

Welcome

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Energy Modelling Initiative — Initiative de modélisation énergétique

Bringing the Tools to Support Canada's Energy Transition — Outiller le Canada pour réussir la transition

EMI National Forum Montréal **17-18 December 2019**

Canada

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People involved

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Getting here: motivation in the coming decades

Models are the main apparatus for exploring the energy system design space and understanding decision implications

Developing and effectively applying models to inform decision making is more critical than ever

NRCan organized a meeting in February (2019) to discuss modelling platforms for deep decarbonization studies Past/ongoing electrification studies

Canadian work: where we're currently at and what we've done

 Perspectives from Mexico and the USA Current struggles, barriers, challenges Key takeaway - there is a need to support decision-making by policy makers and other stakeholders on the transition to a Clean Electric Future

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The IEA estimates that over two trillion dollars will be spent annually on energy infrastructure





Getting here: context

How? A breadth of structures in different jurisdictions:

United States – National Labs

- Informal relationships between DOE staff and lab researchers built over years

Europe – Energy Modelling Platform

- Annual meeting at European Commission convene policy makers and modellers
- policies

Canada lacks an independent institution or research coalition that can support analysis of the energy sector as it transforms through technological perturbations with the goal of achieving decarbonization targets

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• Formal mandates and funding calls follow from being a Department of Energy lab

• Dialogue: how model results informed policy; recent model work/results; vision for upcoming





Getting here: launching the EMI

NRCan issued a call for proposals and funded the EMI pilot (2019)

- Convene a **dialogue** with Canadian electricity modelling community
- Lay the groundwork for establishing
- - a **network** of system and electrification modellers and - a **platform** to share tools and results
- Began by exploring foundational questions around:
 - What are the needs of decision-makers & stakeholders?
 - What existing capacity do we already have to support these needs?
 - What structure would be most effective in the Canadian context?

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Pilot EMI: 1st year's four objectives



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Long-term EMI: proposal and next steps Vision

Catalyze Canada's energy transition Support fact-based and effective decision-making

Mission - strengthen Canadian modelling expertise and impact by

Convening a network of energy modellers and energy sector stakeholders

Developing a shared platform with models that are maintained over time

Structural elements - to support the mission: **The people**: annual forum, thematic workshops, training **The tools**: shared platform including a model inventory, data sets, reference scenarios

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Long-Term Plan Proposal



National Forum Montréal, December 17 & 18, 2019









National Forum: the big picture

What we've learned:

An understanding of the needs An inventory (continually growing) of people, capacity, tools Ideas, reflections, perspectives from a breadth of stakeholders This knowledge serves as our foundation

Where we are currently:

How to leverage this year's conversations and findings to shape our long-term EMI proposal Our challenge over the next couple of days!

The agenda for the next two days is organized to facilitate this

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National Forum Day 1 – setting the stage

The foundation: the motivation and landscape Workshop organizers will present Regional Workshop outcomes: The needs from stakeholders' perspectives The role of modelling in each regional context Where the long-term EMI can create value Key requirements for success

The goal: our draft proposal for the long-term EMI Presented upfront to provide food for thought over the subsequent sessions We are hoping you will add your valuable feedback!

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National Forum Day 1 – the users

Building on the regional motivation and landscape; knowing were are going (long term EMI)

EMI's value

Panel 1: users' perspective - industry, utilities, policymakers (provincial and federal)

- **EMI's fit** with other related initiatives Choices
- **EMI's place** within the existing energy modelling ecosystem
- **EMI long-term proposal:** your turn to reflect on the proposal Breakout session 1: high-level brainstorm Are the vision, mission, and strategy appropriate? What is missing?

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Presentations: Canadian Centre for Energy Information and Canadian Institute for Climate

Panel 2: federal lab researchers and regulators, university-based academics, consultants



National Forum Day 2 – the model(lers)

Modelling capacity – presentations

from funded proposals From microgrid to national scale Supply side & demand side focus

Modellers' perspectives Regional workshop organizers present:

Diesel-based power systems in remote

Needs from the shared platform

Modellers' benefits, opportunities,

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challenges

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National Forum Day 2 – moving forward

EMI long-term proposal session 2: reflect on and refine the proposal

Breakout session 2: digging into the details -What are the key elements that need to be included... on the initiative structure side?

- on the platform (software, data) side?
- What will your interaction with the EMI look like? Are the elements needed to facilitate this interaction included?

If not, what is missing?

-Are there modelling activities to consider that are outside the EMI mandate? Broaden the discussion beyond the EMI mandate

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Thank you!

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