

# Aiming for Higher Power

*Aims Power is completing its second decade as a leading inverter supplier by turning its attention to the booming RV industry.*

By RV News Staff | Cornelius Photography

In design, critical thinking is often separated into two camps: creative or practical. The challenge with drawing precise lines is what to do with the people who blur them. Part entrepreneur, part engineer, Bruce de Jong is the president and founder of Aims Power, an industry leader in power inverters. De Jong leverages his electrical engineering knowledge to develop creative yet practical solutions across a variety of industries—most recently, RV.

“It is fun for us to tinker with new products and see how they are accepted in the market,” he said. “Our key thing is listening to customer feedback, trying to solve their needs or wants and then putting our own little spin on it by improving upon what they conceptualize. Because if one customer wants it, typically they are not alone.”

According to de Jong, consumers want powerful and reliable off-grid energy solutions for their RV adventures.

Older camping enthusiasts, he explained, are familiar with generators—from starting them to their

accompanying loud sounds and unpleasant smells. He said younger, more environmentally conscious RVers sometimes see generators as dirty and disruptive. While eager to abandon traditional gasoline as a power source, the new generation is less willing to part with modern amenities and connective devices that draw immense power. As a result, OEMs seek bigger and more powerful off-grid power systems to satiate these new consumers. Solar, in particular, is emerging as a popular solution.

“Many are doing it as an upgrade option, and there is obviously a high demand for it, even at the price,” de Jong said. “But battery technology continues to improve; lithium is really coming on strong. It provides a lot more capacity for its size and weight, and that’s just going to keep getting better, making inverters more useful. As renewable energy adoption grows, costs will come down, too. So, overall, I think there is no downside to it.”

Inverters, along with other green energy components, help keep creature comforts accessible.





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Bruce de Jong founded Aims Power as an inverter and solar power product supplier, two decades ago. Today he is achieving his long-time goal by selling Aims Power products to the RV industry.

Like generators, inverters convert stored DC (12-volt) power to usable AC (120-volt) power so consumers can draw power from the battery in a quieter, more eco-friendly way.

With a bountiful selection of inverters and roughly 500 SKUs related to existing solar products, Aims Power recently added 40-plus RV-related SKUs to its product offerings. The industry-specific line includes UL-listed power inverters, pure sine inverters, battery chargers, 60- and 130-watt solar panels, solar charge controllers, lithium and AGM batteries, as well as special mounting hardware, cables and entry glands.

De Jong said Aims Power now serves as RV manufacturers' one-stop off-grid and solar shop. The company designs, sources, assembles and certifies that components will work together so OEMs don't have to.

## Timing Is Everything

Supplying industrial, commercial, residential and mobile markets for two decades, Aims Power saw its breakthrough into RV a natural diversification. During the company's early days—when de Jong was still operating from his Reno, Nevada, garage—his first customers were RV owners seeking replacement inverters.

Those initial satisfied customers helped build dealer awareness of the brand. Dealers buying, selling and installing the company's products helped the fledgling company secure OEM contracts in the U.S. and Canada.

Today, Aims Power maintains longstanding relationships with several smaller manufacturers, including Black Series Campers and nuCamp RV. "Getting in with the big boys" was difficult, de Jong said, despite achieving independent product safety testing and certification years ago.

To provide a product compatible to RVs, de Jong initially condensed a section of his company's existing pure sine wave inverter lineup. With high surge ratings, as well as a built-in transfer switch and smart charger, the low-frequency inverters offered

reliable power and versatility well-suited to off-grid exploration.

Popular units range from 600 to 6,000 watts, with larger 8,000-, 10,000- and 12,000-watt models available. The company now offers a variety of modified sine wave inverters, in 12-, 24-, 36- and 48-volt versions.

Modified sine wave inverters produce a less smooth energy output than pure sine counterparts. They are not appropriate for delicate appliances or electronics. However, the technology is less expensive and can support simple appliances like vacuum cleaners, water pumps and blenders.

“It's really our experience with the complete package... We have all the products; we know what the customers need—what the manufacturers need for a complete installation—and we design the system for them so they don't have to.”

— Bruce de Jong

“We also added many selectable features into the inverters,” de Jong said. “For example, we have different cutoff voltages, different frequency selections and features that are DIP-switch selected or are programmable. So, we can meet the needs of more customers with the same products.”

To further attract OEM customers, de Jong tailored product redesigns to prioritize simpler and cleaner installation. For example, Aims Power created a custom inverter kit for nuCamp. The product ships as a single-piece unit and seamlessly installs into the RV. Aims Power prewires the cables and provides the fuse, so nuCamp simply mounts and connects the kit when it arrives.

## Here Comes the Sun

Although inverters remain Aims Power's prime focus, de Jong said developing OEM-friendly, preassembled solar packages proved indispensable to gaining measurable RV industry traction. The company spent several years designing complete solar off-grid systems, he said, resulting in a product line that now supports a complete OEM installation, from scaled-down, flexible and slim solar panels to numerous mounting brackets.

Today, Aims Power has a new waterproof charge controller in production, de Jong said, that is easier to mount and can be installed on an RV exterior.

Charge controllers limit the current flowing from a solar panel to a fully charged battery, preventing overload. The company also is making more preassembled entry glands used to securely route photovoltaic wire or cable through an RV's roof. As a result, manufacturers have less cabling, saving them precious time and money.

As integrated devices grow in popularity, Aims Power plans to release an all-new central control unit soon. The device functions as a miniature smart home system, collecting and displaying critical data from all Aims Power products. In addition to tracking power usage and battery life, the new product also sends equipment failure alerts. Delivered via Bluetooth, the notifications can immediately inform a consumer when an inverter shuts off or a solar panel stops producing electricity. To ease troubleshooting efforts, the central control unit stores product manuals as well.

Though Aims Power is designing a custom display panel to mount in the RV, de Jong said eventually the Controller Area Network (CAN bus) unit will communicate directly with the vehicle and integrate into the standard onboard system. In time, the control unit may even communicate with other third-party devices.

The new central control unit will be manufactured locally in Reno. As a small company with 15 employees, Aims Power only manufactures cables



Quality control manager Andrew Frey tests an inverter's electrical charge.



Direct Sales Manager Chrissy Stranahan talks with a customer about their web order.



[L to R] Lead Tech Jay Jwes and technical support Cody Jepsen are responsible for repairs sent in by customers under warranty.



Jepsen fault checks an inverter that was returned earlier in the day.



Accountant Summer Yates is responsible for preparing payroll.



Shipping and Receiving Manager Anna Aguirre cuts cables. Cables are the one product made at Aims' Nevada headquarters.



270 solar panels line the carport at de Jong's headquarters. The building is entirely off-grid, with solar power used as its primary energy

in-house. All other products are sourced through longstanding manufacturing relationships with domestic and overseas factories.

### **Creative Practicalities**

De Jong and chief electrical engineer Andrew Frey design new products alongside component-level engineering teams at Aims Power's manufacturing partners. Often, de Jong will innovate existing products in the market, finding drawbacks in the original design and presenting new solutions. He said the process allows his company not only to offer more product variety but also go to market faster.

When a prototype is ready, technical employees test it at the company's Reno headquarters by essentially opening the product and trying to break it, de Jong said. For example,

staff will test an inverter's inputs and outputs and then attempt to overload the unit, recording the temperature at which the inverter shuts down. The team then makes necessary redesigns in-house and communicates those changes to the factory. After passing muster in Reno, the product is sent to an independent lab for UL listing.

Final products arrive at the company fully assembled, where they are batch tested and labeled, then shipped or stocked in Aims Power's 46,500 square-foot headquarters.

The company's headquarters uses the products it develops. The entire facility is off grid, employing Aims Power's green products as its primary electric power source. The custom-designed system features 270 solar panels located over company carports. The panels feed power to 252

200-amp-hour batteries. A 200kW three-phase inverter converts the electricity into usable power, creating a self-sustainable energy operation that uses city power only as a backup. The setup not only allows the company to subsidize costs and reduce energy usage but also remain true to its renewable energy use commitment.

Plus, de Jong said, "It was just a really fun project. And you know, if we can't do it, why would anybody else be able to?"

### **Mo' Power**

As renewable energy sources gain public and political favor, solar power continues to emerge as a clear leader. With 16.5 GW installed in America, 2020 was the sector's best year according to a joint report by BloombergNEF and the Business Council for Sustainable Energy.



Jepsen examines an inverter sent to Aims Power for warranty repair.



Warehouse manager Josef Lyons picks orders that will be taken to the shipping line.



Jwes replaces a power board damaged by water.



Vice President Sales and Marketing Laura De Jong is responsible for creating new advertising materials.



Corporate Sales Manager Sara Rasner manages Aims Power's online sales orders.



Frey is Aims Power's chief engineer. He works with de Jong on new product designs.

However, consumer demand is trickling out far beyond residential and commercial solar setups. For many people, the pandemic sparked a desire to unplug from society and reconnect with nature. As RV sales boomed, so did customer inquiries regarding robust off-grid power systems. Aims Power is currently working on an OEM client's custom system, which would enable RVers to boondock for a long period with no generator. The custom system repurposes a powerful 12,000-watt inverter.

Commonly used to power off-grid cabins, the burly inverters are roughly six times larger than most RV inverters. Because a traditional battery would drain too quickly, Aims Power is pairing the inverter with large lithium battery packs, providing more capacity than standard 12-volt 100-amp-hour lithium packs. With constant output voltage, lithium batteries provide more efficient power. They are easier to

maintain and last longer than competing battery technologies.

For the project, Aims Power also is working with an automotive alternator designer to create a custom backup charging solution. The built-in alternator would enable the powerful 48-volt system to recharge with the engine idling.

"None of our competitors have these products," de Jong said. "Manufacturers did not know this existed, but we can bring it to them. It is not cheap, but it is long-lasting and can actually power air conditioners and other high-demand RV components, (unlike most inverters)."

De Jong credits Aims Power's innovative advantage to being a smaller company experienced with custom OEM work. Such tasks often involve smaller-volume products with higher price tags, he explained, which generally do not appeal to competing solar suppliers.

"Unless we build a market for it," he said. "Maybe then they will start doing it, but we will have the head start."

### Support System

Despite garnering more OEM attention, de Jong realized getting his products preinstalled on larger manufacturers' units required a big step forward. His Nevada-based company would either need to open an Elkhart-area facility or find a knowledgeable sales force partner capable of filling gaps caused by its West Coast location. He chose the latter option.

In late 2020, Aims Power partnered with veteran distributor Collins & Company, a division of Patrick Industries.

"Partnering with Collins is a big help because they are a true sales team," de Jong said. "They have local representation in Elkhart, which means they can support it every day. They stock everything they have



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(L to R) Aguirre and Warehouse Manager Josef Lyons package products on the shipping line.

commitments for, and then we carry the backup supplies.”

The exclusive partnership gives Aims Power access to Collins & Company’s lifelong OEM connections, as well as valuable local manpower. With ample warehousing and delivery trucks, the distributor provides same-day turnaround on many products, a service Aims Power could never provide from its western location. Essentially, Collins & Company has “everything except the solar and off-grid products and the design expertise, which we have,” de Jong said. “So, it is a really good fit.”

Thanks to the distributor’s introductions, larger OEMs are now taking an interest. Already, Forest River is incorporating Aims Power’s products in the manufacturer’s off-grid solar systems. Discussions with other manufacturers are in the early stages, but de Jong is confident the conversations will prove fruitful.

As more OEMs hop aboard, Aims

Power and Collins & Company are developing a new dealer-facing website to provide convenient, direct ordering for upgrades and new parts. De Jong said the site will launch soon and all products will be RV specific.

“We are meeting with Collins’ customers and really getting to know them,” he said. “As we do this more and more, we learn what the manufacturers are really looking for—and why. They do not want the same products they have been buying forever.”

Some OEMs seek bigger, more powerful systems, while others want redesigned battery packs. Still, others do not know what they need. He said a real education gap exists around the technology. Right now, conversations with manufacturers range from detailed increased power storage plans to “How come this doesn’t work right when this other thing is plugged in?” he said.

Additionally, Aims Power inverters can be used to power merely a part or

all of an RV’s power needs; the product works with generators or solar. With no single solution, “prethinking” the power upgrades is critical, de Jong said.

“Plus, this is high-powered stuff,” he said. “You have to fuse everything properly, wire it correctly, and that is what we do here for OEMs to make sure things operate safely and nothing can go wrong. Because if you do not think about that in advance, and you do not put a fuse in—a simple \$2 part—you can burn the whole RV down.

“We are going to learn a lot more about what the market lacks and what it’s looking for in the future,” he said. “We come to market pretty quickly with products because we already have so many, but also because it is a nonstop process here. Me and Andrew, we are always playing with new products—always. And we are continuously asking: ‘Hey, you know, why don’t we do this?’ or ‘Why isn’t this done?’ or ‘How can we solve that?’ It is just what we do.” **RVN**