

Postdoctoral Positions in Energy Transitions

The University of Saskatchewan, Canada, is inviting applications for 3 postdoctoral research positions in energy transitions. This is a unique opportunity to undertake research in an interdisciplinary team-based environment bridging engineering, policy, and the social sciences. The research projects comprise three pillars of an overarching challenge – advancing secure energy solutions in northern & remote regions.

Position 1: Renewable energy-based autonomous self-healing microgrids in remote communities

The project is focused on advanced renewable energy-based microgrid planning and operations in remote communities. The research will focus on developing an intelligent autonomous self-healing system, addressing four interrelated themes: condition monitoring, event detection and characterization; self-healing capability to achieve autonomous service restoration after power outages; advanced control schemes for renewable energy sources and energy storage; multi-energy system modeling and design. The proposed project will discover new knowledge to improve renewable energy-based electrification in remote communities. A software tool for service restoration and self-healing in isolated microgrids will be developed.

Applicants should have a PhD in power systems, control or power electronics, with previous research experience in power systems, renewable energy & microgrids, strong quantitative research skills, and a strong track record of scholarly research publications.

Academic Unit: Electrical & Computer Engineering

Project 2: Governance enablers & constraints for remote energy solutions

This project is comprised of two complementary and parallel assessments to promote innovation in institutional arrangements for energy governance. The first project is focused at the macro-scale and on current and near-term innovations in the North. The research will explore the conditions (e.g., regulatory, ownership, governance, policy) that enable or constrain renewables deployment in northern communities, including comparative assessment of the provisions and opportunities for community ownership of energy systems (generation, distribution, transmission). The second project is technology-specific and futures-oriented, focused on micro and small modular nuclear reactor technology, specifically a comparative analysis of the Canadian and Alaskan governance context for micro and small modular reactor development and deployment to power remote regions.

Applicants should have a PhD in a relevant social sciences discipline, with previous research experience in energy governance, policy, and/or regulation, strong qualitative research skills, and a record of scholarly research publication.

Academic Unit: Geography & Planning

Project 3: Leveraging energy transitions for the service of community well-being

This project has three goals: 1) Analyzing the factors enabling or constraining renewables deployment in the North with a focus on impact evaluation of renewable energy projects in Northern, remote and Indigenous communities, in Yellowknife and Inuvik (Canada), Fairbanks and Galena (Alaska), and Gällivare and Luleå (Sweden). This includes assessing the impacts of adopting renewable energy projects on proxy variables for individual and community wellbeing; 2) Understanding the factors driving community preferences regarding clean energy alternatives, including wind, solar, biomass, and micro and small modular nuclear reactor technologies; 3) Conducting an institutional analysis of economic barriers, other than the production and distribution costs of energy, that slow energy transitions in Northern, remote and Indigenous communities and the social mechanisms that help overcome these barriers.

Applicants should have a PhD in a relevant social sciences discipline, with previous research experience in energy governance, policy, impact evaluation, and/or regulation, and/or economics with strong quantitative research skills, and a record of scholarly research publication.

Academic Unit: School of Environment & Sustainability

The University of Saskatchewan is located in the city of Saskatoon, Saskatchewan, Canada, on Treaty 6 territory and the traditional homeland of the Métis. The University is one of the top research-intensive universities in Canada and is home to world leading research in energy solutions for a sustainable future (<https://renewableenergy.usask.ca>). The University believes equity, diversity, and inclusion strengthen the community and enhance excellence, innovation, and creativity. We are dedicated to recruiting individuals who will enrich our work and learning environments. All qualified candidates are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadian citizens and permanent residents will be given priority.

The successful candidate may start work remotely. Remote starts do require a temporary Social Insurance Number and a work permit by the Government of Canada, unless the applicant is a permanent resident or have permanent status as a Canadian citizen.

How to apply: Submit your statement of interest and CV to jackie.martin@usask.ca as a single PDF document. Include with your application a sample research publication or a weblink with access to your research publications.