

# Global Limited Warranty Terms and Conditions for Photovoltaic Modules

Issued on Feb. 14, 2025

Effective from Feb. 15, 2025

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**Issued by Sungrow Renewables Development Co., Ltd.**

## Preface

This Global Limited Warranty is managed by the Quality Management Department of the Photovoltaic Technology Division of Sungrow Renewables Development Co., Ltd.

This Global Limited Warranty was reviewed by Liang Jidong, Xu Ming, Tang Kun, Ou Yancong, Li Wenjun, Li Yue, Liao Guangming, Yan Feixiong, Jiang Jian, Zhou Ruidong, Chen Wei, Wu Shenfu, Zhu Lei, Chen Xianghong, Li Xin, Zhang Fan, Luo Quanhai, Xue Yuan.

This Global Limited Warranty shall be implemented from the date of approval. The Quality Management Department of the Photovoltaic Technology Division of Sungrow Renewables Development Co., Ltd. reserves the right of final interpretation of this Global Limited Warranty.

## Change History

No.	Change details	Prepared by	Version	Effective date
01	New document	Shen Pingping	1.0	2025-02-15

This warranty document applies to the following models:

Type	Module model		Dimension (mm)
Dual-glass series	Anodized aluminum alloy framed	SG-48TG4D-XXX	1762*1134*30
		SG-54TG1D-XXX	1722*1134*30
		SG-54TG4D-XXX	1961*1134*30
		SG-72TG1D-XXX	2278*1134*30
		SG-66TG4D-XXX	2382*1134*30
		SG-78TG1D-XXX	2465*1134*30
	Composite material framed	SG-48TG4D-XXX	1762*1134*30
		SG-54TG1D-XXX	1722*1134*30
		SG-54TG4D-XXX	1961*1134*30
		SG-72TG1D-XXX	2278*1134*30
		SG-66TG4D-XXX	2382*1134*30
		SG-78TG1D-XXX	2465*1134*30
Single-glass series	Anodized aluminum alloy framed	SG-48TT4D-XXX	1762*1134*30
		SG-54TT1D-XXX	1722*1134*30
		SG-54TT4D-XXX	1961*1134*30
		SG-72TT1D-XXX	2278*1134*30
		SG-66TT4D-XXX	2382*1134*30
		SG-78TT1D-XXX	2465*1134*30
		Composite material framed	SG-48TT4D-XXX
	SG-54TT1D-XXX		1722*1134*30
	SG-54TT4D-XXX		1961*1134*30
	SG-72TT1D-XXX		2278*1134*30
	SG-66TT4D-XXX		2382*1134*30
	SG-66TT4D-XXX (Dustproof)		2382*1134*30
	SG-78TT1D-XXX		2465*1134*30

Note:

1. XXX means the nominal power on the nameplate, graded by 5W. The power range depends on the certificate.
2. Due to product updates, the models may be added or changed without prior notice from Sungrow Renewables Development Co., Ltd.

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## 1 Warranty Coverage

1.1 Warranty for SG-54TG1D-XXX, SG-54TT1D-XXX, SG-54TG4D-XXX, SG-48TG4D-XXX, SG-54TT4D-XXX, SG-48TT4D-XXX (XXX means the nominal power on the nameplate, graded by 5W)

1.1.1 For Australian roof-top markets only, Sungrow Renewables Development Co., Ltd. (“Sungrow Renewables”) warrants for twenty-five (25) years following the Warranty Start Date (defined as Article 2) that the Sungrow Renewables modules in Article 1.1, when installed, used, and serviced under normal operating conditions will be free from any defects in materials and workmanship that have a significantly negative effect on the power output (“Limited Product Warranty”).

**If the Buyer has known or should have known about such defects in design, materials, workmanship or manufacturing before installing the modules, but fails to offer Sungrow Renewables the opportunity to correct such defects before installation, the Buyer shall be responsible for the additional costs incurred in correcting such defects after installation.**

This Limited Warranty includes a warranty for glass breakage that is not externally caused (e.g. breakage caused solely by the glass itself or modules).

Defects under this Limited Warranty do not include any cosmetic damages or other changes in the Sungrow Renewables modules’ appearance, including but not limited to, scratches, dirt, wear and tear, rust, mildew, deformation, or color changes after the modules are delivered to the Buyer.

1.1.2 To enjoy the Limited Product Warranty as stipulated under Article 1.1 above, the following application conditions shall be met:

- Application site: residential, industrial and commercial rooftop, installation location should be more than 500m away from the coastline;
- Environmental condition: monthly average temperature  $\leq 45$  °C, monthly average humidity  $\leq 85\%$  RH, the modules shall not be installed in sites with extremely harsh conditions, such as severe cold, heavy snow, strong wind or heavy salt-mist etc.
- Installation: Sungrow Renewables’ Installation and Maintenance Manual of PV Modules must be followed.

1.1.3 For modules in Article 1.1, Sungrow Renewables warrants for the power output loss for 30 years from the Warranty Start Date, that is, to compare the module’s minimum power output specified on the nameplate and the peak power output measured under standard test conditions (STC).

- The power output loss of P-type mono crystalline modules during the first twelve (12) months following the Warranty Start Date shall not exceed 2%, while that for N-type modules shall not exceed 1%. P-type mono crystalline modules have a yearly linear power output loss (or degradation) of not more than 0.45% from the 2<sup>nd</sup> year until the 30<sup>th</sup> year following the Warranty Start Date, while N-type modules have a yearly linear power output loss (or degradation) of not more than 0.4% for the same period. At the end of the 30<sup>th</sup> year following the Warranty Start Date, P-type mono crystalline modules produce at least 84.95% of the minimum power output specified on the nameplate, while N-type modules produce at least 87.4% of the minimum power output specified on the nameplate. The power output described above shall be measured under the standard test conditions (STC: irradiation 1000w/m<sup>2</sup>, cell temperature 25°C, AM1.5) and shall be validated by Sungrow Renewables or a third-party institute approved

by Sungrow Renewables and the Buyer (note: Under STC, measurement of the power output includes uncertainty of the measurement and test system). To avoid doubts, the warranty for power output only applies to front power output. Power loss rate = (minimum power output specified on the nameplate – actual power output)/ minimum power output specified on the nameplate\*100%.

1.2 Warranty for SG-72TG1D-XXX, SG-66TG4D-XXX, SG-78TG1D-XXX, SG-72TT1D-XXX, SG-66TT4D-XXX, SG-78TT1D-XXX (XXX means the nominal power on the nameplate, graded by 5W)

1.2.1 Sungrow Renewables Development Co., Ltd. (“Sungrow Renewables”) warrants for fifteen (15) years following the Warranty Start Date (defined as Article 2) that the Sungrow Renewables modules in Article 1.2, when installed, used, and serviced under normal operating conditions will be free from any defects in materials and workmanship that have a significantly negative effect on the power output.

**If the Buyer has known or should have known about such defects in design, materials, workmanship or manufacturing before installing the modules, but fails to offer Sungrow Renewables the opportunity to correct such defects before installation, the Buyer shall be responsible for the additional costs incurred in correcting such defects after installation.**

This Limited Warranty includes a warranty for glass breakage that is not externally caused (e.g. breakage caused solely by the glass itself or modules).

Defects under this Limited Warranty do not include any cosmetic damages or other changes in the Sungrow Renewables modules’ appearance, including but not limited to, scratches, dirt, wear and tear, rust, mildew, deformation, or color changes after the modules are delivered to the Buyer.

1.2.2 For modules in Article 1.2, Sungrow Renewables warrants for the power output loss for 25 years (for single-glass modules) or 30 years (for dual-glass modules) from the Warranty Start Date, that is, to compare the module’s minimum power output specified on the nameplate and the peak power output measured under standard test conditions (STC).

➤ For single-glass modules: the power output loss of P-type mono crystalline modules during the first twelve (12) months following the Warranty Start Date shall not exceed 2%, while that for N-type modules shall not exceed 1%. P-type mono crystalline modules have a yearly linear power output loss (or degradation) of not more than 0.55% from the 2<sup>nd</sup> year until the 25<sup>th</sup> year following the Warranty Start Date, while N-type modules have a yearly linear power output loss (or degradation) of not more than 0.4% for the same period. At the end of the 25<sup>th</sup> year following the Warranty Start Date, P-type mono crystalline modules produce at least 84.8% of the minimum power output specified on the nameplate, while N-type modules produce at least 89.4% of the minimum power output specified on the nameplate.

➤ For dual-glass modules: the power output loss of P-type mono crystalline modules during the first twelve (12) months following the Warranty Start Date shall not exceed 2%, while that for N-type modules shall not exceed 1%. P-type mono crystalline modules have a yearly linear power output loss (or degradation) of not more than 0.45% from the 2<sup>nd</sup> year until the 30<sup>th</sup> year following the Warranty Start Date, while N-type modules have a yearly linear power output loss (or degradation) of not more than 0.4% for the same period. At the end of the 30<sup>th</sup> year following the Warranty Start Date, P-type mono crystalline modules produce at least 84.95% of the minimum power output

specified on the nameplate, while N-type modules produce at least 87.4% of the minimum power output specified on the nameplate.

The power output described above shall be measured under the standard test conditions (STC: irradiation 1000w/m<sup>2</sup>, cell temperature 25°C, AM1.5) and shall be validated by Sungrow Renewables or a third-party institute approved by Sungrow Renewables and the Buyer (note: Under STC, measurement of the power output includes uncertainty of the measurement and test system). To avoid doubts, the warranty for power output only applies to front power output. Power loss rate = (minimum power output specified on the nameplate – actual power output)/ minimum power output specified on the nameplate\*100%.

## 2 Warranty Start Date

Warranty Start Date begins on the 90<sup>th</sup> calendar day following the Sungrow Renewables modules leaving the factory or begins on the first day of initial installation (meaning the original Buyer installs the modules, no reselling), whichever is earlier.

## 3 Warranty Exclusions

This Limited Warranty **shall not apply to** any Sungrow Renewables modules affected by the following events or conditions:

- Buyer fails to pay to Sungrow Renewables or its affiliated companies which sell the modules (either total or part of accounts payable).
- Buyer fails to provide proof of purchase or product information.
- Buyer fails to follow Sungrow Renewables' instructions in the *Installation and Maintenance Manual of PV Modules* when operating the modules, including but not limited to product unpacking/packing, loading/unloading, transport, storage, installation, usage, operation or maintenance.
- Misuse, abuse, neglect, intentional damage, or accident.
- Improper or inadequate service, operation or maintenance of the modules.
- Service to the modules by a technician or organization who is considered unqualified under the relevant laws and regulations of the place of installation.
- Product model, serial number or product label has been removed, changed or made unrecognizable.
- The modules are installed on any mobile carriers (except for PV tracking systems with the express consent of Sungrow Renewables) such as motor vehicles, ships or offshore structures (except for water surface floating systems and pile systems of fishery-solar hybrid projects with the prior written consent of Sungrow Renewables).
- Voltage exceeds the specified maximum system voltage or electric surge.
- The building structure on which the modules are installed has defects.
- The modules are removed and re-installed at any location other than the physical location in which it was originally installed.
- Unauthorized repair, operation or maintenance using unauthorized spare parts.

- The modules are corroded, oxidized, or affected by chemicals due to usage in extreme heat (temperature exceeding the specified working temperature of the modules) or extreme environmental conditions, or rapid changes in the environment.
- Damage caused directly or indirectly by acts or events beyond Sungrow Renewables' reasonable control, including but not limited to war, fire, flood, volcanic eruption, ground collapse, mudslide, lightning, earthquake, blizzard, hailstorm, strong winds, or caused by any third party (including a natural person or an animal).
- Usage of the modules causes infringement on the intellectual property rights of Sungrow Renewables or any third party, including but not limited to patents and trademarks.
- Resell the modules from the original destination country to another country without Sungrow Renewables' prior consent.
- In China, the modules are not bought from Sungrow Renewables, its affiliate companies or authorized agents (except with Sungrow Renewables' prior approval).
- Damage or failure of usage not attributable to Sungrow Renewables.

#### 4 Remedies of Repair, Replacement or Refund

As the Buyer's sole and exclusive remedy under this Global Limited Warranty, Sungrow Renewables may, at its discretion, decide one of the following solutions for applicable modules:

1) Determine the repair solutions, and repair the defect.

2) Compensate for the difference between the measured power output at STC and the warranted power output by way of refund.

Monetary compensation = market price at the time of compensation (per watt) \* (total remaining warranted power output - total measured power output at STC)

3) Compensate for the remaining value of the modules by way of refund.

Residual value of the modules = market price at the time of compensation (per watt) \* nominal power \* remaining warranted period/whole warranted period

Remaining warranted period means the whole power warranty period (25 years for single-glass modules and 30 years for dual-glass modules) minus the number of calendar days that have elapsed since the start of the warranty period.

4) Provide additional modules to make up for the difference between the measured power output at STC and the warranted power output. In the event that the same model as the defective module is no longer available, Sungrow Renewables can provide other models of modules, and such modules may differ in size, color, shape or nominal power from the defective module.

5) Provide a replacement module in place of the defective module. The total nominal power of the module used for replacement shall not be less than the total remaining warranted power output of the replaced module.

**Notice:**

1) Within the warranty period, if Sungrow Renewables determines to repair or replace the defective module, Sungrow Renewables shall be responsible for the direct costs incurred from the repair and shipping costs incurred for delivering

the repaired, replacement or additional module to the Buyer, excluding insurance costs, air freights, customs clearance charges, customs duties, and other additional costs not attributable to the Seller, such as demurrage and warehousing costs caused due to the Buyer's or the end user's omission in dealing with the issue. The Buyer shall be solely responsible for all costs incurred from dismantling, handling, repackaging, installing or reinstalling the module during repair or replacement and other related expenses thereof.

- 2) If the warranty period expires, the Buyer shall be responsible for all reasonable material costs, labor costs, customs clearance charges and expenses for dismantling, handling, repackaging, installing or reinstalling the module.
- 3) If the Buyer discovers a defect and requires to return the defective module before Sungrow Renewables begins to deal with the case, the costs shall be borne by the Buyer first. In the case that a third-party testing institute confirms that the defect is a breach of this Limited Warranty, Sungrow Renewables shall bear the freights based on the original receipt or invoice for such costs provided by the Buyer.
- 4) If the solution is to repair or replace the defective module or provide additional modules, the warranty term of such repaired, replacement or additional modules shall not be extended, and it will be the remaining warranty term of the original modules.
- 5) The above remedies are the sole and exclusive remedies provided by Sungrow Renewables to the Buyer under this Global Limited Warranty, except that Sungrow Renewables shall not be liable for any special, consequential, or incidental losses or personal injuries, including profit loss, business interruption risk, loss of goodwill, loss of business reputation or loss of delay.
- 6) The Buyer is entitled to file claims under the terms of this Global Limited Warranty. If the Buyer files multiple claims for the same cause of action, Sungrow Renewables shall be deemed to have resolved all applicable claims arising out of such cause of action when Sungrow Renewables has indemnified the Buyer for such cause of action in accordance with the terms of this Global Limited Warranty (i.e., the Buyer shall not be entitled to receive duplicative indemnification for the same cause of action).
- 7) Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

## **5 Rights and Remedies Against Third Parties**

This Global Limited Warranty shall be construed as a separate warranty, independent of any other contracts with third parties with respect to Sungrow Renewables modules. This Global Limited Warranty does not affect any rights, obligations or remedies of Buyer with respect to third parties arising out of defects or nonconformities of the modules, regardless of the legal basis on which such rights, obligations and remedies are based. All rights and remedies set forth in this Global Limited Warranty are independent of any other rights and remedies that Buyer may have against third parties pursuant to its agreements with such third parties or by law.

## **6 Claims Procedure, Notice Period, Invalidity and Limitation of Warranty Claims**

The Buyer's notice of claim shall include a clear request for a claim, and the Buyer shall provide written proof of the claim, including (i) the purchase invoice with the date of purchase, (ii) product details, (iii) a detailed description of the claim, (iv) serial numbers of all affected modules (in an editable form such as an Excel document), (v) evidence of all affected modules including photographs and data, and (vi) any other additional information or evidence reasonably requested by Sungrow Renewables.

With respect to any warranty claim for defective modules under this Global Limited Warranty, disputes of technical facts relating to such claim shall be examined by experts. Sungrow Renewables and the Buyer may designate a reputable research institute among authoritative testing institutes recognized by both parties, such as CPVT China, TÜV SÜD, etc., to serve as an independent expert and appraiser (the "Technical Expert"). The decision of the Technical Expert shall be final, conclusive and binding and may be enforced in any proceedings brought under this Global Limited Warranty.

All costs shall be borne by the losing party, and unless otherwise specified, Sungrow Renewables reserves the right of final interpretation.

Claims shall be made within two months following the discovery of a breach under this Global Limited Warranty. Sungrow Renewables will not accept any returned modules without its prior written authorization.

## **7 Force Majeure**

Sungrow Renewables shall not be liable to the Buyer for any failure to perform or delay in performance of its obligations under this Global Limited Warranty if the failure is due to force majeure such as war, riots, strikes, lightning, flood, fire, power surges, power failures, lack of proper or sufficient labor, material or production capacity, technical or production inability, and any unforeseen event beyond Sungrow Renewables' control, including but not limited to, any technical or physical event or condition that Sungrow Renewables could not reasonably have known of or been aware of at the time of sale of defective modules or filing of a warranty claim.

## **8 Assignment of Warranty Rights**

The Buyer may assign its rights under this Global Limited Warranty to a new owner upon written notice to Sungrow Renewables, provided that:

- The modules remain intact at the original place of installation.
- There are no remaining amounts owed or otherwise payable (e.g., liquidated damages) under the contract for the sale of the modules.
- The assignment shall be in whole and not in part.
- The assignee agrees to be bound by all the terms of this Global Limited Warranty.

If the Buyer requires to assign its rights under this Global Limited Warranty, it shall, within 15 working days from the date of receipt of the notice from the Sungrow Renewables, provide reasonable evidence of the succession or transfer of ownership and issue, at the request of Sungrow Renewables, a document certifying that the new owner agrees to be

bound by all the terms of this Global Limited Warranty, otherwise Sungrow Renewables has the right to refuse to deal with the relevant claims and shall not be liable for any responsibility therefrom.

Except for the above, this Global Limited Warranty shall not be assigned. Any assignment in violation of this Article shall not be binding on Sungrow Renewables, and Sungrow Renewables has the right to refuse to deal with the relevant claims and shall not be liable for any responsibility therefrom.

## **9 Scope of Warranty**

This Global Limited Warranty applies to Class A modules sold to the Buyer after it is issued, subject to the date of the sales contract.

This Global Limited Warranty shall remain in effect until any updated version is issued by Sungrow Renewables.

## **10 No Other Express Warranties**

Unless otherwise provided by applicable law or unless otherwise agreed between Sungrow Renewables and the Buyer with respect to the warranty, this Global Limited Warranty is the only express warranty, whether written or oral, made by Sungrow Renewables with respect to the modules. No person has the right to limit, extend or otherwise modify this Global Limited Warranty.

## **11 Severability Clause**

If any provision of this Global Limited Warranty is held to be invalid, unenforceable or illegal, the other provisions of this Global Limited Warranty shall continue in full force and effect.

## **12 Limitation of Liability**

To the maximum extent permitted by applicable law, in the event of a claim, Sungrow Renewables' total liability under this Global Limited Warranty shall not exceed the total purchase price paid by the Buyer for the defective module. The Buyer shall admit that this limitation of liability is an essential element of this Global Limited Warranty.

## **13 Remarks**

The installation and operation of PV modules requires specialized skills and shall only be performed by qualified professionals or organizations. Before using and operating modules, please read the safety precautions and installation instructions. See *Installation and Maintenance Manual of PV Modules* for details.

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### **Manufacturer:**

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