

LIMITED WARRANTY

PV Module

The product (hereinafter the "Product") in this Warranty means the PV Module(s) manufactured by Phono Solar Technology Co., Ltd. (hereinafter the "Phono Solar"). Phono Solar warrants its Product(s) in compliance with the terms and conditions as stipulated below.

The PV Module include Standard and Dual Glass PV Module(s).

The Customer in this Warranty means the individual person or company who purchases Phono Solar Product.

This "Limited Warranty for PV-Modules" is valid for all Modules delivered from Phono Solar since **Feb 1st , 2024**.

Table1. Types of Modules covered by this Limited Warranty

Types of Modules covered by this Limited Warranty							
Module Category	Module Series	Module Type	Limited Product Warranty Period (Years)	Limited Power Warranty Period (Years)	First Year Degradation Rate	Annual Degradation Rate	Pmin At The End Of Power Warranty Period
Standard Module	P-Perc (182)	PSXXXM6(H)-18/VH	12 *	25	2.0%	0.55%	84.8%
		PSXXXM6(H)-20/UH					
		PSXXXM6(H)-22/WH					
		PSXXXM6(H)-24/TH					
		PSXXXM8(H)-18/VH					
		PSXXXM8(H)-20/UH					
		PSXXXM8(H)-22/WH					
		PSXXXM8(H)-24/TH					
	N-Topcon (182/182R/210R)	PSXXXL8(H)-22/WNH	12	25	1.0%	0.4%	89.4%
		PSXXXL8(H)-20/UNH					
		PSXXXL8(H)-18/VNH					
		PSXXXL8(H)-18/VMH					
		PSXXXL8(H)-16/QNH					
		PSXXXL8(H)-16/QMH					
		PSXXXL7(H)-24/TNH					
		PSXXXL7(H)-22/WNH					
		PSXXXL7(H)-20/UNH					
		PSXXXL7(H)-18/VNH					
		PSXXXM6(H)-24/TNH					
		PSXXXM6(H)-22/WNH					
		PSXXXM6(H)-20/UNH					
		PSXXXM6(H)-18/VNH					
Dual Glass PV Module	P-Perc (182)	PSXXXM7GF(H)-18/VH	12 *	30	2.0%	0.5%	83.5%
		PSXXXM7GF(H)-20/UH					
		PSXXXM7GF(H)-22/WH					
		PSXXXM7GF(H)-24/TH					
		PSXXXM8GF(H)-18/VH					
		PSXXXM8GF(H)-20/UH					
		PSXXXM8GF(H)-22/WH					
		PSXXXM8GF(H)-24/TH					
	N-Topcon (182/182R/210/210R)	PSXXXM8GF(H)-26/RH	15	30	1.0%	0.4%	87.4%
		PSXXXM7GF(H)-18/VNH					
		PSXXXM7GF(H)-20/UNH					
		PSXXXM7GF(H)-22/WNH					
		PSXXXM7GF(H)-24/TNH					
		PSXXXM8GF(H)-14/DNH					
		PSXXXM8GF(H)-18/VNH					
		PSXXXM8GF(H)-20/UNH					
		PSXXXM8GF(H)-22/WNH					
		PSXXXM8GF(H)-24/TNH					
		PSXXXM8GFH-26/RNH					

Types of Modules covered by this Limited Warranty							
Module Category	Module Series	Module Type	Limited Product Warranty Period (Years)	Limited Power Warranty Period (Years)	First Year Degradation Rate	Annual Degradation Rate	Pmin At The End Of Power Warranty Period
Dual Glass PV Module	N-Topcon (182/182R/210/210R)	PSXXXM13GFH-22/WNH	15	30	1.0%	0.4%	87.4%
		PSXXXL7GF(H)-18/VNH					
		PSXXXL7GF(H)-20/UNH					
		PSXXXL7GF(H)-22/WNH					
		PSXXXL7GF(H)-24/TNH					
		PSXXXL8GF(H)-16/QNH					
		PSXXXL8GF(H)-18/VNH					
		PSXXXL8GF(H)-22/WNH					
		PSXXXL8GF(H)-20/UNH					
		PSXXXL8GF(H)-15/WNH					
		PSXXXL8GF(H)-11/QNH					
		PSXXXM8GF(H)-15/WNH					
Dual Glass PV Module	N-HJT (182/210/210R)	PSXXXM6GFH-18/VSHB	15	30	1.0%	0.375%	88%
		PSXXXM8GFH-18/VSHW					
		PSXXXM8GFH-18/VSH					
		PSXXXM8GFH-18/VSHB					
		PSXXXM8GFH-24/TSHW					
		PSXXXM13GFH-18/FSHW					
		PSXXXM13GFH-20/USHW					
		PSXXXM13GFH-22/WSHW					
		PSXXXL12GFH-16/QSH					
		PSXXXL12GFH-16/QSHB					
		PSXXXL12GFH-16/QSHW					
		PSXXXL12GFH-18/VSH					
		PSXXXL12GFH-18/VSHW					
		PSXXXL12GFH-18/VSHB					
		PSXXXL12GFH-22/WSHW					
		PSXXXL13GFH-16/QSHB					
		PSXXXL13GFH-18/VSHB					
		PSXXXL14GFH-16/QSH					
		PSXXXL14GFH-16/QSHB					
		PSXXXL14GFH-16/QSHW					
		PSXXXL14GFH-18/VSH					
		PSXXXL14GFH-18/VSHW					
		PSXXXL14GFH-18/VSHB					
		PSXXXL14GFH-22/WSHW					
		PSXXXM14GFH-22/WSHW					
		PSXXXL15GFH-16/QSHB					
		PSXXXL15GFH-18/VSHB					
Light Weight Module	N-Topcon (210R)	PSXXXM6(H)-18/VMH	15	25	1.0%	0.4%	89.4%
		PSXXXM6(H)-20/UMH					
		PSXXXL7(H)-18/VMH					
		PSXXXL7(H)-20/UMH					
		PSXXXL8(H)-16/QMH					
BC Module	N-Topcon (192R)	PSXXXL7GFH-18/VBH	15	30	1.0%	0.35%	88.85%
		PSXXXL7GFH-24/TBH					
		PSXXXL8H-18/VBH					
		PSXXXL8H-24/TBH					

Note: (1) "XXX" in the module model refers to the nominal power of the module, such as "PS400M6-18/VH" and "PS440M6-20/UH". The term "(H)" in the module model refers to two types of modules that cover two maximum system voltages of 1000V and 1500V, respectively. The corresponding relationship is as follows: "PS400M6-18/VH" with a maximum system voltage of 1000V, and "PS400M6H-18/VH" with a maximum system voltage of 1500V.

(2) "12*" in the limited product warranty period refers to the limited product warranty period that can be extended from the original 12 years to 15 years for PV modules installed on residential roofs according to signed sales contracts or purchase orders.

1 Limited Warranty

1.1 Definitions and Table Description

Actual Power Output

Actual Power Output means the power output of the Module, expressed in Watts, measured at STC at a given point in time in a year after the Warranty Start Date, corrected for any measurement error, as per IEC 61215.

Average Annual Degradation Rate

For each year after the first year following the Warranty Start Date until the end of the applicable Limited Power Warranty Period, Phono Solar warrants that the Degradation Rate of Modules shall not exceed the applicable Annual Degradation Rate set forth at Table 1 applicable for each Module Type.

Degradation Rate

Degradation Rate means any positive amount calculated in accordance with the following formula, expressed as a percent:

$$\text{Degradation Rate} = (\text{Nominal Power Output} - \text{Actual Power Output}) / \text{Nominal Power Output} \times 100\%$$

First Year Degradation Rate

In the first year following the Warranty Start Date, the applicable maximum Degradation Rate of Modules set forth at Table 1.

Nominal Power Output

Nominal Power Output means the original manufactured nameplate specification of power in the Module (Maximum Power, Pmax), expressed in Watts, and measured at STC, excluding any specified positive tolerance.

Standard Test Conditions (STC)

① Air mass 1.5, ② Irradiance 1000W/m², ③ Cell Temperature 25 °C

$$P_{1st\ year, \%}$$

$P_{1st\ year, \%}$ represents the warranted Actual Power Output of Modules at the end of the first year following the Warranty Start Date.

$$P_{1st\ year, \%} = 100\% * (1 - \text{First Year Degradation Rate})$$

$P_{N\ year, \%}$ represents the warranted Actual Power Output of Modules at the end of a year (N) after the first year following the Warranty Start Date until the end of the applicable Limited Power Warranty Period as specified at Table 1.

$$P_{N\ year, \%} = 100\% * (1 - (\text{First Year Degradation Rate} + \text{Annual Degradation Rate} * (N - 1)))$$

With N, $2 \leq N \leq \text{Limited Power Warranty Period}$





1.2 Limited Product Warranty

Phono Solar warrants that for the Limited Product Warranty period since the Warranty Start Date that the Solar Modules (including the DC connectors and cables) will be free of defects in material or workmanship which affects the performance of the modules, provided that the Solar Modules are installed, utilized and maintained according to the stipulations of the Installation Manual provided by Phono Solar, which may be updated from time to time. Defects do not include changes in appearance or normal wear and tear of the Solar Modules after the modules is installed. Performance warranty for the power output is not included here but it shall be specifically elaborated in the " Limited Performance Warranty" section below.

To achieve the operational excellence and ensure high-quality products, we are proud to offer Fifteen (15) years product warranty for the modules on the residential rooftop installations delivered under a sales contract or purchase order signed on.

1.3 Limited Power Warranty

Beginning on Warranty Start Date and for the first year following the Warranty Start Date, Phono Solar warrants that the Degradation Rate of Modules shall not exceed the applicable First Year Degradation Rate, as set forth at Table 1. For each year after the first year, the Degradation Rate of Modules shall not exceed the applicable Annual Degradation Rate, as set forth at Table 1.

2 Remedies for Claims

In the event that the customer claims that the module(s) fails to meet the "Limited Warranty" as described in Sections 1.2 and 1.3 above and Phono Solar confirms the cause for such defect by Phono Solar; or at the request of the client, a mutually-agreed third-party testing was done to reveal that the cause of such defect by Phono Solar, then Phono Solar shall, at its sole discretion, either

1. Repair the defective solar modules. In such case, Phono Solar shall prepare the repair project plan and carry out the repair project for the affected modules (If multiple repairs still fail to meet the warranty requirements, Phono Solar will choose one of the other two remedial measures); or
2. Replace the defective modules or provide additional module(s) to make up for the output gap between the guaranteed output and the actual power output of the defective module(s); or
3. Refund the residual value of the defective modules or refund the value equivalent of the output gap between the guaranteed power output and the actual power output of the defective module(s).

Residual Value = Current Price (price-per-watt) * Nominal Power Output * (Left-over Limited Power Warranty Period / Limited Power Warranty Period)

Value Equivalent of Output Gap = Current Price (price-per-watt) * [Nominal Power Output * 1 - (First Year Degradation Rate + Annual Degradation Rate * (N-1)) - Actual Power Output]

Note: year N, $2 \leq N \leq$ Limited Power Warranty Period; The Current Price (price-per-watt) is determined by Phono Solar





SPECIAL NOTE:

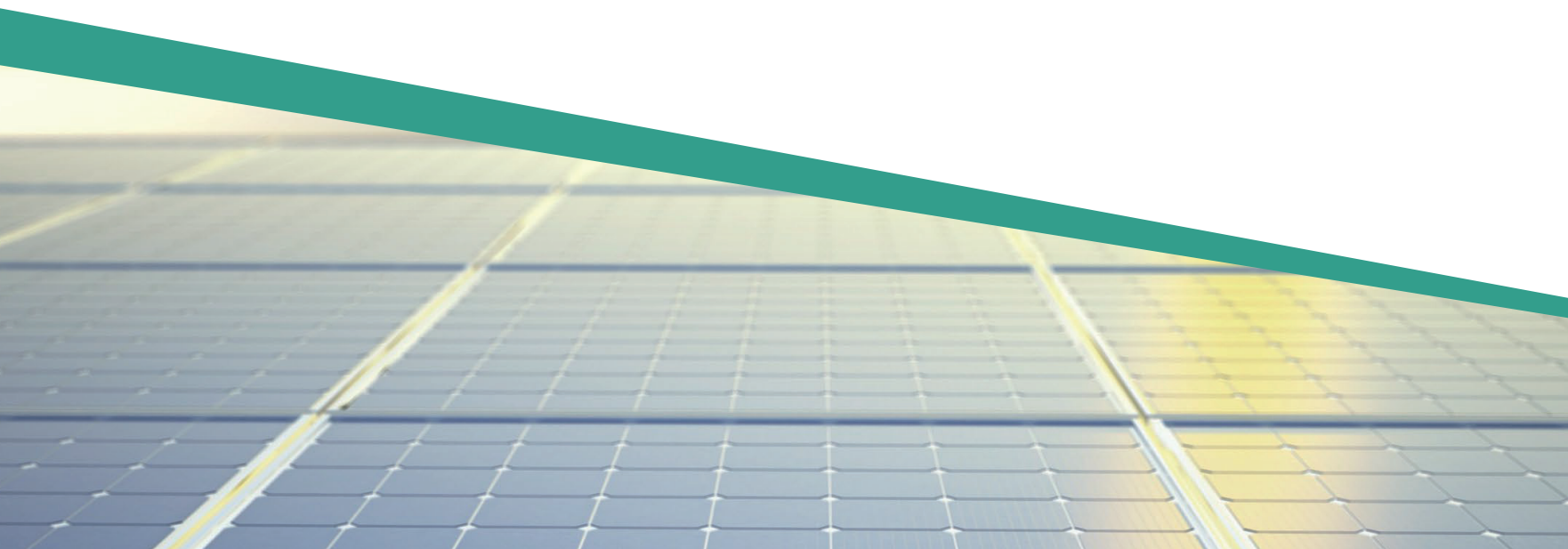
1. Unless otherwise agreed by the Parties in written, the repaired module(s) or replacement module(s) will be delivered by Phono Solar in accordance with the same Incoterms and destination as the relevant module supply contract. The insurance, freight, customs clearance fees and other reasonable expenses shall be borne in accordance with the Incoterms in the original module supply contract. In the case that the Customer pays for such costs in advance, and expects to contact Phono Solar for compensation for such aforesaid costs, the Customer shall provide the invoices to evidence that such costs are incurred from related service providers. Costs incurred due to dismantling, repacking, installation or reinstallation the module(s) and other related expenses shall be borne by the Customer.

2. Unless instructed by Phono Solar or required by law, the Customer shall dispose of out-of-use module(s) in accordance with applicable regulations on electronic waste treatment and disposal at its own cost. If Phono Solar decides or is required by law to retrieve these defective modules, the ownership of the relevant module(s) belong to Phono Solar. In the event the Customer returns the Solar Modules to Phono Solar without the prior written consent of Phono Solar, the risks (including but not limited to damage or loss of the Solar Modules) and expenses related to the Solar Modules shall be borne by the Customer, and Phono Solar is entitled to refuse to deal with the related claims and demands without any liability therefrom. Unless with written authorization from Phono Solar, any replaced module(s) shall not be resold, reworked or reused in any way.

3. Upon selecting and implementing the refund scheme based on residual value, the limited warranty for the product shall terminate immediately. After choosing and implementing the compensation scheme based on value difference, if the value difference of the product continues to widen during the warranty period, the customer may initiate another claim for compensation based on the expanded portion, that is, excluding the value difference already claimed in the previous instance.

3 Warranty Start Date

The Limited Warranty Start Date shall be defined as the date of initial installation of the Products or three months after the delivery of the Products to the first buyer, whichever date is earlier. For the avoidance of doubt, the aforesaid buyer means the buyer as agreed in the Sales Contract for sale of the Solar Modules.



4 Exclusions and Limitations

(1) In any event, all warranty claims must be received within the applicable warranty period for this warranty to be effective.

(2) The "Limited Product Warranties" and the "Limited Power Warranties" do not apply to any Product(s) which have been subjected to,

- ◆ Misuse, abuse, neglect or accident.
- ◆ Alteration, improper installation or application.
- ◆ Non-observance of Phono Solar's installation manual.
- ◆ Impairments caused by external effects, such as dirt stains, smoke, damages caused by salt, by chemicals not explicitly authorized for use, e.g. for cleaning. Repair or modifications by someone other than an approved service technician of Phono Solar.
- ◆ Power failure surges, lightning, flood, fire, accidental breakage or other events out of Phono Solar's control.
- ◆ Caused by external events including but not limited to defective equipment parts, appliances, system components like, connecting cables, invertors, or the like, which have been coupled with the Module by anyone other than Seller, or caused by defective system design, configuration, or installation planning.
- ◆ Removal of Modules and reinstallation at a new site.
- ◆ Installation on mobile platforms or in a marine environment; direct contact with corrosive agents or saltwater; pest damage; or malfunctioning system components.
- ◆ Alteration, removal or obliteration of the original Module label.
- ◆ Failure to pay the purchase price to Phono Solar or its affiliated company that sells the module(s) to the customer.
- ◆ Module(s) which have been subject to system voltage over the rated maximum system voltage or surge.
- ◆ Module(s) which have been used in a way that infringes on the intellectual property rights of Phono Solar or any other third party (including but not limited to patent rights, trademark rights, etc.)
- ◆ Other events that are reasonably beyond the control of Phono Solar.

(3) Both the "Limited Product Warranties" and "Limited Power Warranties" do not cover any costs associated with installation, removal or reinstallation of the PV modules and (except as explicitly set forth in the final paragraph of Section 6) customs clearance or any other costs for return of the Product(s).



5 Limitation of Warranty Scope

These warranties as set forth herein are expressly in lieu of and exclude all other warranties of any kind whatsoever, whether express or implied, including but not limited to warranties of merchantability, of fitness for particular purpose, use, or application, of non-infringement and all other obligations or liabilities on the part of Phono Solar, unless such other obligations or liabilities are expressly agreed to in writing signed and approved by Phono Solar to the broadest extent permitted by law.

Phono Solar shall have no responsibility or liability whatsoever for damage or injury to persons or property, or for other loss or injury resulting from any cause whatsoever arising out of or related to the Product(s), including, without limitation, any defects in the Product(s), or from use or installation. Under no circumstances shall Phono Solar be liable for any special punitive, incidental, or consequential damages, howsoever caused, including but not limited to loss of use, loss of profits, loss of production, or loss of revenues, arising, directly or indirectly from the sale or use of any Product(s), whether such claim is based on warranty, contract, negligence, strict liability or otherwise, Phono Solar's aggregate liability, if any, in damages or otherwise, shall not exceed the invoice value as paid by the Customer, for the single unit of Product(s) involved. The rights and limitations herein shall leave unaffected any legal rights existing under mandatory applicable laws.

6 Obtaining Warranty Performance

If the Customer has a justified claim covered by this "Limited Warranties for PV Modules", an immediate notification directly to Phono Solar shall be filed by mailing a registered letter in writing to the address of Phono Solar listed hereunder, or by, sending an email letter to the email account of Phono Solar Service Center listed hereunder as soon as becoming aware of the circumstances which constitute a warranty case. Together with the notification, the Customer should enclose the following information:

- ◆ The necessary contact information of the Customer, including its name, address, telephone, email, etc., The corresponding serial number of the Product(s)
- ◆ The date on which the Product(s) have been delivered and installed
- ◆ The pictures of the defective Module which show the defect and/or the pictures which show the shadowing situation at the installation location
- ◆ The timely receipt of the notification by Phono Solar shall be decisive. If the customer fails to notify Phono Solar and provide relevant information in the above manner, Phono Solar has the right to refuse to process the relevant claim and does not assume any responsibility
- ◆ The return of any PV-modules will not be accepted unless prior written authorization for the return and evaluation of the claimed defect has been given by Phono Solar. To the extent necessary for processing the return request Phono Solar or its authorized person shall be given commercially reasonable access to the Product(s) for inspection and analysis of the claimed defect. In connection with both the "Limited Product Warranties" and "Limited Power Warranties", Phono Solar shall reimburse Customer for reasonable, customary and documented transportation charges by sea freight for both the return of the Product(s) and reshipment of any repaired or replaced Product(s), only if this cost is authorized by Phono Solar customer service department, but the customs clearance fee will be undertaken by the end buyer.



7 Severability

If a certain section or clause of this "Limited Warranty" itself or its applicability to certain people or certain situation is deemed invalid, ineffective or unable to be implemented, this does not affect the validity of any other sections or clauses of this warranty. In such case, the applicability of other sections or clauses of this shall be regarded as independent and effective.

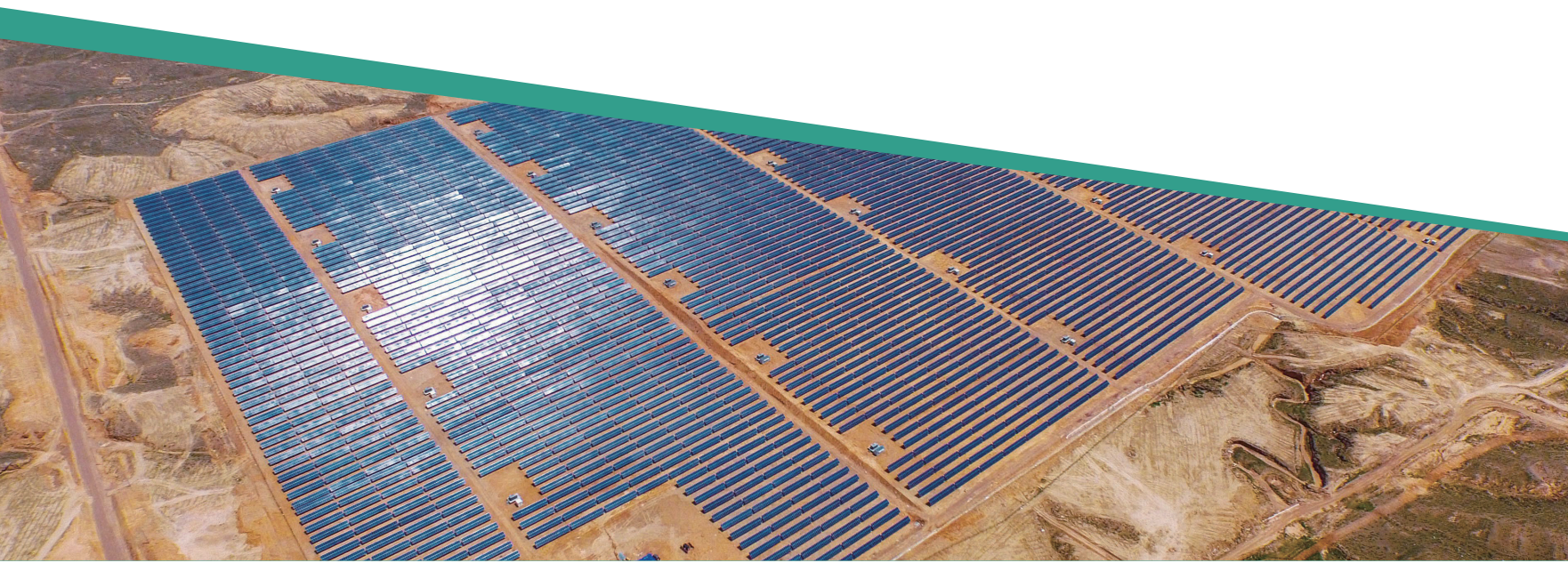
8 Disputes

In case of any discrepancy in a warranty-claim, a first-class international test-institute such as Fraunhofer ISE in Freiburg/ Germany, TÜV Rheinland in Cologne/ Germany or ASU Arizona State University shall be involved to judge the claim finally. All fees and expenses shall be borne by the losing party, unless otherwise awarded. The final explanation right shall be borne by Phono Solar.

9 Various

The repair or replacement of the Product(s) or the supply of additional Product(s), does not cause the beginning of new warranty terms, nor shall the original terms of this "Limited Warranty for PV-Modules" be extended. Any replaced Product(s) shall become the property of Phono Solar made for their disposal. Phono Solar has the right to deliver another type (different in size, color, shape and/or power) in case Phono Solar discontinued producing the replaced Product(s) at the time of the claim.

This Limited Warranty is based on and is conditional on the contract between Phono Solar and the customer, and should be incorporated into the contract agreement and bound by its terms. Both parties may amend the terms of the Limited Warranty through the contract. Phono Solar reserves the right to revise or update this Limited Warranty at any time without notice.



10 Warranty Transfer

The Customer can transfer the rights and obligations under this "Limited Warranty" to the subsequent project owner by informing Phono Solar in writing of this transfer of rights, provided that:

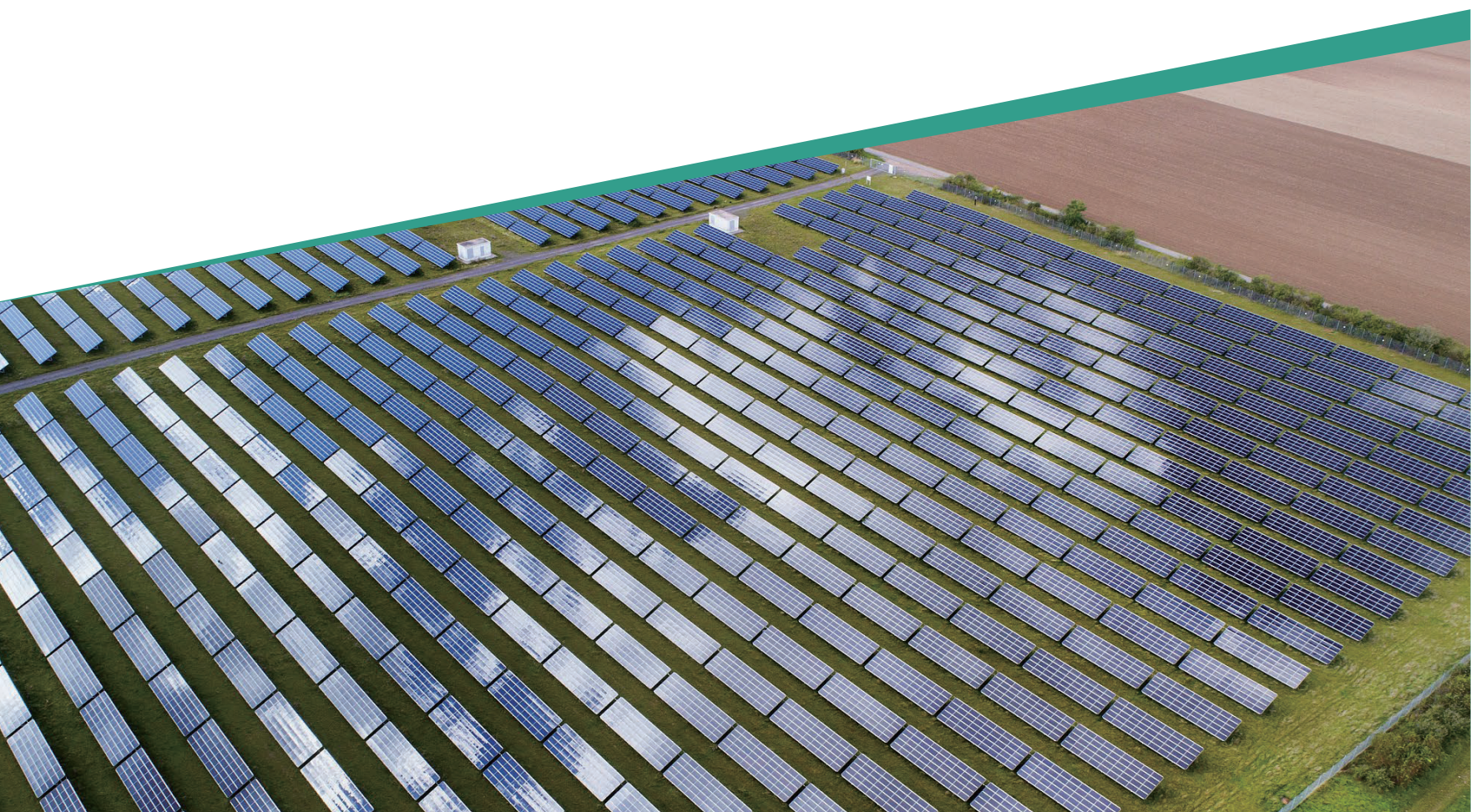
1. The module(s) remain at the initial installation site without being tempered with; and
2. The purchase price of the module(s) are fully paid to Phono Solar or other payable amounts (such as liquidated damages); and
3. Limited Warranty may be assigned in whole but not in part; and
4. The transferee agrees to be bound by all terms of this "Limited Warranty".

The rights of this "Limited Warranty" shall only be transferred if above mentioned requirements are fully met, otherwise, Phono Solar has the right to refuse to process the relevant demand for claims without any liability.

11 Force Majeure

Force Majeure refers to unforeseeable, unavoidable and insurmountable objective conditions in practice, including but not limited to war, riot, strike, epidemic, quarantine, traffic control and other social events; and earthquake, fire, flood, blizzard, hurricane, lightning, natural disaster and other natural disaster; or due to lack of adequate or adequate labor force, shortage of raw materials or inability to produce capacity, technology or output, or delay not caused by either Party due to delay of construction period due to approval delay of non-municipal supporting facilities; or the delay caused by national laws, regulations, administrative rules or orders and any unforeseeable events beyond the control of Phono Solar.

Upon occurrence of Force Majeure or its continuing, in sales or defective product warranty claim, Phono Solar cannot fulfill or delay in performance of its obligations under this "Limited Warranty", Phono Solar shall be free of any liability to the loss or damages incurred therefrom.





PHONO SOLAR TECHNOLOGY CO., LTD.

Address: No. 1 Xinghuo Road, Nanjing Hi-tech Zone,
Nanjing, Jiangsu Province, China

Tel: 86 25 5863 8000

Fax: 86 25 5863 8009

Web: <http://www.phonosolar.com>

Email: customersupport@sumec.com.cn

