



Energy Innovation Centre

The Energy Innovation Centre creates solutions for industry through applied research and education in alternative and renewable energy and power systems.

In the EIC we use our expertise and facilities to improve our understanding and capacity of emerging technologies while also contributing to energy literacy in the communities we serve.

Applied Research services include:

- **Energy analysis**
- **Validation, optimization, and prototyping of new energy technologies**
- **Integration of renewable energy systems studies**
- **Data analytics**
- **Power system simulation**
- **Power and control systems equipment testing**
- **Financial modelling**
- **Workshops and micro credentials**

Established in February 2019, the Energy Innovation Centre (EIC) at Red Deer Polytechnic is a research centre focused on adoption and deployment of alternative and renewable energy systems. As a physical and virtual hub, the EIC supports and validates alternative and renewable energy systems through both simulation and lab testing. Industry, regional businesses, students, and residents can explore emerging clean technologies and their impact on the creation of a sustainable energy plan.

The EIC houses the Alternative Energy Lab (AEL), which was designed to simulate real-world systems associated with alternative and renewable energy production units. Real-time, applied learning opportunities allow researchers and students to build familiarity and confidence with the alternative and renewable energy systems that can support the net zero goals of industry and our community.

We collaborate with regional and provincial utilities, builders, industries, and manufacturers to develop net zero solutions.

This can be done through:

- applied research projects,
- data sharing for best practices, and
- public policy development.

The EIC connects investments in high efficiency and alternative energy systems on campus to applied research, and teaching and learning opportunities for students and the community. We support RDP's Green Campus Master Plan, whose goal is a net zero campus by 2041. The advances made through this work can then be translated to other commercial buildings.



A Living Lab

As part of RDP's larger Green Campus Master Plan, the Alternative Energy Lab (AEL) was purpose-built to provide a physical and virtual platform for exploring alternative and renewable energy systems. Since opening it has become a living laboratory for data management, big data integration, and machine learning. It provides the foundation for EIC's applied research, recognized academic programming using real data and case studies, and work integrated learning.



Sustainable Energy

There has been a steady increase of emerging technologies related to energy use and alternative energy resources. As well, use of artificial intelligence, machine learning, and the Internet of Things to manage complex power, control, and energy systems is increasing on a daily basis. The expertise of EIC personnel and the flexible configuration of the AEL make it possible for us to adapt to new systems and technologies as they emerge, ensuring research, demonstration, and training activities remain current and relevant.



Supporting Future Workforce Needs

Industry has to be aware of and understand these emerging technologies in order to contribute to the energy conversation. The EIC can provide tailored training for industry to use as either pre-employment training or to support upgrading for their current employees. What's more, as industry's future employees RDP students benefit from hands-on experiential education through our applied research projects and by training in our leading-edge facilities.

Data Sharing Alliance

The Data Sharing Alliance is a collaborative group of RDP and industry stakeholders with the purpose of developing net zero practices for modelling and installing solar photovoltaic systems. Weather and power data is used to improve solar PV system performance and economics. This is critical in order to optimize system design under Alberta conditions.

We facilitate partnerships, contribute to development and awareness, provide learning opportunities and spaces, offer applied research services, and collect and distribute performance data to support information sharing and continuous learning.

FOR MORE INFORMATION

Tonya Wolfe, PhD PEng
Director, Centres for Manufacturing
and Energy Innovation

tonya.wolfe@rdpolytech.ca
403.342.3360