

2008323025 02 Sep 2020



Federal Court of Australia
District Registry: New South Wales
Division: General

No: NSD394/2019

HANWHA SOLUTIONS CORPORATION (REGISTRATION NO. 110111-0360935)
and others named in the schedule
Applicants/Cross-Respondents

LONGI GREEN ENERGY TECHNOLOGY CO. LTD and others named in the schedule
Respondents/Cross-Claimants

ORDER

JUDGE: JUSTICE BURLEY

DATE OF ORDER: 28 August 2020

WHERE MADE: Sydney

THE COURT ORDERS THAT:

1. Pursuant to s 105(1) of the *Patents Act 1990* (Cth), the Court orders that the claims of Australian Patent No. 2008323025 (the **Patent**) be amended in the form indicated in Annexure A to these Orders. In particular:
 - (a) all underlined text in Annexure A is to be inserted into the claims of the Patent;
and
 - (b) all text that has been struck-through in Annexure A is to be deleted from the claims of the Patent.

BY CONSENT, THE COURT ORDERS THAT:

Amendment Application

2. The First Applicant's amended interlocutory application dated 12 February 2020 (the **Amendment Application**) be determined on the papers.
3. Subject to the orders relating to costs made on 8 April 2020 and 26 May 2020, there be no order as to costs arising from the Amendment Application.



4. The hearing of the Amendment Application listed for 6 October 2020 be vacated.

Pleadings

5. Within 14 days of these Orders, the Applicants file and serve any Fourth Amended Originating Application and Fourth Amended Statement of Claim (the **Amended Pleadings**).
6. Within 28 days of the Applicants' filing the Amended Pleadings:
 - (a) the Respondents file and serve their Defences to the Fourth Amended Statement of Claim; and
 - (b) the Cross-Claimants file and serve their Third Amended Notice of Cross-Claim, Fourth Amended Statement of Cross-Claim and Third Amended Particulars of Invalidity.
7. Within 14 days of the Respondents/Cross-Claimants filing their pleadings in accordance with Order 6 above, the Applicants/Cross-Respondents file and serve:
 - (a) any Replies to the Defences to the Fourth Amended Statement of Claim; and
 - (b) a Defence to the Fourth Amended Statement of Cross-Claim.
8. Within 14 days of the Cross-Respondents filing their Defence in accordance with Order 7(b) above, the Cross-Claimants file and serve any Reply to the Defence to the Fourth Amended Statement of Cross-Claim.
9. The Applicants/Cross-Respondents pay the Respondents'/Cross-Claimants' costs thrown away by reason of the amendments to the Amended Pleadings.
10. The matter be listed for a case management hearing at 9.30am on 16 November 2020.

BY CONSENT, THE COURT NOTES THAT:

11. The Statement of Grounds and Particulars of Opposition to the Amendment Application filed by the Respondents on 18 March 2020 is withdrawn without prejudice to the Respondents' rights to challenge the validity of any amended or new claims that are



allowed following the determination of the Amendment Application including on grounds under s 40 of the *Patents Act 1990* (Cth).

Date that entry is stamped: 1 September 2020

Sia Lagos
Registrar

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Schedule

No: NSD394/2019

Federal Court of Australia
District Registry: New South Wales
Division: General

Second Applicant HANWHA Q CELLS AUSTRALIA PTY LTD (ABN 84 141 108 590)

Second Cross-Respondent HANWHA GLOBAL ASSET CORPORATION (FORMERLY KNOWN AS HANWHA Q CELLS & ADVANCED MATERIALS CORPORATION) (REGISTRATION NO. 110111-1725930)

Second Respondent/Second Cross-Claimant LONGI SOLAR AUSTRALIA PTY LTD (ACN 632 322 288)

Third Respondent/Third Cross-Claimant LONGI SOLAR TECHNOLOGY CO. LTD

Fourth Respondent/Fourth Cross-Claimant LONGI (H.K.) TRADING LIMITED



Federal Court of Australia
District Registry: New South Wales
Division: General

No: NSD395/2019

HANWHA SOLUTIONS CORPORATION (REGISTRATION NO. 110111-0360935)
and others named in the schedule
Applicants/Cross-Respondents

JINKO SOLAR AUSTRALIA HOLDINGS CO. PTY LTD (ABN 93 154 662 889)
Respondent/Cross-Claimant

ORDER

JUDGE: JUSTICE BURLEY

DATE OF ORDER: 28 August 2020

WHERE MADE: Sydney

THE COURT ORDERS THAT:

1. Pursuant to s 105(1) of the *Patents Act 1990* (Cth), the Court orders that the claims of Australian Patent No. 2008323025 (the **Patent**) be amended in the form indicated in Annexure A to these Orders. In particular:
 - (a) all underlined text in Annexure A is to be inserted into the claims of the Patent;
and
 - (b) all text that has been struck-through in Annexure A is to be deleted from the claims of the Patent.

BY CONSENT, THE COURT ORDERS THAT:

Amendment Application

2. The First Applicant's amended interlocutory application dated 12 February 2020 (the **Amendment Application**) be determined on the papers.
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Pleadings

5. Within 14 days of these Orders, the Applicants file and serve any Fourth Amended Originating Application and Fourth Amended Statement of Claim (the **Amended Pleadings**).
6. Within 28 days of the Applicants' filing the Amended Pleadings:
 - (a) the Respondent file and serve their Defences to the Fourth Amended Statement of Claim; and
 - (b) the Cross-Claimant file and serve a Third Amended Notice of Cross-Claim, Third Amended Statement of Cross-Claim and Third Amended Particulars of Invalidity.
7. Within 14 days of the Respondent/Cross-Claimant filing its pleadings in accordance with Order 6 above, the Applicants/Cross-Respondents file and serve:
 - (a) any Replies to the Defences to the Fourth Amended Statement of Claim; and
 - (b) a Defence to the Third Amended Statement of Cross-Claim.
8. Within 14 days of the Cross-Respondents filing their Defence in accordance with Order 7(b) above, the Cross-Claimant file and serve any Reply to the Defence to the Third Amended Statement of Cross-Claim.
9. The Applicants/Cross-Respondents pay the Respondent's/Cross-Claimant's costs thrown away by reason of the amendments to the Amended Pleadings.
10. The matter be listed for a case management hearing at 9.30am on 16 November 2020.

BY CONSENT, THE COURT NOTES THAT:

11. The Statement of Grounds and Particulars of Opposition to the Amendment Application filed by the Respondent on 10 March 2020 is withdrawn without prejudice to the Respondent's rights to challenge the validity of any amended or new claims that are



allowed following the determination of the Amendment Application including on grounds under s 40 of the *Patents Act 1990* (Cth).

Date that entry is stamped: 1 September 2020

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Schedule

No: NSD395/2019

Federal Court of Australia
District Registry: New South Wales
Division: General

Second Applicant	HANWHA Q CELLS AUSTRALIA PTY LTD (ABN 81 141 108 590)
First Cross-Respondent	HANWHA GLOBAL ASSET CORPORATION (FORMERLY KNOWN AS HANWHA Q CELLS & ADVANCED MATERIALS CORPORATION) (REGISTRATION NO. 110111-1725930)
Second Cross-Respondent	HANWHA SOLUTIONS CORPORATION (REGISTRATION NO. 110111-0360935)



Federal Court of Australia
District Registry: New South Wales
Division: General

No: NSD458/2019

HANWHA SOLUTIONS CORPORATION (REGISTRATION NO. 110111-0360935)
and others named in the schedule
Applicants/Cross-Respondents

REC SOLAR PTE LTD and others named in the schedule
Respondents/Cross-Claimants

ORDER

JUDGE: JUSTICE BURLEY

DATE OF ORDER: 28 August 2020

WHERE MADE: Sydney

THE COURT ORDERS THAT:

1. Pursuant to s 105(1) of the *Patents Act 1990* (Cth), the Court orders that the claims of Australian Patent No. 2008323025 (the **Patent**) be amended in the form indicated in Annexure A to these Orders. In particular:
 - (a) all underlined text in Annexure A is to be inserted into the claims of the Patent;
and
 - (b) all text that has been struck-through in Annexure A is to be deleted from the claims of the Patent.

BY CONSENT, THE COURT ORDERS THAT:

Amendment Application

2. The First Applicant's amended interlocutory application dated 12 February 2020 (the **Amendment Application**) be determined on the papers.
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6. Within 28 days of the Applicants' filing the Amended Pleadings:
 - (a) the Respondents file and serve their Defences to the Fourth Amended Statement of Claim; and
 - (b) the Cross-Claimants file and serve their Third Amended Notice of Cross-Claim, Third Amended Statement of Cross-Claim and Third Amended Particulars of Invalidity.
7. Within 14 days of the Respondents/Cross-Claimants filing their pleadings in accordance with Order 6 above, the Applicants/Cross-Respondents file and serve:
 - (a) any Replies to the Defences to the Fourth Amended Statement of Claim; and
 - (b) a Defence to the Third Amended Statement of Cross-Claim.
8. Within 14 days of the Cross-Respondents filing their Defence in accordance with Order 7(b) above, the Cross-Claimants file and serve any Reply to the Defence to the Third Amended Statement of Cross-Claim.
9. The Applicants/Cross-Respondents pay the Respondents'/Cross-Claimants' costs thrown away by reason of the amendments to the Amended Pleadings.
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Schedule

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Federal Court of Australia
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Second Applicant HANWHA Q CELLS AUSTRALIA PTY LTD (ABN 84 141 108 590)

First Cross-Respondent HANWHA GLOBAL ASSET CORPORATION (FORMERLY KNOWN AS HANWHA Q CELLS & ADVANCED MATERIALS CORPORATION) (REGISTRATION NO. 110111-1725930)

Second Cross-Respondent HANWHA SOLUTIONS CORPORATION (REGISTRATION NO. 110111-0360935)

Second Respondent/Second Cross-Claimant SOL DISTRIBUTION PTY LTD (ABN 53 146 905 286)

Third Respondent/Third Cross-Claimant BAYWA R.E. SOLAR SYSTEMS PTY LTD (ACN 614 035 620)



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ANNEXURE A

Claims

1. Method for manufacturing a silicon solar cell, including the following steps:
providing a silicon substrate (1);
depositing a first dielectric layer (3) on a surface of the silicon substrate by means of
5 atomic layer deposition, wherein the first dielectric layer comprises aluminium oxide; and
depositing a second dielectric layer (5) on a surface of the first dielectric layer (3), the
materials of the first and the second dielectric layer differing and hydrogen being embedded into
the second dielectric layer.
2. Method according to claim 1, wherein, for depositing the first dielectric layer, the
10 silicon substrate is firstly flushed with an aluminium-containing compound comprising at least
one of the components $\text{Al}(\text{CH}_3)_3$, AlCl_3 , $\text{Al}(\text{CH}_3)_2\text{Cl}$ and $(\text{CH}_3)_2(\text{C}_2\text{H}_5)\text{N}:\text{AlH}_3$, so that an
aluminium-containing layer is deposited on the surface of the silicon substrate, and wherein the
aluminium-containing layer is subsequently oxidised to higher valency in an oxygen-containing
atmosphere.
- 15 3. Method according to one of claims 1 or 2, wherein the second dielectric layer
comprises a material selected from the group comprising silicon nitride, silicon oxide and silicon
carbide.
4. Method according to one of claims 1 to 3, wherein the second dielectric layer is
manufactured by means of a PECVD method.
- 20 5. Method according to one of claims 1 to 4, wherein the second dielectric layer is
deposited in such a way that it has a hydrogen content of at least 1 at. %, preferably at least
2 at. % and more preferably at least 5 at. %.
6. Method according to one of claims 1 to 5, wherein a high-temperature step is
carried out at temperatures above 600 °C, preferably above 700 °C and more preferably above
25 800 °C, after the depositing of the second dielectric layer.
7. Method according to one of claims 1 to 6, wherein the first dielectric layer is
deposited at a thickness of less than 50 nm, preferably less than 30 nm and more preferably less
than 10 nm.



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8. Method according to one of claims 1 to 7, wherein the second dielectric layer is deposited at a thickness of more than 50nm, preferably more than 100nm and more preferably more than 150nm.

9. Solar cell comprising:

5 a silicon substrate (1);

a first dielectric layer (3) comprising aluminium oxide on a surface of the silicon substrate (1) wherein the first dielectric layer has a thickness of less than 50 nm, preferably less than 30 nm and more preferably less than 10 nm;

10 a second dielectric layer (5) on a surface of the first dielectric layer (3), the materials of the first and the second dielectric layer differing and hydrogen being embedded into the second dielectric layer.

10. Solar cell according to claim 9, wherein the first dielectric layer is deposited by means of atomic layer deposition, so that it is substantially atomically tight.

15 11. Solar cell according to claim 9 or 10, wherein the second dielectric layer comprises ~~a material selected from the group comprising silicon nitride, silicon oxide and silicon carbide.~~

12. Solar cell according to one of claims 9 to 11, wherein the second dielectric layer has a thickness of more than 50 nm, preferably more than 100 nm and more preferably more than 150 nm.

20 13. Solar cell according to any one of claims 9 to 12, wherein the second dielectric layer has a thickness of more than 100 nm.

14. Solar cell according to any one of claims 9 to 13, further comprising a plurality of metal contacts, wherein the metal contacts pass through the first dielectric layer and the second dielectric layer.

25 ~~15. Solar cell according to any one of claims 9 to 14, wherein the surface of the silicon substrate is oxidised.~~

16. Solar cell according to any one of claims 9 to ~~15~~14, wherein the surface of the silicon substrate is passivated by hydrogen.



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17. Solar cell according to any one of claims 9 to 16, wherein the first dielectric layer passivates a region of the silicon substrate of conduction type p.

18. Solar cell according to claim 17, wherein the surface of the silicon substrate is at the back of the solar cell.

19. Solar cell according to claim 18 wherein the second dielectric layer forms part of a back surface reflector.

20. Solar cell according to claim 19, wherein the back surface reflector further comprises a metal coating over a back surface of the second dielectric layer.

21. Solar cell according to any one of claims 9 to 20, wherein the thickness of the first dielectric layer is more than about 2 nm.

~~13~~22. Solar cell manufactured using a method according to one of the preceding claims 1 to 8.