

# UNIVERSITY OF ALBERTA – FUTURE ENERGY SYSTEMS NON-ELECTRIC INFRASTRUCTURE

**\$1.3M** in research funding to 2023

**2** active infrastructure projects

**5** Principal Investigators and Co-Investigators

**9** students & post-doctoral fellows

## BRINGING ENERGY INTO OUR LIVES

Whether for hydrocarbons or new fuels derived from renewable resources, effective methods for construction, operation, and transport are essential to harnessing energy sources. Infrastructure for movement and storage of these resources must be developed with an understanding of its social, economic, and environmental impacts including potential unintended consequences, such as creation of locked-in emissions or stranding of assets. A base of knowledge associated with these questions must be developed, and distributed to planners, users, and decision-makers whose choices can shape our energy future for generations to come.

## CURRENT RESEARCH PROJECTS

Decision Support Systems for Improved Construction and Maintenance of Non-Electrical Infrastructure for Energy  
Principal Investigator: Aminah Robinson Fayek

Next Generation of Clean Pipeline Technology for Energy Transport  
Principal Investigator: Arman Hemmati

## RECENT PUBLICATIONS

Decision-making Model for Corrective Maintenance of Offshore Wind Turbine Considering Uncertainties  
Lead Author: Sathishkumar Nachimuthu

An improved singular value decomposition-based method for gear tooth crack detection and severity assessment  
Lead Author: Yuejian Chen

Framework for Risk Identification of Renewable Energy Projects Using Fuzzy Case-Based Reasoning  
Lead Author: Sahand Somi

## RECENT NEWS STORIES

- [Giving pipelines some teeth](#)
- [Using artificial intelligence and fuzzy logic to help plan the future of energy](#)

For the latest information:  
[futureenergysystems.ca/non-electric](http://futureenergysystems.ca/non-electric)

