a description to be adapted.

The Registrar:

The Chairman:



U. Bultmann

R. Lord

Decision electronically authenticated