

innovation



The Spectrum of
Clean Energy Innovation



Fundamental Science
Market-Relevant Research
Systems Integration
Testing and Validation
Commercialization
Deployment

Through deep technical expertise and an unmatched breadth of capabilities, NREL leads an integrated approach across the spectrum of renewable energy innovation. From scientific discovery to accelerating market deployment, NREL works in partnership with private industry to drive the transformation of our nation's energy systems.

This case study illustrates NREL's innovations and contributions in Commercialization.

NREL's Industry Growth Forum Boosts Clean Energy Commercialization Efforts

For more than a decade, the National Renewable Energy Laboratory's (NREL) Industry Growth Forum has been the nation's premier event for early-stage clean energy investment. The forum features presentations from the most innovative, promising, and emergent clean energy companies; provocative panels led by thought leaders; and organized networking opportunities. It is the perfect venue for growing cleantech companies to present their business to a wide range of investors.

The caliber of investors and entrepreneurial companies that attend are just a part of what make the forum the preeminent clean energy investment event in the country. The forum's unique presentation format, rich educational content, and rigorous evaluation process leave all participants with a deeper understanding of the evolving energy market and what businesses must do to thrive.

To foster an ongoing and extensive connection with the early stage business community, the forum is designed to stimulate an innovative and entrepreneurial cleantech environment, facilitate robust access to capital for entrepreneurs, and accelerate the commercialization and deployment of clean energy technologies.

Small Business Takes Center Stage

The entrepreneurial companies that attend the forum range from top-tier startups to university and laboratory spinoffs, as well as emerging cleantech companies from across the country and overseas. During the forum, these companies present their core business concepts and overall strategies to leading cleantech venture capitalists, sophisticated angel investors, corporate investors, and strategic partners. This format gives small clean energy companies a meaningful opportunity to explore financing and partnership options and receive constructive feedback from venture financiers and senior business managers.



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NREL's Industry Growth Forums are well-attended, with each annual event drawing about 500 attendees in recent years. The forum attracts leading cleantech venture capital and investment banks, as well as business development executives from global energy companies. Credit: Pat Corkery, NREL



NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

Each presentation is evaluated by a panel made up primarily of established venture capitalists that bring a high level of experience and credibility to presentation and feedback sessions. Participating venture capitalists introduce presenting companies to the introductory stages of the “due diligence process”—the process of proving the assertions and assumptions incorporated in the business plan. The companies can expect to face the due diligence process with increasing frequency as they grow their businesses and expand their networks to include a wider range of strategic partners.

Other forum evaluation panel members, such as senior executives from utility companies and large businesses, bring the perspectives of the user community to the presentation and feedback sessions. They also represent a source of potential partnerships for presenting companies, able to bring strategic resources to start-ups and to provide credibility within the investor community.

Momentum for Moving Technologies to Market

By enabling close collaboration among scientists, analysts, policy makers, entrepreneurs, and venture capitalists, the Industry Growth Forum helps propel technologies and competitive clean energy products and services to the market. Collectively, companies who have presented at the forum since its inception in 1995 have raised more than \$3.4 billion in growth financing. The companies have also become involved in more than 25 strategic partnerships, including acquisitions, mergers, and initial public offerings.

Statistical analysis shows that the forum has a significant, positive impact on the companies’ entrepreneurial success (as measured by the number of acquisitions, mergers, and initial public offerings) and provides greater access to capital for at least three years after the companies present. While the growth of funding usually peaks two years after presenting, 69% of presenting companies receive some level of funding within one year of presenting. Many of the presenting companies that receive funding in the first year also receive larger amounts of funding in the second year.

Insights from past forums help improve the number and rate of commercial successes in the clean energy industry, and have helped NREL and the U.S. Department of Energy (DOE) manage and maximize the impact of their technology development investments. In addition, the forums offer many opportunities from NREL and DOE to collaborate with companies engaged in commercializing renewable energy, energy efficiency, and related technologies.

Impacting Cleantech Business

One of the greatest examples of the Industry Growth Forum’s impact on a new cleantech business is a company developing a revolutionary crystalline-silicon thin-film solar photovoltaic technology.

Ampulse Corporation won the Best Early Seed Investment Award at the 21st forum in 2008. After successfully attaining additional investments from the venture capital firms of Globespan Capital Partners, Battelle Ventures, and El Dorado Ventures, the company was able to begin its quest to create inexpensive silicon solar cells in earnest.

Ampulse joined forces with NREL and Oak Ridge National Laboratory (ORNL) to create a less expensive alternative to wafer crystalline silicon solar cells by leveraging proprietary and patented technology developed at NREL and ORNL. To ultimately see if combining a metal foil technology from ORNL with NREL’s hot-wire chemical vapor deposition technology could create high-efficiency, low-cost solar cells, Ampulse established a cooperative research and development agreement (CRADA) with NREL. In support of the NREL CRADA and a complementary Work-for-Others agreement with ORNL, the project has received about \$1 million from DOE’s Technology Commercialization & Deployment Fund.

Quick Facts About the NREL Industry Growth Forum

- The NREL Industry Growth Forum started in 1995; the 23rd forum was held in 2010.
- The 2010 forum featured 34 emerging clean energy companies, competitively selected by a panel of 120 investors and industry experts.
- Winners of past forums include such recognizable names as HelioVolt Corporation; Konarka Technologies, Inc.; SAGE Electrochromics, Inc.; and SolFocus, Inc.
- Companies presenting at the NREL Industry Growth Forum have raised \$3.4 billion in funding, with 63% coming from private sources, such as venture capitalists; nearly 30% from public markets; and most of the remainder coming from government grants.
- More than two-thirds of companies that ultimately receive funding receive some level of funding within one year of presenting.
- The forum presenter that has garnered the most funding is Clipper Windpower, with \$866.6 million in funds, according to New Energy Finance.

National Renewable Energy Laboratory

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