



## Energy Modeling Initiative Western Workshop *Modeling, Policy and the Energy Transition*

Friday, September 27, 2019

University of Victoria

Engineering and Computer Science (ECS) Bldg, Rm 660

### Case Study: *Identifying the Needs*

*The economies of Western Canada are responsible for 60% of national GHG emissions and are strongly tied to the movement of goods, materials, and energy. Meeting decarbonization objectives while stimulating clean growth requires rapid transformation, innovation, and coordination.*

#### Roundtable 1

Electrification spans a breadth of decision-making jurisdictions (municipal, provincial, federal, international) and systems (gas, electricity, water). Individuals operating devices behind the meter, provincial planners developing load forecasts and infrastructure expansions, and federal negotiators making climate commitments all have different needs and information requirements. Representing these requirements in energy system modelling calls for a range of models with different frameworks, spatial-temporal scales, objectives, and so on.

- How can modelling be applied to explore pathways that reach our decarbonization objectives?
  - The morning's modelling overview panel reviewed several model categories and their appropriateness in addressing different issues. Which of the models discussed in the panel session are appropriate and useful in the context of the case study topic?
  - Hypothetically, if a project applied the models discussed by the panel to address the case study topic, where would there still be gaps in the analysis?
  - Outside of the quality of the analysis, what other considerations are important? For example, is model transparency (i.e. open-source data and code) important for increasing public trust in good governance and appropriate policy?
  - What additional capabilities would have to be developed/applied to address the gaps?

#### Roundtable 2

There is a natural fit between modellers and policy-makers: modellers often develop insights that could be useful to policy-makers; policy-makers often seek evidence to support decisions and policy. However, despite this natural fit, we are here today in part because we don't always witness or partake in projects where this natural fit manifests.

- How can we increase synergies between modelling and policy making?
  - Where can and should modellers be engaging in the policy-making process?
  - What do modellers need to know about a policy maker's job? What do policy makers need to know about a modeller's job?
  - Where have modellers, or projects that leverage modelling gone wrong such that modelling work hasn't been useful in the policy-making process?
  - What examples come to mind where this synergy has been particularly successful? Or unsuccessful? What made these examples successful or unsuccessful?





- How can we ensure that the mandate and scope of work between different groups (academic modellers, government contractors, policy makers) align?

### Roundtable 3

Ultimately, we – the policy and modelling community – need to move from a paradigm where policy recommendations appear in the concluding remarks of our academic papers or reports to a more effective process.

- What resources, frameworks, tools, institutions, support, etc. would be helpful for creating an effective national modeling platform to serve policy-making?
  - In pursuit of these objectives, what realities, such as confidence and timeliness, need to be considered in a modeling-for-policy process? Do modellers need more training in qualitative methods used in the social sciences?
  - Are there other jurisdictions that successfully facilitate these relationships and synergies, for example through an institutional framework (such as the national lab systems)? Is there anything that we can learn from other jurisdictions that successfully navigate this?



## Western Case Study

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## Animated Discussion

	Main question	Secondary questions (to help relaunched discussion)	Expected discussion topics (non exhaustive...)
30 min	<b>(A)</b> How can modelling be applied to demonstrate a pathway to reach the stated <b>objectives</b> ?	<ul style="list-style-type: none"> <li>• What existing modelling elements can be applied?</li> <li>• What other factors affect potential pathways and need to be considered in modelling?</li> </ul>	<ul style="list-style-type: none"> <li>• Models</li> <li>• Application sectors</li> <li>• Data</li> <li>• Inputs/Outputs</li> <li>• Time scale &amp; granularity</li> </ul>
30 min	<b>(B)</b> In pursuit of those <b>objectives</b> , what impacts needs to be considered in policy development?	<ul style="list-style-type: none"> <li>• What are the possible collateral outcomes (positive or negative)?</li> <li>• Other effects and consequences to be considered?</li> <li>• Should those be translated into <b>additional objectives</b></li> </ul>	<ul style="list-style-type: none"> <li>• Affected industries</li> <li>• Economic development</li> <li>• Job creation</li> <li>• Social equity</li> <li>• Infrastructure</li> <li>• Innovation</li> <li>• Regulation</li> <li>• Electricity prices and production costs</li> <li>• Capacity distributions and system operation</li> <li>• Storage: demand, distribution, incentives</li> <li>• Technological penetration</li> <li>• Spatial developments, land use</li> <li>• Building and vehicle stocks</li> </ul>
30 min	<b>(C)</b> How can <b>multiple objectives</b> be addressed simultaneously? How can they be integrated with a higher, systemic objective?	<ul style="list-style-type: none"> <li>• What is the broader systemic goal pursued?</li> <li>• Which ones are worth pursuing?</li> <li>• Any ones missing/worth adding?</li> </ul>	<ul style="list-style-type: none"> <li>• Elements to consider in policy design</li> <li>• What is currently not considered</li> <li>• Possible synergies</li> </ul>

		<ul style="list-style-type: none"> <li>• How are objectives interrelated?</li> <li>• Benefits/challenges at addressing them in a coordinated fashion?</li> </ul>	
30 min	<b>(D)</b> What are the prospects of new modelling approaches for political decision making?	<ul style="list-style-type: none"> <li>• Sectors not covered that need attention?</li> <li>• Policy aspects not covered/ignored by modelling?</li> <li>• Any new modelling approaches/methodology that could help?</li> </ul>	<ul style="list-style-type: none"> <li>• Gaps in modelling</li> <li>• Gaps in policy design process</li> <li>• Modelling contribution to policy; how to improve it, where it is underestimated</li> </ul>

Notes on question order:

- For half of the participants: A B C D (starting from the modellers standpoint)
- For the other half: B A C D (starting from the policy maker standpoint)
- Alternative: all participants could start with C to get a shared understanding of the case

Notes on the discussion conduct:

- Attendees are divided into groups, each composed of a diversity of stakeholders (modellers, policy makers, etc.)
- Each group has a designated moderator (picked among the participants) and one note taker (hired)

## Plenary session

	Main question	Secondary questions (to help relaunched discussion)	Expected discussion topics (non exhaustive...)
60 min	What aspects are beyond the scope of current modelling capacities?	<ul style="list-style-type: none"> <li>• What is currently available to policy makers?</li> <li>• How to make the most of what is available?</li> <li>• What is the path to improve what is available?</li> </ul>	<ul style="list-style-type: none"> <li>• Key features of a permanent modelling initiatives</li> <li>• Core components to put in place</li> <li>• Where to start</li> </ul>