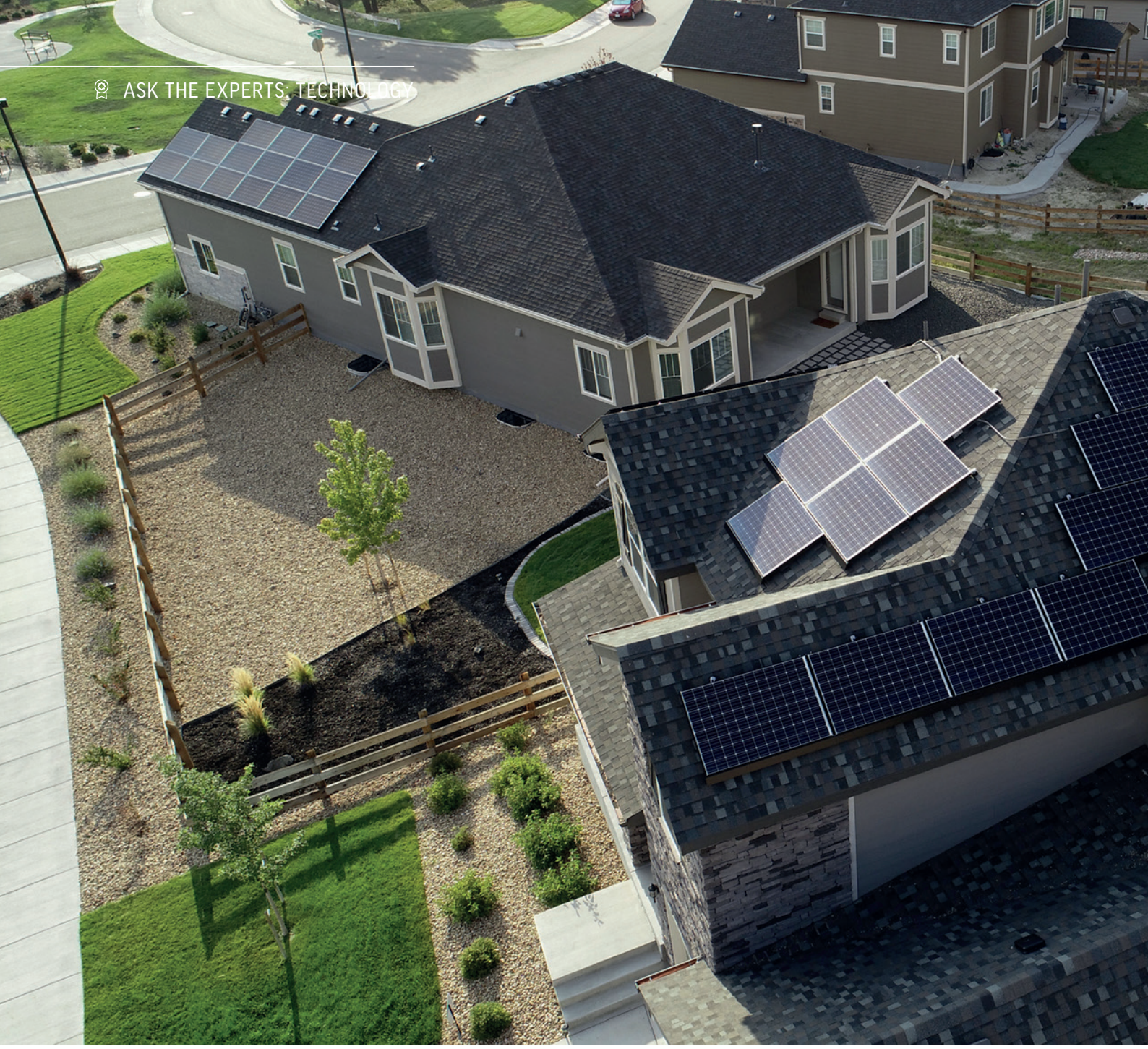

ResiRoofPV

Increase energy harvest, simplify service

PES thought it was time to find out more about, SMA America and Brad Dore, Director of Marketing was happy to oblige. A global specialist company in PV, providing innovative solutions to their customers and setting standards for decentralized renewable energy. Read on to find out about optimization, roof top safety, collaboration, their vast international reach and much more.

Brad Dore

PES: Welcome to PES Solar/PV Brad, it's great to have this opportunity to speak with you. Would you like to begin by giving us a brief overview of SMA America?

Brad Dore: SMA America is the U.S. based subsidiary of SMA Solar Technology, a leading global specialist in photovoltaic system technology. SMA America is responsible for SMA's sales and service operations in the America's region.

PES: Could you tell us about the traditional methods of optimization and your approach to it?

BD: When installers set out to optimize a system, they are looking to improve energy harvest and simplify service, while addressing all relevant code requirements for installation. In much of North America, the presumed way to do this is through the addition of power conditioning devices on each module.

While this method has some advantages, it comes with significant drawbacks including a high component count and electronics that are forced to work constantly in an inhospitable rooftop environment. This results in excessive thermal cycling and wear and tear that ultimately complicates service, thereby putting more installers at risk because they spend more time on the roof installing, troubleshooting, and replacing devices.

SMA has pioneered an optimization method that does not rely on traditional module-level devices for power management. Our ShadeFix technology improves energy production without those added components under the module, reducing system componentry by 50%.

This yields significant replacement and service savings, while improving safety. Instead of using complicated devices at the module, SMA optimizes power at the inverter and uses very simple SunSpec certified rapid shutdown devices to address code requirements at the module. In addition to the simplicity, a recent university study also showed this model produces energy gains under most conditions when compared to traditional DC optimized, module-level technology.

PES: Can you explain how you apply this to the residential market?

BD: This model is perfect for the residential market, where doing work on space constrained rooftops is both dangerous and time consuming. This model produces more energy while limiting the risk of failures and service work. It is also the simplest way to achieve compliance with current electrical codes in the United States, which essentially require module-level shutdown.

Therefore, the benefits achieved for residential stakeholders are twofold: PV installers have more time to spend on revenue-generating activities while homeowners obtain peace of mind that their system will generate maximum energy with minimum service risk.

PES: You mentioned SunSpec certified technology. Can you elaborate on who the SunSpec Alliance is and the benefits it offers?

BD: The SunSpec Alliance is a consortium of more than 100 industry participants. It comprised of manufacturers, integrators, policy makers, and more. Its mission is to develop industry standards that help drive solar adoption. One of the many standards they have developed includes a communications protocol to address the shutdown requirement outlined in NEC 2017 690.12.

By creating an open standard, the SunSpec Alliance helps drive cost out of the system. It also reduces business risk by creating an

ecosystem of technology providers so that installers are not hindered by proprietary technology, or single-sourced solutions for shutdown devices.

PES: Are there any specific service concerns, what strategies can be implemented to minimise service risk for both the installers and the home owners?

DT: The most frequent source of construction injury is falls, which makes reliability critical in residential systems. Keeping installers off roofs is paramount for improving installer safety. Utilizing an optimization model eliminates many of the failure points found in traditional MLPE systems and will limit the number of times an installer must be on a roof for installation or servicing. This also limits the potential for any inadvertent damage to the home from service technicians.

In addition to less physical risk, this model also helps improve business operations and protects homeowners from revenue loss in the event of a service issue. SMA Smart Connected is the key to this installer and owner support.

SMA Smart Connected is a proactive service technology that monitors users' systems. If an inverter event occurs, data is automatically transmitted to SMA, where we analyze the issue and provide either remediation guidance, or a replacement device depending on severity. This eliminates a diagnostic truck roll, so the installer saves time by arriving onsite with the tools and knowledge to solve the problem, without having to call a service line. Homeowners benefit from increased uptime. Service can be performed often before an owner is even aware of an issue.

PES: Do you have your own installers or are other companies able to set up your systems, if so, do they need training in order to do this?

BD: Our solutions are installed by independent solar installers. While systems have become exceedingly simple, we still advise training and provide product and solutions support through our Solar Academy, which operates globally. We also support installers through self-solve tools, including

an online service center, smartphone apps, and technical videos on YouTube.

Additional support is available through the SMA PowerUP program, which is a select network of installers and integrators closely associated with SMA. It leverages the power of that partnership to create differentiation from the competition and increase sales through special pricing, in-depth training, enhanced service and prioritized marketing support.

PES: We would be interested to know where your main markets are and if these have changed over the years and if there is a geographical area you would particularly like to break into?

BD: SMA is in every major PV market across the globe. We are one of the few industry participants with the geographical footprint and infrastructure to go where business develops. This allows the company to remain regionally diversified and mitigate the dangers of markets that are hot one year and decline the next. It also allows us to scale up or down as needed to support customers anywhere around the world.

PES: What makes SMA solutions stand out from the competition, what are the benefits to the end user?

BD: SMA ShadeFix optimization differentiates our solutions from the competition by generating more power than conventional DC optimizers, while also using far fewer components. Our solution works smarter, not harder, and is only active when needed. Traditional DC optimizers are constantly boosting and bucking voltage, consuming power. This is akin to operating a vehicle in full-time four-wheel drive. You get added traction, but it comes with a fuel penalty. ShadeFix is more like selectable four-wheel drive. It operates only when needed and allows the system to run more efficiently throughout the year under a variety of conditions.

We understand that system owners want more energy and limited or no downtime. They want their investment to pay off over the long term. SMA's entire system design is predicated around maximizing these benefits.

PES: What do you think will be the greatest opportunities and the greatest challenges, for solar/PV in general and SMA America in particular, over the next few years, and where do you see yourselves in 5 years' time?

BD: There is a lot of potential for driving complexity out of the U.S. residential market. Today, it is encumbered with a model that is overly leveraged on perceived value rather than real performance. As the University of Southern Denmark study showed, there's a more effective way to mitigate shade, increase energy harvest, improve safety, and elevate service operations.

SMA's ShadeFix optimization and SunSpec shutdown solution has been met with a lot of enthusiasm. As more installers realize the benefits of increased energy harvest with fewer components as well as the advantages SunSpec standardization brings to shutdown requirements, we expect to see this become the preferred model of choice for residential PV.

We also expect storage to become increasingly important, as consumers add resiliency and decrease dependency on grid power. Whether it's backup power, or being able to take advantage of favorable rate schemes, storage attach rates will continue to climb. With more than 2.5 GW of storage capacity already on the grid, SMA is heavily invested in storage technology as well and we expect that trend to continue.

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