Post doctoral research Positions: Multi-scaled, multi-sector, and multi-vector energy systems modelling

The ongoing energy system transition, empowered by technology developments, fueled by shifting investments, and motivated by decarbonization, is one of the 21st century's most urgent tasks. However, current energy system models fail to deliver the holistic perspective required by decision-makers to navigate complex policy choices. Instead, energy system analyses are plagued by rigid model platforms and discretized researchers who focus on specific sectors, spatial-temporal scales, or energy vectors. This research project will pursue the development of an extensible and adaptable multi-scale, multi-sector, and multi-vector M^3 *Modelling Platform* that links distinct but integrated modules to span spatial-temporal scales, the breadth of energy system services, and each energy carrier. To do so, we will employ novel computer science techniques, including multi-objective active learning, advanced visualizations, and parallelized computing. By applying machine learning and applied statistics, this research will transform our approach to energy systems modelling and accelerate decarbonization efforts.

This position will be supervised by Dr. Madeleine McPherson, who leads the *Sustainable Energy Systems Integration & Transitions Group* (sesit.cive.uvic.ca). The successful applicant will also be affiliated with the multi-disciplinary Institute for Integrated Energy Systems (IESVic) at the University of Victoria.

Requirements:
- A PhD in engineering, computer science, or a similar department
- Strong writing, listening and speaking abilities in English
- Working knowledge of Python, or expert knowledge of another object-oriented programming language and the ability to learn Python quickly
- Working knowledge of applied statistics and/or machine learning algorithms & applications
- Familiarity with optimization is desirable
- Familiarity or interest in the energy system space is desirable
- Ability to work effectively within a diverse team

Timeline:
Start date is May or September 2019; please specify your availability in your cover letter.

How to apply:
Interested candidates should email mmcpherson@uvic.ca with the subject M3 Modelling Position, attaching the following items:
- A detailed curriculum vitae
- A one-page cover letter describing your programming expertise, previous research experience, publication record, and fit for the position
- The names and contact information of two references

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