

## STEPHANE DUFRENNE



President  
Upsolar America

### WORLD-GEN: PLEASE EXPLAIN UPSOLAR'S 20-YEAR, ENERGY FREEDOM LOAN PROGRAM IN CALIFORNIA AND ARIZONA.

**STEPHANE DUFRENNE:** The Energy Freedom Loan is a unique turnkey financing solution. For homeowners, the loan program is designed to remove common financial barriers to solar adoption, like high upfront costs and unfeasible terms. With the Energy Freedom Loan, homeowners can invest in a rooftop installation for zero money down, with flexible terms, and repay over as many as 20 years. Each Energy Freedom system is built with high-quality equipment and is supported by long-term operations and maintenance services.

### WORLD-GEN: IS THERE A CAP ON THE AMOUNT OF THE LOAN, WHAT'S THE INTEREST RATE, IS THE LOAN TRANSFERABLE AND IS THERE A PREPAYMENT PENALTY?

**STEPHANE DUFRENNE:** The Energy Freedom Loan is available in amounts up to \$65,000. Payments remain fixed—as low as 5.99 percent—even as electricity prices fluctuate, which results in greater savings for the customer over the lifetime of the loan. We impose no prepayment penalties, so as soon as the loan is paid off, energy generated by the PV sys-

tem is completely free!

Of course not everyone plans to stay in the same home for decades to come. In the event of a move, customers can simply transfer the remaining loan amount to the new homeowner.

### WORLD-GEN: WHAT ARE THE KEY BENEFITS FOR INSTALLERS?

**STEPHANE DUFRENNE:** The Energy Freedom Loan program provides installers with an additional revenue stream and eliminates cash flow and support chal-

lenges encountered in some other third-party loan programs. Installers in our Energy Freedom network pay no out-of-pocket expenses for equipment, and see no dealer fees during transactions. We also connect installers with a seamless credit approval process and offer quick payment for completed deals, allowing our partners to spend less time doing paperwork and more time on the roof. In the event of any issues, installers can always count on expert guidance from Upsolar's dedicated support team.

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## STEPHANE DUFRENNE

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### WORLD-GEN: WHAT EQUIPMENT IS INCLUDED AND WHAT GUARANTEES ARE PROVIDED?

**STEPHANE DUFRENNE:** Systems installed through the Energy Freedom Loan use Upsolar's PV modules and racking, and either string inverters from Solectria, or micro-inverters from APS. These high-quality components, installed by pre-qualified professionals, safeguard homeowners' investments from day one, ensuring peak performance and maximum electricity bill savings. Additionally, Upsolar products feature a 10-year workmanship warranty and a 25-year performance guarantee, as well as third-party Insurance protection from AIG.

### WORLD-GEN: ARE THERE PLANS TO EXPAND FROM RESIDENTIAL TO COMMERCIAL MARKETS?

**STEPHANE DUFRENNE:** Projects in this space require much more tailored financing based on variables like site profiles and customers' electricity needs. We can offer financing on a case by case basis. However, we feel the residential market is ripe with opportunity and will maintain our focus in this sector for the time being.

### WORLD-GEN: WHAT ARE UPSOLAR'S US GOALS AND WILL ENERGY STORAGE OPTIONS BE OFFERED IN THE FUTURE?

**STEPHANE DUFRENNE:** The early response we've seen in the California and Arizona markets has been extremely positive. We intend to expand our residential offering to additional states in the future. We will certainly consider complementary technologies like energy storage options as part of our offering down the line.

In the shorter term, we plan to focus on program enhancements like design services, which will enable installers to focus on their primary tasks—selling and installing systems—rather than worrying about procurement or getting credit lines with local distributors.

## JIM GREENWOOD

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strengths in agriculture and biotechnology. A growing bioeconomy would increase our energy security, improve the nation's balance of trade, improve the nation's environmental health, and generate high-quality jobs particularly in rural areas. The organization works closely with companies to ensure that they have the tools, the resources and the relationships to grow and succeed.

Over the past few years, industrial biotechnology companies have made great strides, Greenwood points out. Cellulosic and advanced biofuel companies are at a pivotal point in commercial development, with thousands of workers putting steel in the ground and plants coming online across the nation and around the globe. Renewable chemical and biopolymer companies are commercializing new processes and generating products at competitive prices. New technologies for food ingredients, cosmetics, pharmaceutical intermediates, fragrances and flavorings are emerging. The renewable chemicals market is projected to reach nearly \$84 billion in value in the next five years, with an annual growth rate of 7.7 percent.

"The biotech industry never has and never will be for the risk averse or those unwilling to look over the horizon and to put in the hard work," Greenwood says. "The amazing innovations of today that are better for our planet – such as fuels that can transform the dynamics of global politics – evolved from decades of scientific research. But biotech companies do what they do – they push the envelope of science and technology – despite the risks and the long odds, to be able to bring new and better things into the world."

Jim Greenwood represented Pennsylvania's Eighth District in the U.S. House of Representatives for six terms, from January 1993 through January 2005. A senior member of the Energy and Commerce Committee, he was widely viewed as a leader on health care and the environment.

## STEWART PRAGER

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device. It will be constructed over three years and will be funded through \$3 million from the National Science Foundation and \$1.2 million from Princeton University, Prager said.

PPPL also began the Center for Heliospheric Physics, a joint project with the University's Department of Astrophysical Sciences, where researchers will study the space surrounding the sun. There, violent space weather can interrupt cell phone service, damage satellites, and knock out power grids.

Researchers at the Laboratory have also pursued numerous collaborations nationally and internationally, including the Max-Planck/Princeton Center for Plasma Physics, a collaboration between Princeton University and the Max Planck Society of Germany.

PPPL researchers are also working on "fledgling" studies of plasma-based nanotechnology, Prager said.

Other technologies being investigated at PPPL include a plasma mass filter that could potentially be used to clean up large amounts of toxic waste. Researchers are also working on X-Ray imaging techniques that could have "enormous impact in a huge array of applications," Prager said.

PPPL and U.S. Department of Agriculture researchers are developing a technique that uses radio frequency waves to pasteurize eggs. Princeton University and PPPL researchers are also working on a method to verify whether nuclear warheads being decommissioned contain nuclear warheads.

"All of this diversity of activities does not add up to a huge pile of money," Prager said. "However, they lead to huge scientific creative activity at the Laboratory, so in that way they're incredible."

Prager noted that while NSTX-U has been under construction for the past three years, PPPL researchers have been busy analyzing previous data from the experiment and collaborating with laboratories around the world.