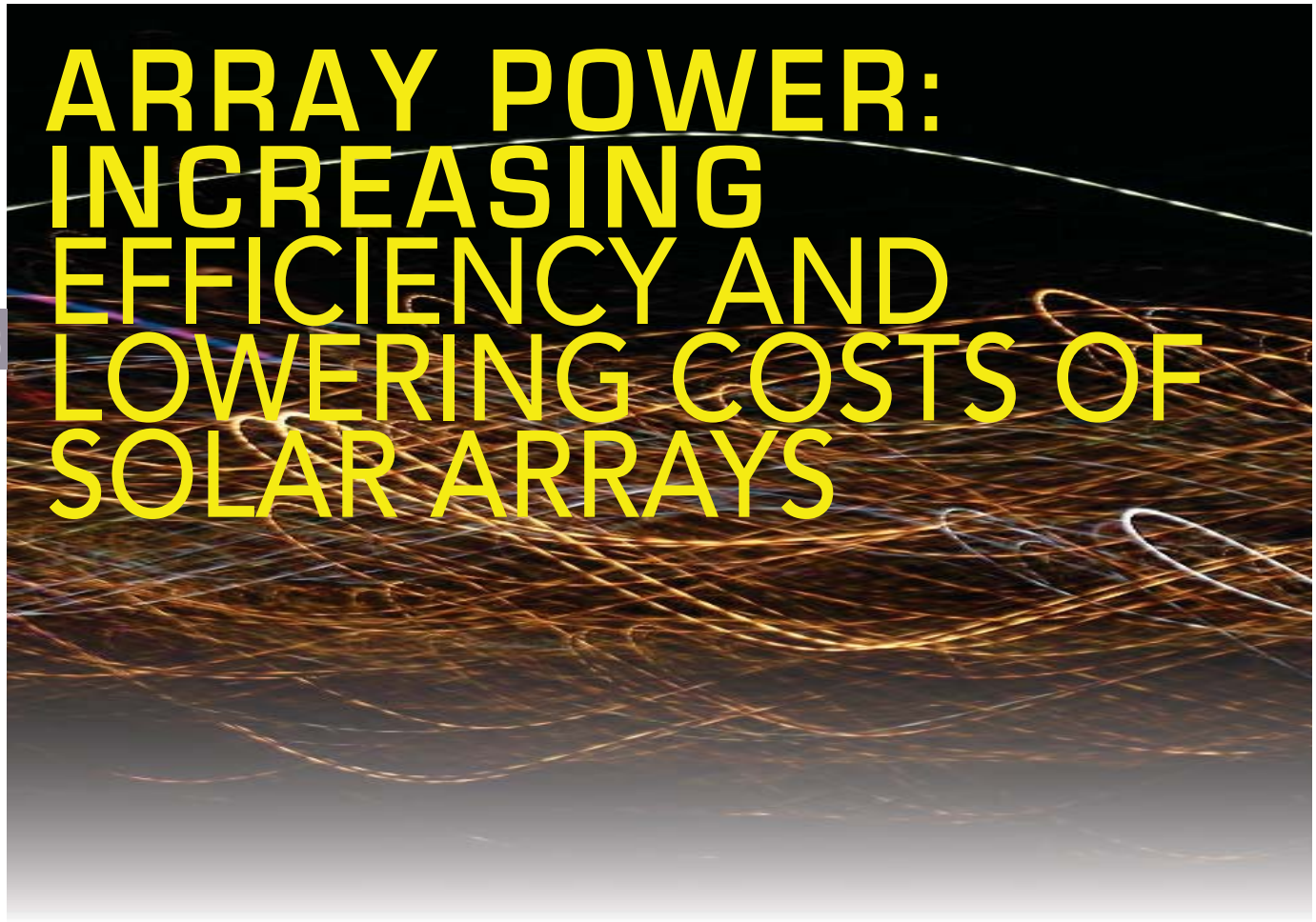
ARRAY POWER: INCREASING EFFICIENCY AND LOWERING COSTS OF SOLAR ARRAYS



Remember the frustration of getting old Christmas lights to work? When one string failed, the entire tree went dark.

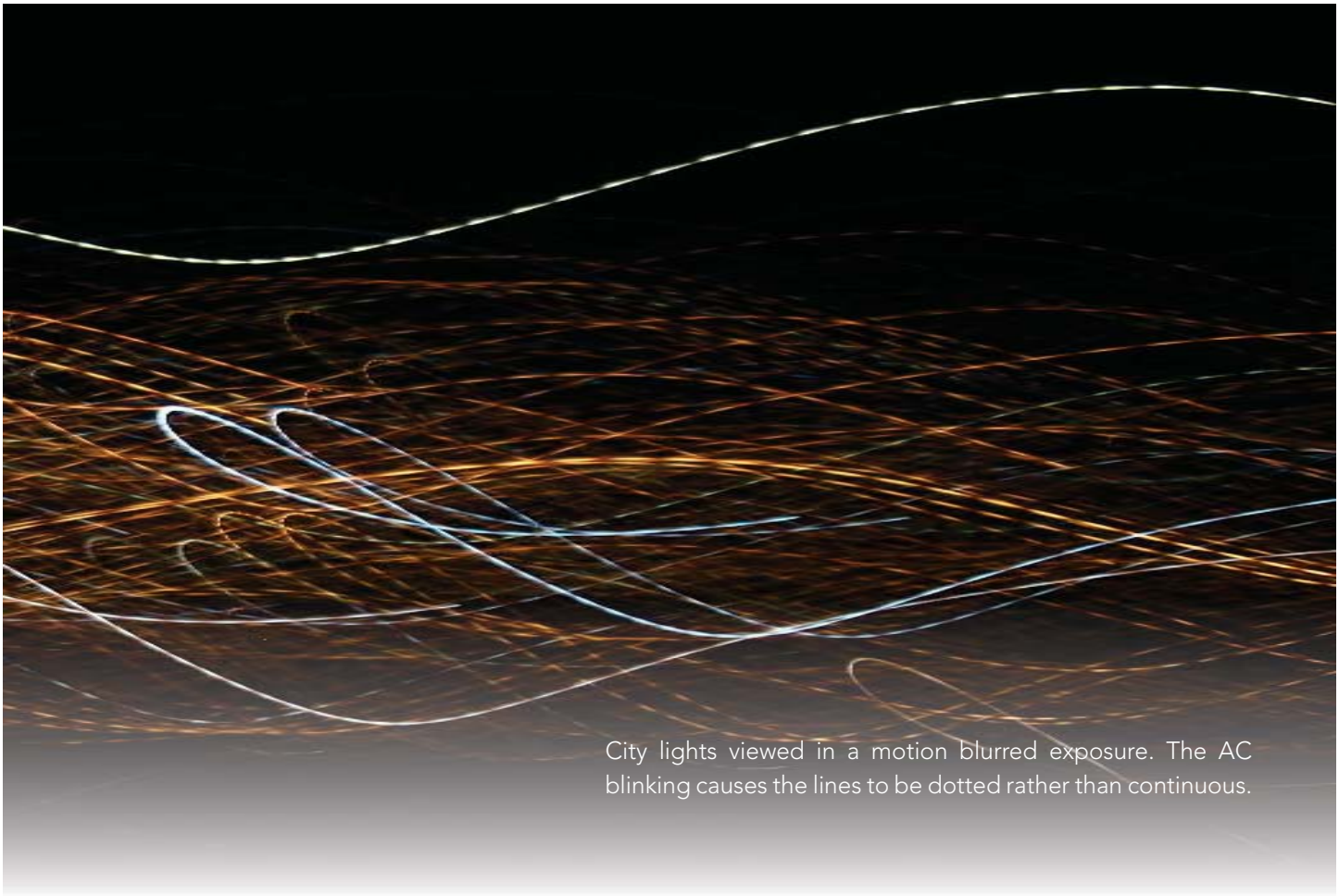
This is one of the most significant challenges of modern solar array design — when even one solar panel stops producing due to shade or malfunction, the energy produced by entire strings is ignored.

In order for the Direct Current (DC) output of a solar panel to be integrated into an Alternating Current (AC) grid (your home or office), a bottle neck is created at the DC-AC inverter. That bottleneck costs time, efficiency, money, system flexibility and reliability.

"DC power continues to rule, especially when it comes to output from solar and wind," comments Nick Cravalho, VP for Business Development and Marketing of ArrayPower. After the founders encountered dangers while installing panels and converters, they began to look for a better solution. They came up with a device that they believe solves the problem.

Installation Time

Integrating ArrayPower's silicon-based device into a solar array is as simple as attaching a small component to each module at the back. The ArrayPower Sequenced Inverter then takes the 60 volt direct



City lights viewed in a motion blurred exposure. The AC blinking causes the lines to be dotted rather than continuous.

current energy from the panel and boosts it to 208 volts. That power is then sent through three circuits of resistors and capacitors that send out the current in pulses, which are then combined at least four at a time into the correct AC wave to feed into a home or the power grid.

Additionally, since modules can be shipped preconfigured and preassembled with the sequenced inverters already integrated into the solar panels during assembly, the plug and play nature of installation with ArrayPower technology is much simpler and faster — as well as safer for personnel working with the equipment.

Efficiency

Based on pulse amplitude modulation, the technology used by ArrayPower promises to harvest more energy, increase overall efficiency, simplify installation, and lower capital costs. And it's based on readily available technology that has been in use in the Ethernet industry and for LED lighting for years.

"Our technology is much like a glass of water. The more water you can get into the glass, the greater the benefit to you. We make it possible to squeeze 5% more energy into that glass that we ever thought possible."

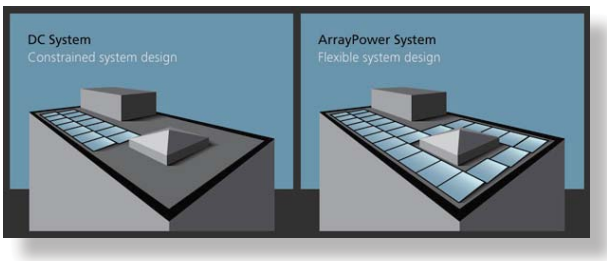
Savings

Sequenced Inverters enable the production of AC power directly to improve module efficiency but without any additional system components. By removing components like DC junction boxes, cables, and connectors used in conventional DC modules, ArrayPower's technology reduces overall system costs. And like microinverters, sequenced inverters offer more harvested power but at a price much lower than centralized inverters.

"We estimate that there are about 50% fewer components needed with ArrayPower's Sequenced Inverter technology, making systems cheaper and faster to install," explains Mr. Cravalho.

System Flexibility

Fewer components mean a smaller physical footprint and more space for additional modules, increasing the available roof space for solar collection. It also means that solar systems with integrated ArrayPower technology rely on fewer



technology providers, are bound by fewer warranty restrictions, and are unhinged from other technical requirements, vastly simplifying the entire process and maintenance.

Another key advantage is design flexibiltiy. In traditional systems, one inverter connects a pre-designed group of panels, so the system designer is limited in how the panels are arrayed.

Reliability

Getting back to the Christmas lights, the ArrayPower systems operate independently, removing the "one out — all out" effect.

As important, the ArrayPower systems have already been field tested in the US and Morbach, Germany and have demonstrated higher energy harvesting capabilities than conventional string inverters. Backed by a 25-year warranty and millions of dollars in Silicon Valley venture capital, ArrayPower has already struck a deal with ShinHa for their Sequenced Inverters to be shipped to Korea.

All in all, ArrayPower expects to make a major contribution to the growing Solar industry in the US and abroad.

	Alternating Current	Direct Current
Amount of energy that can be carried	Safer to transfer over longer city distances and can provide more power	Voltage of DC cannot travel very far until it begins to lose energy
Obtained from:	A.C Generator and mains	Cell or Battery
Current:	It is the current of magnitude varying with time	It is the current of constant magnitude
Direction:	It reverses its direction while flowing in a circuit	It flows in one direction in the circuit
Types:	Sinusoidal, Trapezoidal, Triangular, Square	Pure and pulsating
Flow of Electrons:	Electrons keep switching directions - forward and backward	Electrons move steadily in one direction or 'forward'
Cause of the direction of flow of electrons:	Rotating magnet along the wire	Steady magnetism along the wire

Source: Alternating vs. Direct Current on Diffen.com