

# Industrial Internet of Things (IIOT) Power Metering

## Energy & Power Innovation Centre



### FUNDER:

Ontario Centres of  
Excellence

### INDUSTRY PARTNER:

Gerrie Electric  
Wholesale

### TIMELINE:

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### RESEARCH TEAM:

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### KEY STATS:

The International Energy Agency (IEA) estimates that IIoT technology can offer savings of up to 5% across the energy sector. These potential saving equates to approximately \$12 and \$3.5 billion per year in Canada and Ontario, respectively.

**Context:** IoT has spurred on the next generation of innovation, leading to Industry 4.0 with the deployment of smart sensors and data acquisition systems to analyze trends and provide solutions to optimize existing industrial systems. Mohawk College is capable of functioning as a test bed for IIoT testing and validation.

**Industry Challenge:** The Industry Partner is one of the largest vendors of automation equipment in Canada, providing a variety of tested and proven solutions to industry applications. However, simulating various scenarios would be cost-prohibitive; unbiased third party testing and validation of their offered product line will help increase revenues.

**Solution:** An IIoT system was designed and built involving various networking hardware, lab equipment and power monitoring hardware and software. Different products were connected to the test system and compared, determining pros and cons of each product, with the observed differences reported; recommendations were made to improve product designs.

**Impact of the project:** The project proved that a flexible IIoT system can be easily built and deployed in various labs within a college environment to emulate different industrial processes. The Industry Partner now has access to lab facilities and data which can be used to test more advanced applications using their product line, providing them an edge in terms of product reliability and market readiness.

**Mohawk's role:** Mohawk's lab equipment mimics those used in practical industrial environments, offering real-world scenario testing capabilities. This project allows the Industry Partner to further increase the capabilities of the IIoT infrastructure available at the College, resulting in increased faculty and student expertise and knowledge in IIoT systems while continuing to provide testing and validation solutions to industry partners.