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Optimizing solar energy

By [Sam Charles](https://engineering.ok.ubc.ca/about/contact/sam-charles/) (https://engineering.ok.ubc.ca/about/contact/sam-charles/) on January 6, 2021 (Wednesday, January 6th, 2021, 12:43 pm)



A new residential solar energy system atop the VEDA student residences near UBC's Okanagan campus is being analyzed, and may serve as a real-world lab for UBC researchers.

Most people are familiar with solar panels, but this system would be a little different in that researchers would be tweaking and adjusting it to optimize its performance.

If the design and modeling of the PV system shows favourable results, the system will be implemented and constantly monitored by a team of researchers who will document environmental and performance data. Through computer-based modelling, the researchers aim to maximize both the profitability and energy output of the system.

"This project targets the design and implementation of a residential solar system to determine actual performance and costs for users in Kelowna and similar areas that share its unique environmental conditions," explains [Alexander Uhl](https://engineering.ok.ubc.ca/about/contact/alexander-r-uhl/) (https://engineering.ok.ubc.ca/about/contact/alexander-r-uhl/), an assistant professor at the School of Engineering and principle investigator of the project.

Uhl and his team will investigate various solar technologies, installation parameters, power conversion systems, and energy storage.

According to Uhl, the combination of cutting-edge simulation software and evaluation tools is strengthened by collaborations with partners [Mitacs](https://www.mitacs.ca/en/) (<https://www.mitacs.ca/en/>), [VEDA Exclusive Student Living](https://www.vedaliving.ca/) (<https://www.vedaliving.ca/>), and [Enbala Power Networks](https://www.enbala.com/) (<https://www.enbala.com/>). “There is no question that having great collaborators, who share our desire to augment clean and renewable energy solutions, is paramount to enacting innovations in this area.”



Image courtesy of VEDA Exclusive Student Living


With one of the highest average temperatures in Canada at 14.3°C, mild winters, and mean daily insolation of 3.61 kWh/m², Kelowna is an ideal location for the use of solar energy systems. In fact, the Okanagan receives 20% more solar irradiance than Berlin, which has one of the highest numbers of solar installations per capita in Europe.

“We’re excited to provide a platform to validate the technical and economic viability of solar systems in the Okanagan, inspire and train students in green technologies, and provide clean and renewable energy for the region,” says Uhl.

The project is coordinated by the [Green Construction Research & Training Centre](https://gcrtc.ubc.ca/) (<https://gcrtc.ubc.ca/>), a joint initiative of UBC Okanagan and Okanagan College, Mitacs Accelerate funding and a partnership with VEDA Exclusive Student Living and Enbala Power Systems.

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February 15, 2021 at 5:42 pm (Monday, February 15, 2021 5:42 pm) (Monday, February 15, 2021 5:42 pm)
Exciting to hear about this PV system project at UBCO!

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