

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/SA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2021/074299

International filing date (day/month/year)
02.09.2021

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC
INV. B01D5/00 E03B3/28

Applicant
ENERGY AND WATER DEVELOPMENT CORP.

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| ☒ | Box No. I | Basis of the opinion |
| ☐ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Rule 43 <i>bis</i> .1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 *bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	<u>1-13</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-13</u>
Industrial applicability (IA)	Yes: Claims	<u>1-13</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1 US 2019/291665 A1 (MARTIN DOUGLAS [US]) 26 September 2019
 (2019-09-26)
- D2 US 10 829 913 B1 (AHMED FAIZAN [SA] ET AL) 10 November 2020
 (2020-11-10)
- D3 US 2011/049992 A1 (SANT ANSELMO ROBERT [US] ET AL) 3 March
 2011 (2011-03-03)

1 CLARITY

- 1.1 The application does not meet the requirements of Article 6 PCT, because claims 1-13 are not clear.
- 1.2 Claims 1, 12 are broader than justified by the description and the drawings. It should be noted that the term "atmospheric water generator" is vague and not very limiting, because any collection system would be able collect water from atmosphere if used at the right pressure/temperature conditions. Also an atmospheric water generator could mean a water generator functioning at atmospheric condition. Claim 1 only contains a solar cell layer connected to a water collector/generator.
- 1.3 The definition of the atmospheric water generator in page 8 line 20-22 should at least be added to claim 1.
- 1.4 The fact that method claim 12 uses the system of claim 3 shows that claim 1 does not have all the features of the heart of the invention.
- 1.5 The following features seem to be essential to the definition of the invention and should be added to claim 1:
- the system further comprises at least one energy storage device, wherein the at least one solar cell layer is electrically connected to the energy storage device which is electrically connected to the at least one atmospheric water generator, wherein an energy consumption and/or distribution is controlled by at least one energy management application.

- the at least one solar cell layer, the at least one atmospheric water generator and the at least one energy storage device are electrically connected to the energy management application.
 - the at least one energy management application is configured to electrically connect the at least one solar cell layer and/or to the at least one energy storage device to the at least one atmospheric water generator.
 - the at least one energy management application is configured to electrically connect the at least one energy storage device to the at least one atmospheric water generator.
 - the system further comprises an energy output port.
 - the at least one energy management application is electrically connected to the energy output port and wherein the at least one energy management application is configured to connect the at least one solar cell layer to the energy output port.
- 1.6 In claim 3, the energy management application is vague. The person skilled in the art would not know if it is part of the scope of the claim, and how to implement this feature.
- 1.7 In claim 6, it is not clear where the energy output port is connected.

2 NOVELTY

2.1 Notwithstanding the below-mentioned lack of clarity, the subject-matter of claims 1-13 is not new in the sense of Article 33(2) PCT, and the criteria of Article 33(1) PCT are therefore not met.

2.2 Document D1 discloses (Figure 1, §14-96) the subject-matter of claims 1-7, 11-13:

System for generating atmospheric water, the system comprising:

- at least one energy generation device (108); and
- at least one atmospheric water generator (163);
- a energy storage device (150)
- a energy management application (190)
- an output port (125)

wherein the at least one energy generation device comprises at least one solar glass component having at least one solar cell layer, wherein the at least one solar cell layer is electrically connectable to the at least one atmospheric water generator.

- 2.3 Document D2 discloses (Figure 1, column 8 line 66 - column 42 line 5) the subject-matter of claims 1-7,11-13:

System for generating atmospheric water, the system comprising:

- at least one energy generation device (1); and
- at least one atmospheric water generator (8);
- a energy storage device (11)
- a energy management application (controller)
- an ouptut port.

wherein the at least one energy generation device comprises at least one solar glass component having at least one solar cell layer, wherein the at least one solar cell layer is electrically connectable to the at least one atmospheric water generator.

- 2.4 Document D3 discloses (Figures 4, 14E, 14F , 44F, 61B, §389-1139) the subject-matter of claims 1-11:

System for generating atmospheric water, the system comprising:

- at least one energy generation device (photovoltaic panel); and
- at least one atmospheric water generator (tank 5101 in fig 61B);
- a energy storage device (battery)
- a energy management application (controller)
- an output port

wherein the at least one energy generation device comprises at least one solar glass component having at least one solar cell layer having the shape of claims 8-10 (see Figure 44F), wherein the at least one solar cell layer is electrically connectable to the at least one atmospheric water generator.

Therefore the subject-matter of claims 1-11 is not new in the sense of Article 33(1,2) PCT.

3 REMARKS

- 3.1 It should be noted that the atmospheric water generator and the energy generation device are only connected for the supply of electricity. They do not have further synergies. It is very usual to use different types of energy generation /storage device for providing electricity depending on the needs. Associating a specific type of energy generation or storage device to the use of the specific water generator will probably not be considered inventive.