

WORDS BY SHELLY CANNON

ILLUSTRATIONS BY ROB WILSON

**WHERE
GREAT IDEAS
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Call it the convergence of technology and exploration, where purpose and readiness to experiment drive progress. It's one part genius, multiple parts business and logistics, and it is all stirred by courage, conviction, and, above all, grit.

This is the Palm Springs iHub, an incubator and accelerator campus where innovators and entrepreneurs come to turn their brightest ideas into successful businesses. They're advancing sustainability through progress in clean technology and renewable energy, creating efficiencies in medicine and healthcare delivery, and finding new ways to participate in digital media.

One of 16 state-designated innovation hubs in California, the Palm Springs iHub also functions as an economic growth model, promoting viability and profitability as it diversifies the economy and creates higher-skill, higher-wage jobs for Greater Palm Springs residents.

Winds of Change

Austrian-born Johannes Steinlechner, better known in Palm Springs as the "wind cowboy," has developed electricity-generating Vertical Axis Wind Turbines (VAWT) that operate at ground level. With an earth-based generator and safe ground-level access, installation and maintenance are safer and efficient. The power generated is less expensive than traditional wind power due to the simplicity of the design.

"The existing horizontal axis turbines — the ones standing upright — produce less power per acre than the Heppolt turbine," says Steinlechner, founder of Heppolt Wind Energy. "My same-size turbine produces more than triple the power output when compared to traditional solutions." Heppolt holds two patents for its 55-foot-diameter turbine, funded and analyzed by the Los Alamos National Labs in New Mexico. Each site will be analyzed to determine the optimal

diameter for the local wind conditions.

One of the patents leverages the Venturi effect, wherein the turbine accelerates wind from a large opening through a smaller one and then out through a larger opening, an innovation that puts the wind and velocity in the most favorable direction. The cost of the turbine is one-third of wind machines that have equivalent output.

Steinlechner envisions his turbines covering an area from Whitewater to Indian Canyon Drive, more than 5 miles. "It has the potential to produce 4 gigawatts," he says. Add to that another possible location in Morongo. "That could generate 8 gigawatts of electricity," he says. "That's enough to replace the output of all of the power generation losses from the shutdown on the San Onofre nuclear facility and four more like it." The wind velocity here is one of the nation's best, translating to electricity, revenues, and jobs.

"We need cheap electricity," continues Steinlechner, who sees community co-ops bypassing the big companies. "I can provide electricity at 8 cents per kilowatt. We could potentially generate \$2.2 billion in revenue a year and create up to 2,000 jobs."

He foresees a 1.2-million-square-foot factory producing the turbines here in the desert. "It will require \$50 million in capital," he says. In his world, the winds of change aren't just blowing; they're generating a new reality. He adds, "I'm going to be very busy the next 20 years."

Power to the People

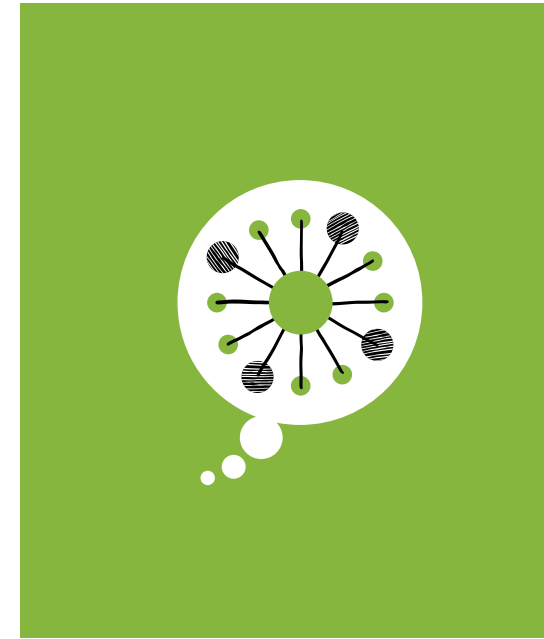
An issue with renewable energy is having on-demand access. "The challenge is storage," says Joe Wallace, managing director of the Palm Springs iHub and CEO of the Coachella Valley Economic Partnership. "If you can harness power using conservation and storage technologies, renewables can be useful all the time, not just when power is generated."

Enter Sactec Solar's transportable storage container system — "mobile mini solar farms" with pop-up solar panels enabling users to plug in anything, anywhere. That means portable energy in remote military outposts, FEMA emergency support locations and first-responder applications, and developing nations. It can even provide reliable, low-cost back-up power for a hospital.

Sactec Solar, which holds four patents, recently launched PowerHop, which supplies both 12 to 48 VDC and 120/240 or 480 VAC power. Each half-size container holds up to 25 kilowatts of solar energy, enabling 100 kilowatts of power per truck delivery. The applications are endless.

"The iHub has been significant," says the company's founder and president, Bob Kunesh, who based the company's manufacturing and solar operations in

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Hot Water, Cool Costs

SolAqua Inc. has introduced commercial and residential solar water heating systems with patented, leak-proof technology offering optimal heat retention, durability, and cost-effectiveness. The company, led by founder and CEO Jeff Cheng, reimagined solar collectors by bonding low-iron tempered glass with aluminum casing. Roof-installed collectors capture the sun's energy "to heat a nonfreezing, heat-transfer fluid [or water] in the collector," according to the company's website. "As the fluid circulates through the collectors, it heats up and is transferred to the storage tank located on the ground, typically in a garage." The systems reduce utility costs up to 85 percent.

"We can create big savings for hotels, apartment complexes, low-income housing, breweries — wherever hot water is used, including pools," says Wendelyn Walker, SolAqua Inc.'s vice president of sales. She says the company plans to establish a robotic assembly station locally, "creating tech jobs and contributing to the economy."

Access for All

ButterFLi, a tech startup based in the iHub's Palm Springs Accelerator Campus, is impacting the nonemergency medical transportation space. "There's a gap in service for elderly and disabled people," says Delilah Lanoix, the company's co-founder and president. "This is about getting equality for people with special needs."

The company offers safe, on-demand and scheduled rides, partnering with existing entities that have trained and certified drivers experienced in using wheelchair lifts and assisting passengers. Users access the service through a mobile app created by co-founder and CEO Andy Downard, whom Lanoix met at Caltech.

"The Greatest Generation is not inclined to adopt technologies," Downard says. "ButterFLi uses a soft hand with customer service. We also give clients a lifeline button, connecting them to the driver to coordinate the ride home. It's peace of mind."

ButterFLi, the only iHub-based company with more than \$1 million in funding before it earned significant revenue, raised the investment from its business plan.

Lanoix says the company will scale up nationally in the second quarter of 2018. "We are changing people's lives," she says. "Individuals that were homebound can now see their grandchildren play baseball. We're giving people freedom, independence, and a quality of life."

Fast, Efficient Diagnoses

Bioengineer Michael McNeely is a rising star in medical technology. His company, GattaCo, has created a patent-pending centrifuge replacement called the SiPon; it's the only fully automatic, disposable, high-yield rapid plasma separation and metering tool.

"Most medical diagnostics with blood require the plasma [not cells], which has to be acquired in a lab with a centrifuge," says McNeely, who completed his graduate dissertation in microfluidics. "The blood is collected, then sent out for testing; it's inefficient. Our technology separates the plasma and measures the right amounts, incorporating the centrifuge's functionality and replacing the pipette, a measuring component. It also facilitates diagnosis for telemedicine and has digital health uses."

He's giving the product to diagnostic companies to try, and seeking investors or a strategic partner to fund continued work.

These innovators are creating more than great ideas; they're developing the companies of the future.