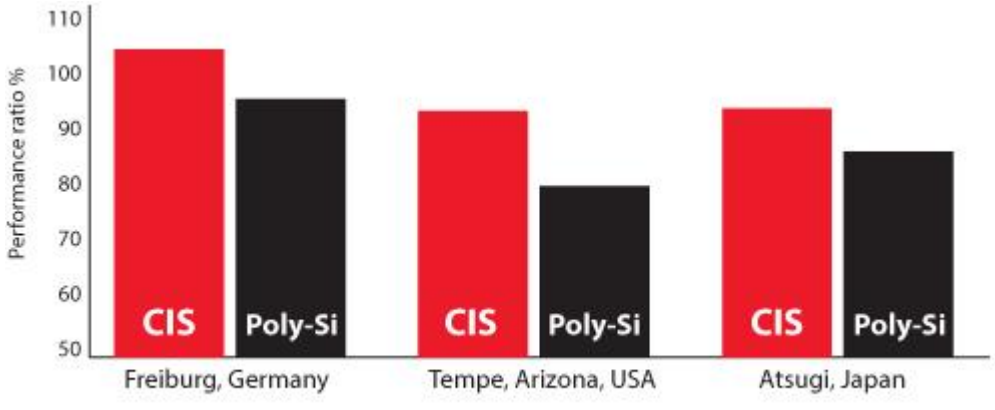
Solar Frontier - CIS Modules

CIS Advantages

CIS stands for the key ingredients copper, indium and selenium, though like other CIGS manufacturers, we also include gallium and sulphur in our semiconductor layer. Having worked with leading PV technologies since the 1970s, including crystalline silicon, we realised in the early 90s the unique potential of CIS. Since then, we have continued to build on our CIS technology, developing each of its unique advantages over today's standard technologies. Solar Frontier's CIS modules offer a higher performance ratio than crystalline silicon, and compared to other thin-film modules, CIS has higher efficiency. These are key to the financial success of our customers. For ecological peace of mind, Solar Frontier's CIS modules are lead-free as defined by RoHS and have zero cadmium.

Higher Output Ratio

Compared to polycrystalline silicon technology, global field data show consistently higher output ratio (kWh/kWp) for our CIS modules – that is, our panels produce more energy for every kilowatt-peak you install.



Source: ISE (Sep. 2009 to Sep. 2010), Wilson Electric (Mar. 2010 to Feb. 2011), and Atsugi Research Center (Jul. 2009 to Dec. 2010)

Shorter Energy Payback Time
Energy Payback Time is the time required for a module to generate the same amount of energy spent in its production. CIS modules require 60% less energy to produce than crystalline silicon.

The "Light Soaking" Effect
Following an intial period of exposure to sunlight, the CIS light soaking effect will result in higher output than factory spec. This has been proven by field data from around the world.

Made in Japan
All Solar Frontier modules are manufactured in Miyazaki, Japan. Japan is renowned for its attention to detail and high quality production.

Inverter Friendly
Solar Frontier's modules are compatible with a wide range of inverters. Grounding, whether positive or negative, is not required.*

Long-term Reliability
Multiple moisture barriers and robust construction ensure the reliability of our modules. Real-world data and third-party testing confirm their durability.

Reusable Packaging
Solar Frontier's modules are shipped with resusable packaging materials, and we have nearly eliminated all card-board for reduced on-site waste.

Ecological
Solar Frontier's unique CIS technology uses zero cadmium, is lead-free, and has no special recycling requirements.

Globally Certified
Solar Frontier modules meet JET, IEC, UL, and California Energy Commission standards. We are a member of PV Cycle and have voluntarily declared RoHS compliance.