



Simplified Carbon Evaluation Simulation by PINK Strategy - Methodology CRE4 Losses V2

1 version DE0629_LR5-54/72HTH , supply Yongxiang+Yinchuan3+Taizhou/Shaanxi/Xixian+Taizhou dated

This simulation is based on information communicated by the module manufacturer in good faith. It is compliant with French Public tenders calculations specifications mentionned and does not replace a formal certificat.

Product covered by the simulati

Monofacial modules MONO cells: LR5-54HTHxxxM - 108 half-cells - 425Wp to 450Wp

Owner of the certificat:	Module production site:	Cell production site:	Wafer production site:
LONGI Solar Technology Co., Ltd. No.8369 Shangyuan Road, Xi'an Economic And Technological Development Zone Xi'an Shaanxi China	LONGI Solar technology (Taizhou) Co. Ltd (Module) No.8 Taikang Road, Hailing Industrial Estate, Hailing District Taizhou East Jiangsu Province China	LONGI Solar Technology (Shaanxi) Co., Ltd. No.19, West section of Jinghuan North Road, Xi'an Economic and Technological Development Zone Xi'anShaanxi China LONGI Solar technology (Taizhou) Co. Ltd (Cell) No. 268 xingtai South Road, Hailing Industrial Estate, Hailing District Taizhou CityJiangsu Province China LONGI Solar Technology (Xixian New Area) Co., Ltd No. 215, Jinggan 2nd Street Xixian New Area Xixian New AreaShaanxi China	Yinchuan LONGi Silicon Materials Co., Ltd. (3rd Factory) No.373, Liupanshan West Rd, Xixia Economic & Technological Development Zone Yinchuan Ningxia China

Key data used:

Thickness Glass (mm):	3,2	Thickness wafer (µm):	155	Thickness PET (µm):	350
Length Glass (mm):	1716	Width Wafer (mm):	182	Density PET (kg/m3):	1400
Density Glass (kg/m3):	2500	Length wafer (mm):	#####	Thickness PVF (µm):	0
Width Glass (mm):	1128	Number of cells:	54	Density PVF (kg/m3):	1400
		Thickness EVA (µm):	810	Thickness POE (µm):	0
		Density EVA (kg/m3):	963	Density POE (kg/m3):	963

Module inventory:

Process	Unité	Module inventory	Module inventory with
MG-Silicon	Kg	0,652	0,000
SoG-Silicon	Kg	0,652	1,918
Ingot	Kg	0,652	1,844
Brick	Kg	0,652	0,000
Wafer	m²	1,806	1,897
Cell	m²	1,806	1,842
Photovoltaic module	m²	1,936	1,936
Flat glass	Kg	15,485	15,640
Tempered glass	Kg	15,485	15,640
Encapsulant (EVA)	Kg	1,510	1,525
Encapsulant (POE)	Kg	0,000	0,000
Backsheet (PET)	Kg	0,948	0,958
Backsheet (PVF)	Kg	0,000	0,000

Production sites and values used:

Process	Site / Region	Country	Ratio	Unit	ACV value	CRE value
SoG-Silicon	Leshan City-Sichuan province	China	67%	kgCO2e/kg	83,332	141,023
SoG-recycling	Yinchuan-Ningxia	China	33%	kgCO2e/kg	0,449	141,023
Ingot	Yinchuan-Ningxia	China	100%	kgCO2e/kg	17,706	80,345
Wafer	Yinchuan-Ningxia	China	100%	kgCO2e/pM0eq	0,109	1,064
Cell	Xi'an-Shaanxi	China	33%	kgCO2e/pM0eq		0,52
Cell	Taizhou City-Jiangsu Province	China	33%	kgCO2e/pM0eq		0,52
Cell	Jinghe New City-Shaanxi	China	33%	kgCO2e/pM0eq		0,52
Photovoltaic module	Taizhou East-Jiangsu Province	China	100%	kgCO2e/m2	6,79	11,446
Flat glass		China	100%	kgCO2e/kg		1,164
Tempered glass		China	100%	kgCO2e/kg		0,243
Encapsulant (EVA)		China	100%	kgCO2e/kg		2,915
Backsheet (PET)		China	100%	kgCO2e/kg		2,821
Backsheet (PVF)		China	100%	kgCO2e/kg		25,892

Details of calculation:

Power in Wp

Process	425	430	435	440	445	450								
SoG-Silicon	252,7	249,7	246,9	244,0	241,3	238,6								
Ingot	76,8	75,9	75,1	74,2	73,4	72,6								
Wafer	14,6	14,4	14,2	14,1	13,9	13,7								
Cell	92,6	91,5	90,5	89,4	88,4	87,5								
Photovoltaic module	30,9	30,6	30,2	29,9	29,5	29,2								
Flat glass	42,8	42,3	41,9	41,4	40,9	40,5								
Tempered glass	8,9	8,8	8,7	8,6	8,5	8,4								
Encapsulant (EVA)	10,5	10,3	10,2	10,1	10,0	9,9								
Backsheet (PET)	6,4	6,3	6,2	6,1	6,1	6,0								
Backsheet (PVF)	0,0	0,0	0,0	0,0	0,0	0,0								
TOTAL	536,2	529,9	523,8	517,9	512,1	506,4								
Rounded score	550,0	550,0	500,0	500,0	500,0	500,0								

Liste of CRE call to tenders covered:

Power in Wp

Tenders		425	430	435	440	445	450
Fessenheim	2nd Period	55%	55%	59%	59%	59%	59%
Fessenheim	3rd Period	55%	55%	59%	59%	59%	59%
Ground-mounted projects	10rd Period	55%	55%	59%	59%	59%	59%
Ground-mounted projects	1st Period	E.	E.	E.	E.	E.	E.
Ground-mounted projects	2nd Period	E.	E.	E.	E.	E.	E.
Ground-mounted projects	3rd Period	E.	E.	E.	E.	E.	E.
Ground-mounted projects	6rd Period	55%	55%	59%	59%	59%	59%
Ground-mounted projects	7rd Period	55%	55%	59%	59%	59%	59%
Ground-mounted projects	8rd Period	55%	55%	59%	59%	59%	59%
Ground-mounted projects	9rd Period	55%	55%	59%	59%	59%	59%
Innovation	1st Period	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.
Neutral	1st Period	E.	E.	E.	E.	E.	E.
Open-window mechanism	1st Period	E.	E.	E.	E.	E.	E.
Overseas projects (ZNI)	1st Period	23%	23%	31%	31%	31%	31%
Overseas projects (ZNI)	2nd Period	23%	23%	31%	31%	31%	31%
Overseas projects (ZNI)	3rd Period	23%	23%	31%	31%	31%	31%
Overseas projects (ZNI)	4rd Period	23%	23%	31%	31%	31%	31%

Strictly confidential

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PINK Strategy

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Overseas projects (ZNI)	5rd Period	23%	23%	31%	31%	31%	31%
Overseas projects (ZNI)	6rd Period	23%	23%	31%	31%	31%	31%
Roof-mounted projects	10rd Period	52%	52%	57%	57%	57%	57%
Roof-mounted projects	11rd Period	52%	52%	57%	57%	57%	57%
Roof-mounted projects	12rd Period	52%	52%	57%	57%	57%	57%
Roof-mounted projects	13rd Period	52%	52%	57%	57%	57%	57%
Roof-mounted projects	1st Period	E.	E.	E.	E.	E.	E.
Roof-mounted projects	2nd Period	E.	E.	E.	E.	E.	E.
Roof-mounted projects	3rd Period	E.	E.	E.	E.	E.	E.
Roof-mounted projects	4rd Period	E.	E.	E.	E.	E.	E.
Roof-mounted projects	7rd Period	53%	53%	58%	58%	58%	58%
Roof-mounted projects	8rd Period	53%	53%	58%	58%	58%	58%
Roof-mounted projects	9rd Period	52%	52%	57%	57%	57%	57%
Self-consumption	10rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	11rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	12rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	1st Period	E.	E.	E.	E.	E.	E.
Self-consumption	2nd Period	E.	E.	E.	E.	E.	E.
Self-consumption	3rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	4rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	5rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	6rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	7rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	8rd Period	E.	E.	E.	E.	E.	E.
Self-consumption	9rd Period	E.	E.	E.	E.	E.	E.
Self-consumption - Overseas tenders (	1st Period	E.	E.	E.	E.	E.	E.
Self-consumption - Overseas tenders (	2nd Period	E.	E.	E.	E.	E.	E.

E.: Eligible for this tender

N.E.: Not Eligible for this tender

% score: grade on 100% of the carbon score achieved for this tender