



**CONERGY**

**PremiumPlus- The Premium warranty  
for Conergy PowerPlus solar modules**

Guide

Global Product Management - January 16th, 2012

# What is the difference between a Conergy premium module and a competitor's premium module/ a value module in 2012?



**Conergy PowerPlus**

**vs.**



**Competitor's Premium module/  
Competitor's Value module**

**→ The warranty conditions!**

# Introducing... PremiumPlus- The Premium warranty for Conergy PowerPlus solar modules

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- | Currently all modules on the market are more or less technically comparable\*
  
- | But Quality & Service remain the differing features of a premium manufacturer and seller like Conergy AG
  
- | In order to optimize customers satisfaction, we are consequently introducing:
  - | **fair,**
  - | **transparent** and
  - | **customer- friendly Premium warranty conditions**

\* Regarding features like: efficiency; power classes; positive power tolerance; 10years product warranty; additional certificates such as hail, ammonia and salt resistance; loads of  $\geq 5400\text{Pa}$ ; short side clamping etc.

## At a glance: PremiumPlus- The premium warranty for Conergy PowerPlus solar modules

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- | 12 years product warranty; linear power warranty
- | Clearly formulated and transparent, accommodating warranty conditions
- | Delivery of identical replacement modules within product warranty time
- | Overtaking of costs related to transport, de- installation and new installation
- | Acceptance of decisions of independent institutes/ consultants in warranty case
- | Transfer of warranty to third party
- | Customer needs to register online to obtain these warranty conditions ([www.conergy.com/PremiumPlus](http://www.conergy.com/PremiumPlus))

**In detail: What is included in the  
new PremiumPlus warranty?**

## With 12 years product warranty Conergy sets a new market standard

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- | 10 years product warranty is market standard
- | Since Conergy has confidence in its premium products, we offer our customers 2 additional years product warranty
- | With this **12 year product warranty** Conergy sets a new standard for the whole PV industry

### **With the linear power warranty Conergy puts itself at the top end of power warranties in the PV industry**

- | In year 1 we guarantee a degradation of power output less than 3,5%
- | For each following year we guarantee a degradation of less than 0,6% p.a. until year 25.

**But the most important warranty conditions are not given out in figures. The important point is how a warranty case is treated.**

**So let's take a closer look and compare!**

## Identification of power degradation

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- | *What do competitors do? What is the market standard?*
  - | Most competitors reserve the right to define power degradation according to own measurements. In some cases manufacturers even go to the extent to **only(!)** acknowledge own measurements.
  
- | *What is the problem?*
  - | This is a clear disadvantage for the customer, since a warranty claim will not be decided by an independent body, but only if the manufacturer feels like it.
  
- | *How does the PremiumPlus warranty solve this?*
  - | The new PowerPlus warranty states that the customer can nominate (IECEE accredited) independent consultants or testing institutes

# Acceptance of optical deviations

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- | *What do competitors do? What is the market standard?*
  - | Normally, competitors do not accept optical deviations as warranty claims. A claim can only be made if the functionality of the installation is not given anymore.
  
- | *What is the problem?*
  - | If modules deviate optically an installation may not be aesthetically pleasing anymore, especially if it is an on- roof installation. After all, a PV installation should be an investment for at least 25 years and you pay for aesthetics, too, especially for a premium product.
  
- | *How does the PremiumPlus warranty solve this?*
  - | Conergy accepts optical deviations, if they go beyond natural degradation of materials. That is how Conergy warrants a homogenous and uniform looking installation for at least 25 years.

## Delivery of identical replacement modules

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- | *What do competitors do? What is the market standard?*
  - | Many competitors do not define the module replacement procedure. Some competitors reserve the right to use non- identical modules with different measurements, different power output, different colors etc. or they pay a financial compensation for failed modules.
  
- | *What is the problem?*
  - | If the manufacturer fails to deliver identical replacement modules, the installation will never be the same as before, neither electrically nor optically. In extreme cases this will lead to power losses in comparison to the original installation. If the customer only receives a monetary compensation for failed modules, this does not bring the installation back to its working performance again.
  
- | *How does the PremiumPlus warranty solve this?*
  - | Conergy either repairs the defect module(s) or replaces it/them with identical ones.
  - | For each production year Conergy puts a fixed share of modules aside in a replacement pool in the central warehouse. In this way we can guarantee the delivery of identical replacement modules within the product warranty time!

# Overtaking of costs associated with replacement of modules

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- | *What do competitors do? What is the market standard?*
  - | Over 90% of all manufacturers do not replace any costs associated with justifiable warranty cases.
  - | Some competitors replace the costs associated with transportation of modules, only.
  
- | *What is the problem?*
  - | Overtaking of costs associated with replacement of modules is not market standard. Costs associated with installation and de- installation of modules are not compensated for. The customer has to pay for the transportation, power check by an institute and installation of replacement modules himself.
  
- | *How does the PremiumPlus warranty solve this?*
  - | In justified warranty cases Conergy will - in agreement with the customer - bear the costs associated with de- installation, inspection and recycling of defect modules as well as the costs of the new installation and transportation of replacement modules.

## Financial compensation in warranty case

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### | *What do competitors do? What is the market standard?*

- | Some competitors offer their customer a small monetary compensation for power loss, which often has no use for the customer, since it does not compensate in full for total yield losses.
- | In case there is a warranty case for the whole installation, the customer receives the purchasing price as a monetary compensation. This is common practice in the market, too.

### | *What is the problem?*

- | A financial compensation even of the purchasing price does not bring the projected yield of the installation back. Consequently the customer's expected rate of return diminishes and he has a financial compensation and a defect installation on the roof.

### | *How does the PremiumPlus warranty solve this?*

- | Conergy does not offer financial compensation, but either repairs the defect module(s) or replaces it/them with identical ones.

## Delivery of additional modules

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- | *What do competitors do? What is the market standard?*
  - | More than 80% of all manufacturers equal the power degradation of modules with the delivery of extra modules.
  
- | *What is the problem?*
  - | In most cases additional modules will not fit into the already existing PV installation set- up, since mounting system and inverter have not been designed for additional modules. The extra delivered modules are worthless for the customer and power degradation is not compensated for.
  
- | *How does the PremiumPlus warranty solve this?*
  - | Conergy does not deliver additional modules in warranty case, but either repairs the defect module(s) or replaces it/them with identical ones.

# Settlement of dispute

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- | *What do competitors do? What is the market standard?*

- | In case of dispute most manufacturers do not accept other opinions than their own. They are the ones to decide if a warranty case is justified or not. In other warranty conditions the procedure in case of a warranty is not described at all.

- | *What is the problem?*

- | In order to make his claim, the customer needs to go to court against the manufacturer to obtain his right.

- | *How does the PremiumPlus warranty solve this?*

- | In case of a warranty dispute Conergy will accept the settlement by an independent testing institute or consultant.

## Transfer of warranty to third parties

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- | *What do competitors do? What is the market standard?*
  - | In case an installation is sold to a third party that is unknown to the manufacturer, warranty conditions will become invalid.
  
- | *What is the problem?*
  - | The customer has a clear disadvantage in case he has to sell his installation.
  
- | *How does the PremiumPlus warranty solve this?*
  - | With the new PremiumPlus warranty conditions Conergy will accept the transfer to third parties. Therefore the owner change has to be made on the Conergy registration website within 30 days under: [www.conergy.com/PremiumPlus](http://www.conergy.com/PremiumPlus)

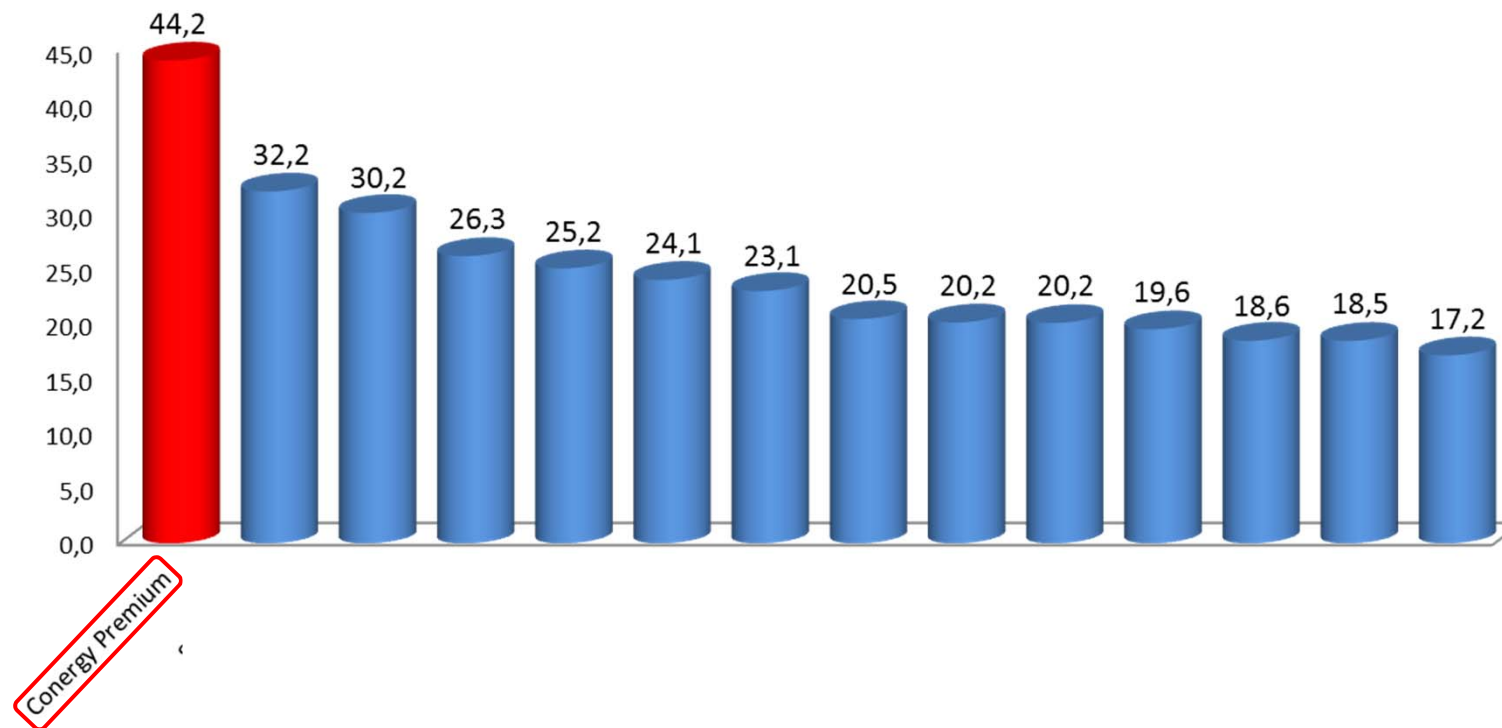
## Customer friendliness in general

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- | *What do competitors do? What is the market standard?*
  - | Warranty conditions in the PV industry are not customer friendly.
  
- | *What is the problem?*
  - | The customer is always at a disadvantage in case of a warranty claim.
  
- | *How does the PremiumPlus warranty solve this?*
  - | The Conergy PremiumPlus warranty is transparent, accomodating and fair towards the customer.

## Customer friendliness in general

- | Taking into account PHOTON magazine's warranty comparison from 2010, calculated with the new PremiumPlus warranty reveals:
- | The Conergy warranty comes in first among all competitors warranties in the PV industry with an advantage of 10 points before the second best!



## **Overview: PremiumPlus vs. Competitors**





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# Overview : PremiumPlus vs. Competitors

	Conergy Premium	A	B	C	D	E	F	G	H	I	J	K	L	M
<b>Product warranty:</b> is a financial compensation offered?	no	yes, purchasing price at time of module claimed	no	yes	yes	yes	no	yes	no	yes, time value of the module	yes	yes, current replacement value, reduced by an annual linear amount of depreciation	no	yes, purchasing price
<b>Performance warranty:</b> is a financial compensation offered?	no	yes, percentage of the power output, based on the current market price	yes, purchasing price, reduced by an annual amount of depreciation	no	yes	yes	yes, purchasing price, reduced by an annual linear amount of depreciation	yes	no	yes	yes	yes, current market price, reduced by an annual linear amount of depreciation	yes, percentage of the power output, based on the purchasing price	yes, purchasing price
Are substitute products electrically and mechanically identical?	yes	no	not defined	no	not defined	not defined	no	not defined	no	not defined	no	not defined	not defined	not defined



# Overview : PremiumPlus vs. Competitors

	Conergy Premium	A	B	C	D	E	F	G	H	I	J	K	L	M
Are the transport costs borne by the manufacturer?	yes	no	no	no	yes	no	no	no	only transport costs of the replacement	no	not defined	no	yes	no
Are the installation costs borne by the manufacturer?	yes	no	no	no	no	no	no	no	no	no	not defined	no	no	no
Are the disposal costs borne by the manufacturer?	yes	no	no	no	no	no	no	no	no	not defined	not defined	no	no	no
Are the costs of evidence borne by the manufacturer?	yes	no	no	not defined	yes	no	not defined	no	no	not defined	not defined	no	yes	not defined
<b>Replacement Terms evaluation</b>														
Where do the modules have to be sent to in case of a claim?	Germany	China	Germany	China	China	Germany	not defined	Germany	China	Germany	Germany	Germany	Germany	Germany
Period of notification in case of obvious defects	2 months	immediately	6 months	immediately	immediately	not defined	not defined	15 days	immediately	6 weeks	3 months	10 days	immediately	not defined
<b>Process evaluation</b>														
<b>Overall evaluation</b>	customer friendly warranty conditions	customer unfriendly warranty conditions	customer unfriendly warranty conditions	customer unfriendly warranty conditions	customer unfriendly warranty conditions	average warranty conditions	customer unfriendly warranty conditions	customer unfriendly warranty conditions	average warranty conditions	average warranty conditions	average warranty conditions	average warranty conditions	average warranty conditions	average warranty conditions

## Noteworthy Findings (1/2)

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### | Competitor C

The measurement tolerances given by Competitor C with +/- 1,5% are unrealistic and not applicable in production. No other competitor provides such narrow tolerances. This seems to be a clear marketing activity, which is not backed up technically.

### | Competitor M

Competitor M guarantees an unrealistic linear power degradation of -1% in the first year. This is technically not feasible and contradictory to all findings of current scientific literature on power degradations of crystalline modules.

## Special Findings (2/2)



### | Competitor H


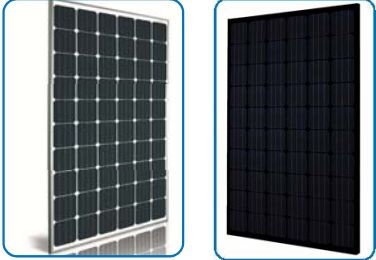

Competitor H has the same product and power warranty, **BUT do not be deceived!**

There is a huge difference in the warranty conditions. The PremiumPlus warranty shows a significant advantage in transparency and customer- friendliness. The following examples of the Competitor H warranty make it very clear:

- | The product and performance warranty starts with the modules leaving the manufacturer's production site
- | All optical deviations of modules are excluded
- | Competitor H reserves the right to pay a compensation fee for defect modules or to deliver additional modules (not replacement modules)
- | In dispute an independent Institute decides about the claim – costs are to be borne by the manufacturer and the customer and If modules are not produced anymore at time of warranty claim, Competitor H will deliver modules with other measures, colors or power class
- | In justified warranty cases Competitor H only bears the transportation costs until the port of destination defined in the supplier contract. Other costs are not overtaken.

# The Conergy premium products at a glance



			
Product name:	<b>PowerPlus 2xxP</b>	<b>PowerPlus 2xxM (Noir)</b>	<b>PowerPlus xxxMC</b>
Power:	230 – 250 Wp	245 – 260* Wp	190 – 205 Wp
Efficiency:	13,82 – 15,36%	15,05 – 15,97%	14,43 – 15,57%
Power Tolerance:	-0/+3%	-0/+3%	-0/+3%
Linear power warranty:	>82% in year 25	>82% in year 25	>82% in year 25
Product warranty:	12 years	12 years	12 years
Number of cells:	60 cells	60 cells	48 cells
Cell type:	Poly	Mono	Mono
Size:	1651 x 986 x 46 mm	1651 x 986 x 46 mm	1328 x 990 x 46 mm
Load:	6000 Pa	6000 Pa	6000 Pa
Country of origin:	Germany	Germany	Germany

\* One power class less for Conergy PowerPlus 2xxM Noir edition



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**Our world is full of energy.**