SOLAR FRONTIER

Competitive Advantages of CIS Technology from Solar Frontier

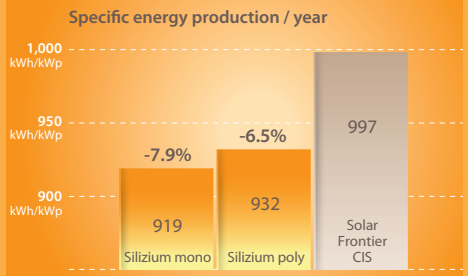
The figures of the test sites are convincing.

Since several years we entrust customers, independent organizations and testing centers like Fraunhofer Institut with the performance monitoring of our modules. In an often opaque PV market we would like to make our contribution to more transparency and comparability. The following examples prove the extraordinary performance of our CIS Technology compared to the competitors.

1 Test site Futterkamp (Schleswig-Holstein)

Site Overview

System capacity:	30 kWp
Reference period:	2 years + 8 months (01/11-08/13)
Modules compared:	mono-crystalline and poly-crystalline of two well-known manufacturers
Roof-orientation:	south-east
Characteristics:	difficult conditions due to low-light



Competitive Advantages

+ The specific energy production per year of Solar Frontier modules measured in kWh/kWp is 8.5% higher compared to mono-crystalline modules of the competitor
+ Energy production of Solar Frontier modules is 7% higher compared to poly-crystalline modules of the competitor
+ Higher savings and faster amortization of the plant.

8.5% more energy production compared to mono-crystalline modules

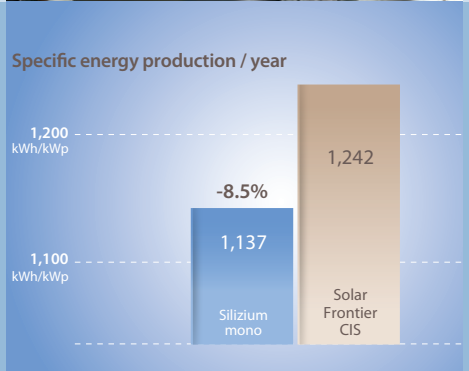
7% more energy production compared to poly-crystalline modules

2 Test site Fraunhofer Institut (Kassel)

Offizielle Testanlage vom Fraunhofer Institut Fraunhofer IWES

Site Overview

Reference Period:	12 months (2011/12)
Modules compared:	mono-crystalline Modules of a well-known manufacturer
Roof orientation:	south
Characteristics:	the roof faces south, the ideal orientation for competitors.



Competitive Advantages

+ The specific energy production per year of Solar Frontier modules measured in kWh/kWp is almost 10% higher than the earning of the competitor.
+ Even in the for our competitors ideal south-orientation, the performance of Solar Frontier modules is better
+ Higher savings and faster amortization of the plant.

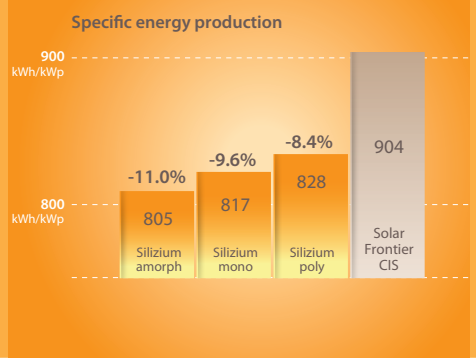
9.2% more energy production

SOLAR FRONTIER

3 Test site Twente (Netherlands)

Site Overview

System Capacity:	9.5 kWp
Reference Period:	9 months (2013)
Modules compared:	mono-crystalline, poly-crystalline and amorphous modules of 3 well-known manufacturers
Roof orientation:	south
Characteristics:	the roof faces south, the ideal orientation for competitors



Competitive Advantages

+ The specific energy production per year of Solar Frontier modules measured in kWh/kWp is 12.3% higher compared to the amorphous modules, 9.2% higher compared to poly-crystalline modules and 10.6% higher compared to mono-crystalline modules
+ Higher savings and faster amortization of the plant.

12.3% more energy production compared to amorphous modules

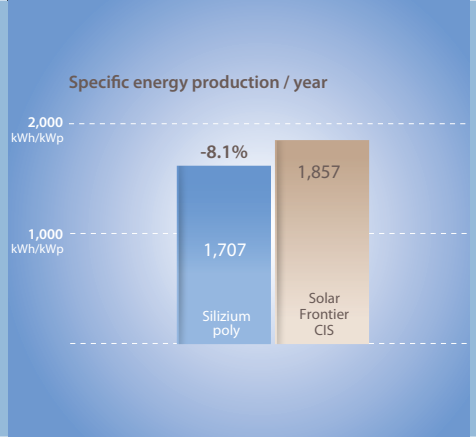
9.2% more energy production compared to poly-crystalline modules

10.6% more energy production compared to mono-crystalline modules

4 Test site Rhodos (Greece)

Site Overview

System Capacity:	199 kWp
Reference Period:	1 year + 4 months (03/12-07/13)
Modules compared:	poly-crystalline modules of a well-known manufacturer
Roof orientation:	south
Characteristics:	difficult conditions due to high temperature; the roof faces south, the ideal orientation for competitors.



Competitive Advantages

+ The specific energy production per year of Solar Frontier modules is 8.8% higher compared to the poly-crystalline modules of the competitor
+ Positive impact of good temperature coefficient of Solar Frontier modules (under high temperatures the loss of power of the competitor-modules is higher than with Solar Frontier modules).
+ Higher savings and faster amortization of the plant.

8.8% more energy production

Temperature coefficient leads to more power

www.solar-frontier.eu