



October 21, 2013

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505 Van Ness Ave, San Francisco, CA 94102

Re: SCE's Preferred Resource "Living" Pilot

Ice Energy Holdings Inc. ("Ice Energy") is pleased to submit this proposal to Southern California Edison Company ("SCE") and the California Public Utilities Commission ("CPUC") pursuant to the CPUC's invitation to interested parties to submit proposals for SCE's Preferred Resource "Living" Pilot (the "Living Pilot").

Ice Energy's simple and proven technology provides clean, dispatchable, firm "negawatts" that can be reliably called upon every day, and therefore is one of the technologies that can and should fill the gap created by the SONGS closure and be tested as part of the Living Pilot. Our Ice Bear is a competitively priced preferred resource that meets local reliability needs while ensuring grid stability and resiliency, and meets the specific requirements of Attribute Classes A and D.3. Ice Energy has the manufacturing, site acquisition and installation capacity to fill hundreds of megawatts of the gap created by the SONGS closure, and to manage to zero the peak load growth of 25 MW per year forecasted for the Johanna and Santiago substations targeted by the Living Pilot. Ice Energy proposes that SCE procures and tests as part of the Living Pilot, 10 MW of Ice Bear firm, fully dispatchable capacity which Ice Energy will install on the feeders supplied by the Johanna and Santiago substations at a turnkey price of \$2.5 million/MW, including manufacturing, site acquisition and installation ("Proposed Project").

Ice Energy

Ice Energy (www.ice-energy.com) is a leading provider of firm and fully dispatchable distributed energy storage and demand response to the utility industry. We are based in Glendale California and have manufacturing facilities in Hammondsport New York and Redding California.

Ice Energy has developed Ice Bear projects in over 40 utility service territories across North America including California, ranging in size from single unit pilots to a project intended to substitute for a peaking generation plant. The largest project is an ongoing program with the Southern California Public Power Authority that contracted for 53 MW for their member utilities. To date 2.5 MW have been ordered and installed with another 6 MW scheduled to be installed in 2014. This project won the 2013 Energy Storage of North America (ESNA) Innovation Award In Energy Storage. The next largest project is another ongoing program, this one with Redding



Electric Utility (REU) that contracted for 6 MW on a schedule of approximately 1 MW/year to eliminate annual load growth and make up for a 2016 coal energy contract divestiture.

The Ice Bear

The Ice Bear (<http://www.ice-energy.com/product-overview-video>) is an intelligent distributed thermal energy storage system that works in conjunction with commercial direct-expansion (DX) air-conditioning (AC) systems, specifically the refrigerant-based, 4-20-ton packaged rooftop systems common to most small to mid-sized commercial buildings. The Ice Bear acts as a battery for the AC system, but instead of storing electricity, it stores cooling, in the form of ice.

The Ice Bear operates in two basic modes, Ice Cooling and Ice Charging, to store cooling energy at night, and to deliver that energy the following day. During Ice Charge mode, a self-contained charging system freezes 450 gallons of water in the Ice Bear's insulated tank by pumping refrigerant through a configuration of copper coils within it. The water that surrounds these coils freezes and turns to ice. The condensing unit then turns off, and the ice is stored until its cooling energy is needed. When dispatched, typically during the peak hours of the day, the Ice Bear, fully charged from the night before, switches to Ice Cooling mode. The Ice Bear uses the ice, rather than the AC unit's compressor, to cool the hot refrigerant, slowing melting the ice as it travels through a series of copper coils. A small, highly efficient pump pushes ice-cold refrigerant through a modified Ice Energy LiquidDX® evaporator coil installed in the conventional air conditioning unit. The Ice Cooling cycle lasts for at least 6 hours. Once the ice has fully melted, the Ice Bear transfers the job of cooling back to the building's AC unit, to provide cooling, as needed, until the next day. During the cool of the night, the Ice Charge mode is activated and the entire cycle begins again.

The intelligence of the Ice Bear is supplied by the onboard CoolData controller and online CoolData dashboard that provides Ice Energy and SCE remote access to each Ice Bear unit via a private wireless 3G network and its CoolData infrastructure. With that access units can be monitored and dispatched as desired. All logged data is archived on an OSIsoft PI historian. SCE will have access to the asset performance history and will have the capability to remotely schedule and dispatch the capacity by individual unit, grouped by distribution feeder and/or substation or as a single aggregated resource.

The Ice Bear has a life of at least 20 years.

Proposed Project

The Proposed Project would be on installed on the feeders supplied by the Johanna and Santiago substations by Project Cool Move (<http://www.ice-energy.com/project-cool-move-video>), a turn-key program developed by Ice Energy to make installation on commercial and industrial buildings fast, simple and straightforward – from start to finish. The program takes an integrated, systematic approach to grid-scale deployment – enabling deployment as rapidly as possible, complete with a pre-packaged set of awareness tools. With Project Cool Move, Ice Energy seamlessly handles everything – from customer recruitment and site acquisition, through engineering and permitting, to installation and performance assurance. This includes program marketing, site survey/qualification, customer acquisition, installation, maintenance, support, and customer recognition.



The number of Ice Bear units required for the Proposed Project capacity will depend on the age and size of the AC units to which the Ice Bear units are connected. The amount of capacity each Ice Bear unit contributes to the Proposed Project will be determined at commissioning using an agreed lookup table that shows the peak demand of different sizes and ages of AC units in the applicable climate zone, adjusted back to the generating source to show the generation required to meet that AC units peak demand.

To ensure that the Proposed Project can be executed quickly and efficiently if it is selected, Ice Energy has already begun reaching out to city and county governments, community and university colleges and small and large commercial and industrial facilities in Orange County, Long Beach, Seal Beach, Westminster, Huntington Beach, Costa Mesa, Orange, Irvine, Mission Viejo, Garden Grove, Fountain Valley, Tustin, Lake Forest, Laguna Hills, Laguna Woods, Laguna Beach, Laguna Niguel, Newport Beach, Aliso Viejo, Stanton, Cypress, La Palma, Los Alamitos, Villa Park, Buena Park, Fullerton, Placentia, Yorba Linda, Brea, La Habra, Norwalk, Downey, Whittier, El Monte, West Covina, Pomona, and Chino Hills. The Proposed Project will create 60 green collar jobs in the participating communities.

Contract

Ice Energy's preferred commercial structure for the Living Pilot is a sale of the assets to SCE at the quoted turnkey price of \$2.5 million/MW. There would be an agreed down payment with the remainder payable as capacity is commissioned. If desired, Ice Energy can also provide long-term preventative maintenance, monitoring and control for an annual fee of 3% of the turnkey price adjusted by CPI. If required, Ice Energy can arrange financing so that it can sell the resource as a service under a PPA-type contract. This would be the preferred structure for any larger scale project.

Thank you for considering our proposal. We look forward to participating in the Defining the Living Pilot symposium and helping SCE meet its local reliability needs.

Sincerely,

Dave Prezioso

Dave Prezioso, CEO



ICE ENERGY

