COMPANY
SunPods
sunpods.com

LOCATION
San Jose, California, United States

SOFTWARE
Autodesk® Inventor®
Autodesk® Showcase®

From great idea to great product

SunPods uses Autodesk software to create "solar power on demand"

We are basically a fast-play company. We've created a product; we want to get it to market quickly; and we must maximize both time and resources. At every stage, Autodesk software helps us significantly accelerate our progress from good idea to great product.

—**Dan Jaeger**
Co-Founder and Managing Partner
SunPods, Inc.

Image courtesy of SunPods, Inc.

Summary

Based in San Jose, California, SunPods, Inc., creates solar photovoltaic (PV) arrays—those flat, mirrored panels that point up to the sky as if they are expecting something. It is exactly that something that SunPodsTM (Solar Power On DemandTM) seeks to harness, but what makes these systems truly different is how they are configured. Assembling custom arrays on-site can require long construction and site preparation cycles; concrete pours; or unpredictable material and labor costs where the surface area contains unexpected rock and debris, or where the land is protected and cannot be penetrated, such as landfills and brownfields. Conversely, SunPods creates modular PV arrays almost entirely in its factory. Once shipped to the project site, installation is straightforward, any licensed electrical contractor can properly interconnect the modular units and plug in the entire unit.

Founded in 2009, SunPods was scarcely up and running when the company's innovation was honored as a finalist at the Autodesk-sponsored Cleantech Open, the annual competition with a mission "to find, fund, and foster the big ideas that address today's most urgent energy, environmental, and economic challenges." In order to realize the potential of their ideas, SunPods became a member of the Autodesk Clean Tech Partner Program and has been using Autodesk® software to bring their great idea to the world.

The Challenge

Both SunPods co-founders, Dan Jaeger and Michael Gumm, have more than 25 years of experience as consultants and contractors in the roofing and solar industries. Jaeger managed multimillion-dollar national and international projects, and Gumm is known as a pioneer in the area of building-applied photovoltaics (BAPV), with a dozen patents and pending patents covering a number of solar technologies. Over the years, they watched PV arrays go from relatively rare—and usually prohibitively expensive accoutrements—to much-sought-after products.

"In the past, solar modules cost so much that installation costs were an afterthought," explains Gumm. "In the past three years or so, however, global demand has increased and the cost of modules has been reduced to the point where installation costs are now higher than the units themselves."

It was around 2006 when Jaeger and Gumm came up with the idea for SunPods.

The Autodesk Clean Tech Partner Program supports clean technology innovators with design and engineering software they can use to accelerate their development of solutions to the world's most pressing environmental challenges. For more information, visit **autodesk.com/cleantech.**

AUTODESK.

Image courtesy of SunPods, Inc.

"We began thinking about how to simplify the process and significantly reduce labor costs," says Jaeger. "How could we speed up the installation process? That is the question we have attacked with SunPods. We're committed to reducing costs, speeding up installations, and ultimately making solar arrays more affordable and, therefore, widespread."

The Solution

"SunPods are the world's first factory-built solar arrays," says Gumm. "While other companies expend a lot of time, energy, and labor creating and assembling custom arrays on-site, SunPods builds modular units in our factory and ships them to project sites. We eliminate almost all on-site construction and installation time, reducing overall installation time up to 85 percent. It is effectively the first plug-and-play solar array." SunPod frames are made from 80 percent recycled steel, are self-ballasted, and have adjustable legs to accommodate uneven land surfaces often found when installing renewable energy sources on reclaimed landfills, agricultural areas, or remote military bases.

Each of the premanufactured, self-contained units can generate up to 3.82 kilowatts of power—enough for a small residence. Thanks to its modular design, multiple units can be connected to one another to scale energy needs to power larger projects.

To call SunPods' growth a whirlwind of activity would certainly be an understatement, but Gumm is quick to say that Autodesk software has helped make things easier: "Over the past year and a half or so, SunPods have gone through nearly 23 digital prototypes to create a turnkey, modular solar array that truly changes the way ground mount solar is installed," says Gumm. "Autodesk® Inventor® enables us to design and model without the need for physical prototypes or on-site testing. We use Autodesk® Showcase® to place and animate our ideas in context and to create effective demonstrations for our customers."

Jaeger continues, "We are basically a fast-play company. We've created a product; we want to get it to market quickly; and we have limited time and resources. At every stage, Autodesk software helps us significantly accelerate our progress from good idea to great product."

The Result

The marketplace has embraced the company's innovative ideas: SunPods have now been deployed for commercial, residential, educational and agricultural projects across the United States. From a private home in Hollister, California, to a high school in Presidio, Texas, SunPods are providing more customers the opportunity to enjoy the benefits of solar power.

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>
> —**Michael Gumm**
> Managing Partner and Co-Founder
> SunPods, Inc.

While the life of a startup can be challenging, SunPods' journey has been made significantly easier with the help of Autodesk software and the Clean Tech Partner Program. According to Jaeger: "Autodesk helped us reduce our costs, accelerate the development of our product, and communicate better with our partners, who provide us with different components.

We've been able to test and refine the performance of our SunPods to develop a lower cost specification and significantly reduce the cost of our overall systems just by altering the specifications of the steel, and determining precisely how the modules should be attached and put together."

Challenging or not, however, it seems that Gumm and Jaeger wouldn't have it any other way: "I can't tell you how many hours Dan and I have worked on this dream of ours, but it is something we really believe will make the world a better place," says Gumm. "Simply put, Autodesk is interested in helping young companies like ours grow their technology. The company wants to have a positive impact on the world around us and is doing just that by making their technology more readily available to companies like ours."

For more information

To learn more about the Autodesk Clean Tech Partner Program, visit **autodesk.com/cleantech.**

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