

Opportunities for Canada to achieve greenhouse gas emissions reductions

The world now requires action to combat climate change. Canada is one of many nations who have committed to reducing its contribution to this global crisis.

As of 2021 Canada has not yet been able to get onto a clear path to reducing its greenhouse gas emissions. Commitments have been made over the past decades to reductions of its contribution to the production and consumption of greenhouse gases. None of these have been achieved.

In this document, CACOR analysts have sought to provide clarity regarding some of the steps which are most likely to lead to such reductions. The analysis undertaken used a sophisticated model to analyse whether and how Canada could most effectively define pathways which can result in substantial greenhouse gas reduction. The model additionally addressed those sectors where a feasible and effective reduction would be most possible.

There is now a growing global consensus that Canada and other major emitters of greenhouse gases must quickly reduce their level of emissions. Failure to do so results in climate change being far more severe than necessary, to the extent that many of the basic support systems for civilization will be placed at risk. Many reputable international organizations [IPCC, UN agencies such as WHO and UNEP, Club of Rome] have concluded that there is no longer a margin for delay before irreparable damage to the key services which the planet provides to sustain humanity.

The approach taken by the CACOR analysts was based on a detailed stock and flow model to quantify Canada's emissions both nationally and as occurring in each province. The graphs in the analytical document show the greenhouse gas emissions of the key sectors of the economy as they change over time.

Provincial scenarios were generated to permit analysis of what aggressive emission reduction actions could accomplish from 2022 to 2060. The best-case scenarios generated assumed that efforts would be taken on all sectors simultaneously and focused on those sectors and areas where the greatest reductions could be generated. Achievement of these reduction targets will require collaborative efforts from all jurisdictions and sectors.

Key actions require rapid replacement of fossil fuel fired electrical generation as well as electrification of heating cooling and transportation which could provide significant emission reductions. At the same time rapid phasing out of fossil fuel use and

production shall curtail the significant fugitive emissions inadvertently released during drilling, transportation, and processing.

It should be noted that the same actions will not equally be required of each province based on the wide variation of actual GHG releases. This means that British Columbia, Alberta, Saskatchewan, Manitoba, and Newfoundland and Labrador will have to curtail the production of fossil fuels for burning. Use and consumption of petrochemical products, directly or indirectly, is included at the provincial level.

The entire country will need to convert its electricity generation to technologies that do not produce significant amounts of greenhouse gas. Transportation, building heating and cooling, agriculture and industry must electrify instead of using fossil fuels. Achievement of this will not occur evenly and it will be essential to consider equity as some sectors and regions must phase out at different rates to meet the overall international commitments made by Canada.

One tactic may mean the rapid reduction of fossil fuel production and consumption in those areas which have the greatest significance, such as oil sands and transportation. At the same time a focus on those causing the most contamination or greatest short-term damage may need to be emphasized first.

This report is a call to action, providing clear analysis showing which areas are most likely to generate fossil fuel reductions of a magnitude which can support Canada's GHG reduction goals. Our actions can be used to support and reinforce those actions initiated by many in the international community. The evidence is quite clear; if we delay or fail to mount an immediate comprehensive response, we shall fail our stated commitment to humanity.