

Redding City Council Plans to Expand Storage Program

Redding Voted this summer to Expand Ice Energy's Thermal Energy Storage

Ice Energy is a SAIL I & SAIL II portfolio company

Marking the start of summer and seasonal peak demand, the Redding City Council voted June 19 in favor of the second phase of Redding Electric Utility's (REU's) Thermal Energy Storage Program with Ice Energy.

Ice Energy, a leading provider of distributed energy storage and smart grid solutions for increasing energy system efficiency and improving grid reliability, and REU will collaborate on the second phase. The program to install Ice Bear® units within the northern California territory aims to reduce peak electricity load demand by up to 6 MW over five years.

REU Utility Director Barry Tippin, said, "We are very excited to continue the expansion of our Energy Storage Program. After more than seven years of evaluation, installation and analysis, the Ice Bear product has proven to be a good fit for the Redding community and a cost effective means of shifting on-peak air conditioning demand to off-peak hours. This program improves REU's electric system efficiency and creates

essential jobs in our community."

Currently, 40 commercial buildings in Redding have Ice Bears. Those installations have exceeded 1 MW of peak demand reduction and benefited the local economy by employing local HVAC technicians and engineers. The utility reported a 95 percent reduction in peak load demand since the units were installed. The latest phase of Ice Energy's Thermal Energy Storage Program significantly expands the program, and brings manufacturing jobs to Redding.

The Ice Bear system is a distributed energy storage solution used in conjunction with commercial direct-expansion (DX) air conditioning (AC) systems. Ice Bear units utilize electricity from the grid during off-peak periods, converting it into stored thermal energy in the form of ice, and use the ice to perform useful work for building cooling by displacing the operation of commercial AC condensing units during on-peak periods.

The benefits include:

- Improved grid efficiency and reliability



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- Deferral of the need to add new generating, transmission, and or distribution infrastructure
- Reduced emissions
- Local green job creation

REU expects to have the thermal energy storage program completed in 2017. Skyway Machine, a local Redding manufacturing company, will provide final assembly of the new Ice Bear units.

Skyway CEO, Ken Coster, said, "The team here at Skyway is very excited about this new opportunity for Redding and for Skyway to continue our business diversification and expansion. We have been working with REU and Ice Energy for the past year to bring this company and new manufacturing jobs to Redding and truly look forward to a long relationship with REU and Ice Energy."

Inside this Issue:

- Maui Electric Company Relying on Xtreme Power for Storage 2
- Spotlight: Ontario Emerging Technologies Fund 2
- Guinness Commissions WaterHealth Centers in Ghana 3
- Ice Energy Relocates to California 3
- Ontario Cleantech Sector – Quick Facts 4



Quick Updates:

- ❖ Cleantech industry contributed exported goods and services of **\$53.9 billion** in 2009.
- Brookings Institute
- ❖ Cleantech jobs offered median wages 20% higher across the United States in 2010 and accounted for **2.7 million jobs**.
- Brookings Institute

Maui Electric Company Relying on Xtreme Power for Storage

Xtreme Power is a SAIL I & SAIL II portfolio company

To reduce dependence upon fossil fueled generators for energy production, Maui Electric Company (MECO), the local utility has embarked on an alternative energy program that maximizes the exploitation of the prevailing winds on the island. Renewable energy developer First Wind installed the Kaheawa Wind Power II to be commissioned in mid-June. It will add an additional 21 megawatts of wind farm electricity production capacity integrated with a 10 MW energy storage solution provided by Xtreme Power.

The wind may or may not blow, but maximizing the wind energy delivered while maintaining grid stability requires sophisticated technology that will be met

by Xtreme Power's Dynamic Power Resource (DPR) – an integrated power management and energy storage solution that utilizes Xtreme Power's intelligent controls to optimize performance. When the wind is highly intermittent, the intelligent controls command the DPR to rapidly charge or discharge to smooth the power delivered to the utility. If the wind ceases, the utility can command the storage system via Automatic Generator Control (AGC) to discharge electricity onto the grid while a generator is brought online.

Without the DPR, MECO would have to run a fossil-fuel powered generator for spinning reserves during high wind conditions to maintain sufficient grid reliability. Running this generator decreases the

amount of electricity demand that could be served by KWPII wind energy. Instead, the Maui utility will rely on 10 MW of responsive reserves from the Xtreme Power DPR, which can discharge the needed amount of energy to bring the offline generator online to replace a sudden loss of wind. By employing the DPR, the generator can remain offline, thus allowing First Wind to reliably deliver 70% more wind energy to the grid annually.

Xtreme Power provides scalable, real-time power management and energy storage solutions that enable a sustainable, reliable and cost-effective electric grid. This is the company's 8th utility-scale installation and the third purchase by First Wind for Xtreme Power technology.



Spotlight: Ontario Emerging Technology Fund

In 2009, the Ontario Ministry of Research and Innovation (now Ministry of Economic Development and Innovation) announced the creation of a new government fund. The Ontario Emerging Technologies Fund ("OETF") was created to co-invest – with qualified venture capital funds and other private investors – directly into companies working within the focus areas defined by Ontario's Innovation Agenda:

- Clean technologies
- Life sciences and advanced health technologies
- Digital media and

information and communications technologies.

A discretionary, non-entitlement investment program, the OETF is a \$250 million fund that will commit a maximum of \$50-million per year for five years. Investments will be made alongside qualified co-investors into innovative, high-growth Ontario companies.

Only Qualified Investors – those who have applied and been approved by Ontario Capital Growth Corporation, the fund manager – can propose investments to the fund. Companies interested in investment must work

through Qualified Investors.

The OETF will co-invest alongside Qualified Investors on the same terms and at the same time.

In 2011, SAIL became the first American Cleantech Venture Capital firm to receive approval and be listed as a qualified investor. Since then, SAIL has announced a partnership with Stifel Nicolaus Weisel in Canada which was announced at a press conference held by the Minister of Economic Development and Innovation, Brad Duguid at the Ontario Parliament in Toronto.

See page 4 for more on Ontario Cleantech Sector



Guinness Commissions WaterHealth Centers in Ghana

WaterHealth is a SAIL I, SAIL II & SAIL Safe Water portfolio company

Guinness Ghana Breweries Ltd (GGBL) has commissioned two WaterHealth Centers in Kpembe and Makango in Ghana.

This brings to a total of 5 WaterHealth centers GGBL and its parent company, Diageo has funded and commissioned for 5 communities across the Northern, Greater Accra and Volta regions under the Safe Water for Africa partnership (SWA) – an innovative multi-year partnership between GGBL, Diageo, the Diageo Foundation and the Coca-Cola system to bring safe drinking water to 2 million Africans by 2013.

Speaking at the official opening ceremony in Kpembe, Corporate Citizenship Manager Richard Ahiagble, said 'GGBL remains committed to enriching lives and empowering local communities through

sustainable access to safe drinking water. Water is life, it is critical to health and the general wellbeing of every community. As a business, we believe strongly that when communities thrive, our business thrives – hence our continuous effort to support local communities.'

He noted further that, aside the Kpembe and Makango WaterHealth centers, GGBL will be commissioning two water extension projects within the Tamale Metropolis to commemorate *Arthur's Day*– a day set aside to celebrate the philanthropic attributes of Arthur Guinness and employees of GGBL - on 27 September and will undertake various community projects to mark the day.

On his part, Nyen-Churo Ebore II, Kpembe Wura (Paramount Chief of Kpembe traditional area) thanked GGBL for bringing 'the gift of life' to the Kpembe community.

He said 'the main challenge for



Kpembe for many years has been access to safe drinking water. This kind gesture by Guinness Ghana Breweries Ltd will directly address this need."

He urged GGBL and other well-meaning donors to support the community with a health center.

Mr. Alhaji Abdul Karim, the East Gonja District Coordinating Director, commended GGBL's effort and support describing GGBL as a 'development partner' supporting Government's effort to provide access to clean drinking water for rural and peri-urban communities.



Ice Energy Relocates to California

Ice Energy is a SAIL I & SAIL II portfolio company

Glendale Water & Power (GWP) announced that Ice Energy, a leading green energy company that supplies advanced energy storage solutions to the electric utility industry, is relocating its corporate headquarters and national logistics center to Glendale. The move comes after the successful installation of 1.5 MW of Ice Bear energy storage units as part of GWP's U.S. Department of Energy supported Smart Grid Project.

"Ice Energy's relocation of its headquarters is expected to bring many benefits to Glendale and shows how GWP's investment in Smart Grid is providing long term benefits to Glendale," said GWP General Manager Glenn Steiger. "As GWP evaluates larger energy storage investments and other California Municipal and Investor Owned Utilities develop energy storage projects, the City of Glendale will surely benefit from Ice

Energy's relocation."

In the last year, GWP's Ice Bear project installed energy storage units known as Ice Bears at 28 Glendale city buildings and 58 local small, medium sized, and large commercial businesses. The project was supported by local trade companies and created approximately 40 jobs during the 1 year installation process. A total of 180 Ice Bear units have been installed in Glendale since the program's inception in 2005.



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

Ontario Cleantech Sector – Quick Facts

Source: Ontario Ministry of Economic Development and Innovation

- Ontario's clean energy strategy has leveraged more than \$27 billion in new investment and economic opportunities.
- Ontario's environmental sector (which includes clean tech) is worth an estimated \$8 billion in annual revenues and \$1 billion in export earnings.
- Ontario's Green Energy and Green Economy Act (GEA), passed in 2009, places a priority on establishing Ontario as the North American leader in producing and using clean and renewable sources of energy including wind, water, solar, biomass and biogas power.
- With innovation at the core of its provincial water strategy, Ontario is fast becoming a global clean water center thanks to an educated, highly skilled workforce and vast expertise in clean water technologies and water protection.

In fact two of the world's leading water and wastewater treatment technologies - UV purification and membrane filtration - were developed in Ontario. We are also home to leaders in detecting leaks in underground water mains, extracting value from industrial wastewater, monitoring water quality in real-time, and several other key fields.

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Sources:

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- JoyOnline
- Glendale Water & Power

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