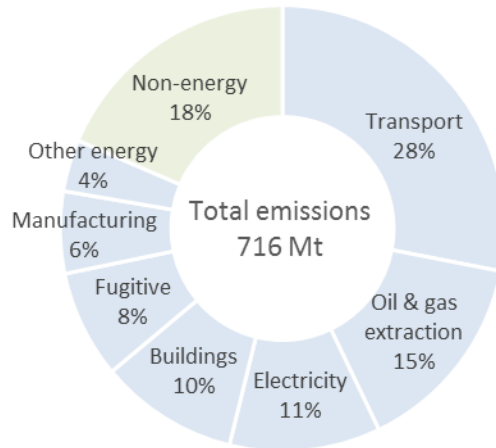


Dalhousie University
ECED 6190: Energy Systems Analysis
Provincial Energy-Systems Project
Fall 2019

1 Introduction

In 2017, over 80% of Canada's anthropogenic greenhouse-gas emissions were from the extraction, conversion, and consumption of energy.



Energy (blue) and non-energy (green) emissions for Canada
(Mt - megatonnes)

Limiting global temperatures to 1.5°C this century, as called for last year by the Intergovernmental Panel on Climate Change (IPCC), will require net-global emissions to reach zero by no later than 2055. Since Canada is a signatory to the Paris climate agreement, the federal, provincial, and territorial governments will need to develop policies that not only reduce energy-related emissions rapidly but are both politically and economically palatable by taking energy security into consideration.

However, before such policies can be developed, it is necessary to conduct an analysis on the state of the existing energy system, the energy policies, and more so now than in the past, climate-related policies. This information can be obtained from, for example, government documents, on-site analysis, third-party analysis, or previous experience. In all cases, access to the relevant data is paramount, keeping in mind the limitations of the data.

This project is to be an analysis of the risks to the energy security of any Canadian province in light of the ongoing climate crisis. The analysis should have a target date of 2030 and take into account issues such as, but not limited to, economics, global geopolitics, and demographics.

2 Focus

In addition to examining the province in terms of its geography, population, and economy, the analysis should focus on the provincial:

- Energy system:
 - What is the recent history of the province's energy system?
 - What are the energy sources and services?
 - What is the present state of the energy system?
- Policies:
 - Are there policies in place to develop the province's energy system?
 - What climate-related policies are there?
 - Is energy security taken into account?
- Risks to the energy system:
 - What are the province's internal and external risks to the energy security of its energy system?
 - Is the province resilient to these risks?
 - Are threats, such as extreme weather events and cyber-attacks being addressed?
 - What is the country doing to adapt its energy system to existing and new risks?

3 Data sources

The analysis should be based on data sources, preferably trusted, including:

- Statistics Canada, Environmental and Climate Change Canada (ECCC), NRCan
- National Energy Board, Provincial energy boards
- IPCC, UNFCCC, IAEA, IEA, EIA, World Bank
- Globe and Mail, National Post, CBC, Policy Options, The Conversation, The Tyee, provincial news organizations.
- Academic journals

4 Choice of province

Any Canadian province can be used in your analysis. Please let me know your choice. Since there are more students than provinces, there is a limit of two students to any province. Provinces will be allocated in the order requested.

Note that although Canada is a single country, it is also a federation consisting of a federal government and ten separate provincial governments. Moreover, there are radically different energy systems and policies at the provincial level. You should take these factors into account if you select province.

5 Requirements

There are two requirements:

1. A report on your analysis of your chosen province. The report should be between 3,000 and 6,000 words in length and include graphs, tables, and bibliography. Longer reports will be accepted. Please convert the report to PDF before submitting it electronically.

2. A 20-minute presentation based on the key findings of your analysis at the end of term.

6 Marking

The report will be marked on the thoroughness and clarity of the analysis.

7 Dates

Available: 25 September 2019

Presentations: 27 November and 2 and 4 December 2019; dates to be confirmed.

Report due: 8 December 2019.