

Department of Defense Generates Clean Energy from Landfill Methane Using FlexEnergy

FlexEnergy is a SAIL II portfolio company

Recently, FlexEnergy Inc., the Irvine, CA based clean tech company, installed its first commercial order of the Flex Powerstation FP250 at the Department of Defense's (DoD) Fort Benning, GA Army base. The ceremonial ribbon-cutting will take place at Fort Benning in early November. The Flex PowerStation will convert landfill gas into renewable electricity with zero emissions and power the equivalent of 250 homes, reducing both the Army's carbon footprint and its operating expenses. FlexEnergy manufactures a complete product line of low emission turbines which it claims to be extremely

flexible for fuel requirements. The company says that the FlexPowerstation is the integration of a proprietary thermal oxidizer and a Flex-customized gas turbine combined with unique system architecture and software control algorithms. Flex claims that the system completely oxidizes air with dilute methane mixtures (1.5% methane). The Flex system tolerates both moisture and siloxanes in the landfill gas and can run directly on low pressure, low flow, and low BTU fuel gas. FlexEnergy CEO Joe Perry explains: "Instead of venting or flaring waste gases from landfills, our Flex Powerstation enables customers to turn those methane gases into

FlexEnergy

energy and solve environmental problems associated with methane at the same time." Southern Research Institute selected the FlexEnergy technology under a demonstration program funded by the DoD Environmental Security Technology Certification Program, which seeks innovative and cost-effective technologies to address its high-priority environmental and energy requirements. FlexEnergy expects the system to produce 250 kW of energy.

www.flexenergy.com

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Cleantech Group's i3—An Essential Tool in the Cleantech Sector

Cleantech Group is a SAIL I and SAIL II Portfolio Company

In June 2011, Cleantech Group launched its i3 platform, a kind of "linked in" platform for the Cleantech sector. Since the launch date, i3 already tracks over 4,000 relationships across the cleantech sector including joint ventures, customer relationships and technology partnerships. i3 quickly built more than 15,000 clean technology

company and investor profiles and continues to grow daily. The web-based tool provides real-time updates on investments, acquisitions, IPOs, partnerships, and other daily events in the cleantech market. i3 tracks industry movements in thirteen cleantech categories. Subscribers, who receive in-depth information, state: "[i3 is an] incredibly dynamic platform, rich in content and easy to use ... i3 becomes an

essential tool in the cleantech investment sector, not only as a source of immediate information, but also as a trend analysis tool that allows future forecasts." i3 continues to develop under Cleantech Group's ongoing commitment to anticipate subscriber needs and remain on the forefront of the dynamic cleantech landscape.

www.cleantech.com

News Briefs:

- Xtreme Power Makes Inc. Magazine's List of America's Fastest Growing Private Companies (September 2011)
- Congressman John Campbell (R-Orange County) visits FlexEnergy's Irvine Headquarters (September 2011)
- CNS Response CEO George Carpenter to Present at Rodman & Renshaw 13th Annual Healthcare Conference (September 2011)

WaterHealth Centers: Profitable Solutions to the World's Water Problems

Waterhealth is a SAIL I and SAIL II portfolio company

More than 1.2 billion people lack access to clean water. The United Nations believes that lack of access is the largest cause of disease in the world.

While charitable programs address this issue, for-profit models address the global water crisis more effectively.

On limited budgets, the public sector can do much more by supporting for-profit models than by facing the issue alone. However, collaboration with local, state, and federal governments, NGO's, and public organizations is essential.

WaterHealth International's (WHI) "WaterHealth Centers"

exemplify this "for-profit/collaboration" model. These low-cost, fully managed systems offer safe water in underserved communities at a cost of less than 10 cents per 20 liters of water. The average WaterHealth Center provides 3,000 individuals with up to 20 liters of clean, affordable water daily.

The Centers purify the water to World Health Organization standards and even though the water is affordable, it is *not free*.

The WHI model is sustainable because it builds a local stake, engages local people and uses the revenues from water purification to support ongoing operations, maintenance and quality monitoring services.

Setting up a WaterHealth Center requires a one-time investment and the cost per beneficiary is between \$5 to \$10. The WHI model is more cost-effective than other models.

Their model is groundbreaking due to its unique combination of preparation, technology, and execution. WHI uses state-of-the-art business tools, while maintaining local implementation. Several visionary organizations (International Finance Corporation, Dow Venture Capital and SAIL Ventures) support WHI and their goal of installing over 3,000 systems by 2014.

www.waterhealth.com



Clean Energy Innovation and America's Armed Forces

Militaries that fail to innovate lose strategic advantage. Nations that fail to innovate lose economic edge. Clean energy innovation is an essential strategy for making the U.S. safer, stronger and more successful. As the largest consumer of energy in the U.S., the Department of Defense (DoD) plays a crucial role in clean energy innovation. If the DoD invests in clean energy today, it will save lives and money for years to come.

What Clean Energy Can Do For DoD: Investing in clean energy mitigates the DoD's three major energy challenges: (1) **Operational Risk:** today's soldiers require 22 gallons of fuel per day on average, an increase of 175 percent since the Vietnam War. From 2003 to 2007,

more than 3,000 uniformed casualties were associated with delivering fuel. (2) **Security of Supply:** many of the DoD's operations rely upon large quantities of oil, the majority of which must be imported, often from unstable regions. Also, installations rely on electricity transmitted over an aging grid. (3) **Price Volatility:** the DoD is not immune from oil price spikes. This results in budgetary challenges. In 2005, the DoD spent \$8.8 B. In 2008, the DoD spent \$17.9 B (more than double the cost for almost the same amount of fuel in 2005).

What DoD Can Do For Energy Innovation: the DoD brings three major strengths to the stages of energy innovation: (1) **Research and Development:** the DoD's

mature R&D systems give them a rich understanding for far-reaching technology development. (2) **Scale:** the DoD conducts operations across the U.S. and the world, in all regions, climates and geographic settings. The DoD is apt to proving ground for new technologies and applications. (3) **Purchasing Power:** the DoD acquires \$400 B worth of goods and services each year. This purchasing power is crucial for commercialization of new clean energy technologies.

DoD's Investments In Clean Energy Continue to Grow: the DoD's budget for energy security initiatives increased from \$400 mm to \$1.2 B over the past four years. Given the current circumstances, this amount will continue to increase for many years to come.



M2 Renewables Signs Strategic Distribution Agreement

M2 Renewables is a SAIL II portfolio company

M2 Renewables, Inc. (M2R) and PowerHouse Energy Inc. (PHE) announced the signing of a Strategic Distribution Agreement, granting M2R exclusive rights to distribute and sell the Pyromex AG Ultra High Temperature Gasifier (UHTG) for use in PHE's wastewater market sector for applications of 50 tons per day or less.

The UHTG system, which is modular, scalable and highly efficient, facilitates the conversion of a broad range of waste materials and sub-viable coal deposits into various forms of energy. The UHTG system operates without the consumption of high volumes of water or power and occupies a small physical plant footprint.

M2R now offers both 5 and 25 ton per day (tpd) Pyromex reactors. PHE and M2R can deliver a fully integrated system including wastewater solids screening and dewatering, solids handling, drying, thermal conversion, synthetic gas (syngas) quench and cleanup, methanation, and electrical generation.

According to David Moard, CEO of PHE, "We are very pleased to formalize our working relationship with M2R, a progressive company that is re-defining efficient, cost effective and sustainable wastewater treatment. PHE's zero-emissions Pyromex reactor is a perfect complement to M2R's technology offering. We look forward to working with M2R to help wastewater treatment owners worldwide achieve a greater measure of

energy independence."

Gerhard Forstner, CEO of M2R added, "M2R's full system capability, which combines our patented MicroScreen and the UHTG Pyromex Gasifier, is a solution that is one of a kind and un-matched in terms of energy efficiency and financial competitiveness. In addition to its cost savings potential, the M2R Waste-To-Energy solution offers the largest carbon footprint reduction for sludge treatment and disposal worldwide. We are excited about driving the future of wastewater treatment—plus renewable energy solutions both domestically and internationally."

www.m2renewables.com



M2 RENEWABLES

Meet Xtreme Power's New Chief Technology Officer

Xtreme Power is a SAIL I and SAIL II portfolio company

Xtreme Power, developer and manufacturer of utility-scale energy storage and digital power management systems, announced the appointment of Alan J. Gotcher, Ph.D. as Chief Technology Officer. In his new role, Dr. Gotcher will oversee research and development activities as well as formulate long-term visions and strategies to drive the continued adoption of Xtreme Power's technology by utilities and independent power producers.

"Alan's 25 years of leadership with material science companies and successful track record of introducing disruptive battery

technologies positioned for rapid adoption are critical to supporting XP's strategic direction and growth," said Carlos Coe, CEO of Xtreme Power.

Dr. Gotcher has an exceptional track record in product and business development, as well as driving significant revenue growth in the energy storage and material science sectors. From 2004 to 2008, Dr. Gotcher served as President, CEO and Director for energy storage and power product company Altair Nanotechnologies Inc., where he developed key partnerships with several Fortune 500 companies.

"Xtreme Power is winning large-scale, cost-competitive

commercial storage projects, and the company's advanced technology has all the characteristics sought by a variety of end users," said Gotcher. "This is an especially exciting time for Xtreme Power."

The company's commercial projects in development and operation include the world's largest storage-integrated wind farm in partnership with Duke Energy, as well as providing the energy storage component for the Tres Amigas Superstation, a massive project connecting America's three major power grids.

www.xtremepower.com





SAIL Capital Partners (www.sailcapital.com) is a leading cleantech capital investment firm with a global vision of technologies, markets and opportunities. We invest in cleantech companies with proven technologies, visionary leadership and exciting growth potential. We have invested in a number of today's leading cleantech companies including: The Cleantech Group, Xtreme Power, Ice Energy, Dow Kokam, Enerpulse, Activeion, SNTech, FlexEnergy, Paragon Airheater Technologies, M2 Renewables and WaterHealth International. SAIL has offices in California, New York, and Washington D.C. and a global network of investors and advisors.



SAIL Capital Partners
3161 Michelson Dr
Suite 750
Irvine, CA 92612

Inquiries and Sources:
Sarah Pavlik
spavlik@sailcapital.com
www.sailcapital.com

Sources:

- Cleantech Group
- FlexEnergy
- PR Newswire
- Market Watch
- FastCompany.com
- Pew Charitable Trusts
- Inc. Magazine
- CNS Response

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Speaking of SAIL

October 11 – Fullerton, CA

Sarah Pavlik will speak at *Western State University College of Law*. She will speak to students about applying their Juris Doctorate in non-traditional applications, like private equity.

October 9 – Malibu, CA

Hank Habicht will speak at the *Pepperdine University School of Law*. His panel will discuss and answer questions regarding the "Justice Department: Reagan to Obama."

September 29 – New Orleans, LA

Walter Schindler spoke at the *Tulane Business Forum*. He explained, "How cleantech investing can be both profitable and effectual."

September 12 – Irvine, CA

Walter Schindler spoke at *CleanTech OC's 2011 Conference and Expo*. His panel "Cleantech by the Numbers," spoke about the latest investment trends.

September 14 – San Diego, CA

Chris Brown spoke at the *Advanced Energy Storage 2011 Conference*. He spoke about the investment landscape within the energy storage industry.

September 19 – Miami, FL

Walter Schindler spoke at the *IMN Alternative Investment Summit*. His panel discussed clean energy and sustainable investments.

June 29 – New York, New York

Hank Habicht spoke at the *Council on Foreign Relations* roundtable discussion. His panel discussed global water scarcity and its geopolitical and business implications.

June 29 – Fairhope, Alabama

Walter Schindler addressed the annual *Municipal Employees' Retirement System of Louisiana (MERS) Trustee Conference*. His talk reported on SAIL's recent progress in the cleantech sector.

June 15 – Santa Barbara, CA

Chris Rhoades spoke at the *Opal Investment Trends Summit*. His panel focused on recent trends in international private equity.