University of California, Irvine

MelRok Success Story

MelRok's First Mission at UCI

After commissioning the Sue and Bill Gross Stem Cell Research Building, equipped with advanced energy systems and designed using stringent energy efficiency standards (including LEED Platinum), UC Irvine needed to confirm that the building met or exceeded its efficiency goals and planned return on investment (ROI).

To measure and verify the energy efficiency of Gross Hall, UCI needed more than just an energy meter, it needed a metering platform with analytical tools to accurately profile the building's energy consumption. UCI's search led them to MelRok's EnergiStream Platform (ESP).

MelRok confirmed that Gross Hall was remarkably efficient and also discovered an opportunity to save 20% off Gross Hall's peak energy costs by making simple adjustments.

This initial success with UCI was the first in a series that helped propel UCI to the forefront of energy management best practices.

UCI's Challenge

Beyond the measurement of energy efficiency at Gross Hall, UCI had a much larger and more serious energy challenge. In previous attempts to manage its energy generation and usage, UC Irvine had installed a variety of energy meters from different vendors, including power, gas and water meters. UCI's challenge was the collection, analysis and reporting of data in real time from all existing meters on campus. Beyond its existing metered points, UCI needed visibility into the energy consumption in an additional 100 buildings on campus, including its central plant.

To meet the challenge, UCI issued a competitive solicitation for a new energy monitoring platform that leverages the existing meters and integrates them into one unified energy analytics and reporting platform.

The UCI campus demand exceeds 17 MW with an average daily consumption of more than 264 MWhr, most of which is generated on campus.

MelRok's Expanded Role

As a result of a competitive solicitation in which the best energy technology companies in the field submitted proposals, MelRok was selected as the technology of choice for a campus wide real time energy monitoring platform at UCI.

MelRok's role expanded to providing a platform for the real time monitoring of energy consumption in more than 100 buildings on campus, in addition to the central plant, residential halls, electrical distribution systems, and electric vehicle charging stations.

MelRok's installed platform includes the Touch Pro, an advanced streaming energy gateway with inputs for up to 24 CTs, an embedded BACnet/IP client, BACnet/IP server, Modbus TCP client, SNMP client, and an OpenADR DRAS (Demand Response Automation Server) client.

UCI: Energy Overachiever

In 2013, the UCI campus consumed 23% less energy than what was consumed in 2008. This earned UCI the distinction of being recognized by the DOE as the first educational institution in the nation to meet and exceed the objectives of DOE's Better Building Challenge.

The U.S. Department of Energy (DOE) created the Better Building Challenge initiative to make commercial buildings, multifamily housing, and industrial plants at least 20% more energy efficient by 2020.

UCI met the DOE challenge 7 years early.

UC Irvine is the first educational institution in the nation to meet or exceed this objective. These savings reflect reduced energy use in 7 million square feet of building space.

> In 2013, DOE recognized UC Irvine for already surpassing its 2020 energy efficiency goals.

Part of UC Irvine's success at exceeding this goal was the use of the MelRok EnergiStream Platform.

DOE Microgrid Award

MelRok partners with UC Irvine's Advanced Power and Energy Program (APEP) to further the state of the art in demand management and microgrid technologies. The partnership includes working on a US Department of Energy (DOE) funded contract to develop a next generation microgrid controller. The APEP-led team was selected in a nationwide competitive solicitation.

The APEP-MelRok collaboration includes providing support to the Irvine Smart Grid Demonstration Project, and supporting APEP's research efforts in renewable energy integration.

> UCI & MelRok collaboration include working on a DOE-funded effort to develop a next generation microgrid controller.