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(71) Applicant: **4NAVITAS (GREEN ENERGY SOLUTIONS) LIMITED** [GB/GB]; 2 Florent Court, Regent Street, Pocklington, York, Yorkshire YO2 2PQ (GB).

(72) Inventor: **TOWELL, Keith John**; 142 Guildford Park Avenue, Guildford, Surrey GU2 7NN (GB).

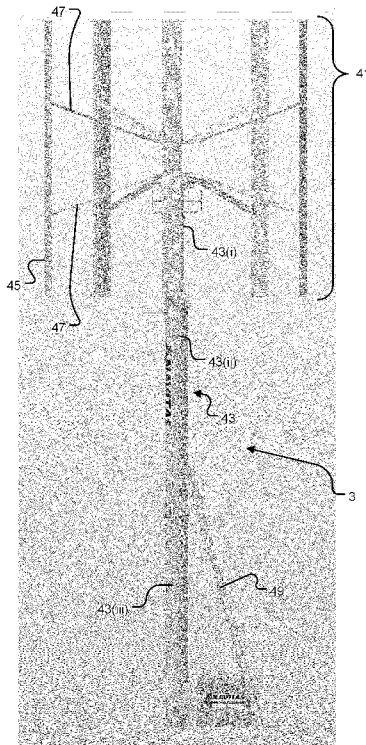
(74) Agent: **MILHENCH, Mark Lorne**; First Thought IP Ltd, 35 New Broad Street House, New Broad Street, London EC2M 1NH (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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[Continued on next page]

(54) Title: VERTICAL AXIS WIND TURBINE



(57) Abstract: This invention relates to a vertical-axis wind turbine (VAWT) 3. The VAWT 3 comprises: a turbine assembly 41 comprising a plurality of blades 45 coupled to a rotor assembly 46, a turbine assembly support tower 43 on which the turbine assembly 41 can be mounted for rotation with respect thereto, the tower 43 being configured so that the blades 45 of the turbine assembly 41 extend generally in parallel to the support tower 43; and first and second buttresses 49, 51 that are each configured to be coupled to the turbine assembly support tower 43 at one end, the other end of each of the buttresses being configured for attachment to a respective buttress support 7, 9 so that each buttress is inclined at an angle relative to the support.



MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, KM, ML, MR, NE, SN, TD, TG).

— before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments (Rule 48.2(h))

**Published:**

— with international search report (Art. 21(3))

**(88) Date of publication of the international search report:**

9 April 2015

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/060568

A. CLASSIFICATION OF SUBJECT MATTER  
 INV. F03D11/00 F03D11/04 F03D3/00 F03D3/06  
 ADD.  
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
 Minimum documentation searched (classification system followed by classification symbols)  
 F03D E02D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 91/08394 A1 (HEIDELBERG GOETZ [DE]) 13 June 1991 (1991-06-13)	1-4,28
Y	abstract page 11, paragraph 4 - page 13, paragraph 4 figures 1,4	5-11,37, 38
Y	----- US 2013/101360 A1 (LUTENEGGER ALAN J [US] ET AL) 25 April 2013 (2013-04-25) abstract paragraph [0031] - paragraph [0033]; figures 1,2	5-11,37, 38
X	----- GB 1 593 329 A (UNIV GAKKO HOJIN TOKAI) 15 July 1981 (1981-07-15) page 2, line 29 - line 38 page 2, line 103 - line 130 figure 3 ----- -/--	1-3

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  13 August 2014	Date of mailing of the international search report  12/02/2015
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Westermayer, Philipp

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/060568

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004/047723 A1 (HORJUS THOMAS W [US]) 11 March 2004 (2004-03-11) abstract paragraph [0022] - paragraph [0023] figures 1,2 -----	1-11,28, 37,38

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2014/060568

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9108394	A1	13-06-1991	AU 2020395 A 27-07-1995
			AU 6875191 A 26-06-1991
			CA 2070177 A1 02-06-1991
			DE 3939862 A1 06-06-1991
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			WO 9108394 A1 13-06-1991
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			US 2013101360 A1 25-04-2013
			WO 2013063024 A1 02-05-2013
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GB 1593329	A	15-07-1981	GB 1593329 A 15-07-1981
			NL 7801766 A 22-08-1978
			US 4285636 A 25-08-1981
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US 2004047723	A1	11-03-2004	NONE
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2014/060568

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11, 28, 37, 38

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11, 28, 37, 38

Vertical axis wind turbine mounted on a support tower and two battresses are coupled to said support tower and inclined at an angle relative to said support.

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2. claims: 12-18, 29-33

Vertical axis wind turbine and aerodynamic component for a wind turbine comprising a sacrificial skin.

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3. claims: 19-22, 34-36

Vertical axis wind turbine with winglets at the tip of the blades.

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4. claims: 23-27

Vertical axis wind turbine with a drive-shaft and a braking system.

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