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it comes to energy efficiency," said Somers. "Using BuildingAdvice, we help them to realize just how much money they spend on energy, and how much of that is HVAC related."

## Energy storage boosts building's LEED score

Independence Station, a 57,000-square-foot mixed-use building in Independence, Ore., is aiming to be the highest-scoring Leadership in Energy and Environmental Design-certified building ever.

Developers chose Calmac's IceBank energy-storage system to cool the \$15 million project, scheduled for completion in 2010. The ice storage technology is part of the overall HVAC system, designed to offset the energy usage during the peak demand hours.


By using ice created during off-peak hours inside two ice storage tanks, the building will be able to run off the electricity grid during daily peak-power times, saving costs by minimizing expensive electricity demand charges.

During the utility's peak demand period, the building will operate on power produced by biodiesel generators and be cooled by the ice storage plant. During this time, excess power generated by the 125-kilowatt photovoltaic system will be sold back to the utility, helping it meet peak demand.

At night, the computer-based building-management system will decide when to shut down the generators and start making ice. The goal is for Independence Station to be a net-zero energy building using Smart Grid technology, with Calmac's IceBank at the heart of the cooling system.

"Cooling a building represents the single, largest demand for electricity during hot summer months. Calmac solves the problem of how to meet peak demand load with on-site power generation," said Jim Krumsick, the electrical engineer on the Independence Station project. "Making ice during off-peak hours in the summer reduces the load on the waste vegetable oil fueled co-generation system during peak demand hours. This allows us to downsize equipment and thus reduce costs and the environmental impact of on-site co-generation."

"Our goal is to earn between 64 and 66 LEED points out of a possible 69 to make us the world's greenest building," said Steven Ribeiro, developer for the project. "As part of the overall HVAC system, Calmac helps add crucial performance characteristics and flexibility with its energy storage technology."

"Calmac is proud to be a part of the Independence Station project," said Mark MacCracken, Calmac CEO. "The HVAC system, which includes the IceBank energy-storage system, is designed to earn LEED points for optimizing energy performance. Calmac is dedicated to helping buildings lower their impact on the environment and the Independence Station project allows us to do just that." 



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