TRANSrisk

TRANSITION PATHWAYS AND RISK ANALYSIS FOR CLIMATE CHANGE POLICIES

The Canadian Case Study

Background

Canada: 1.6% of Global GHG Emissions
Among the Top 10 emitters

Alberta: 37.4% of National Emissions in 2014

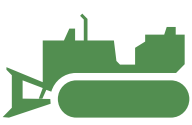
Current production: 2.5 million barrels per day (bl/d) or 70 Mt of GHG emissions

Paris Agreement: 30% reduction of GHG emissions compared to 2005 levels by 2030

Aim: Exploring Low Carbon Energy Pathways in Alberta

I) Capping Oil Sands GHG emissions and methane reduction

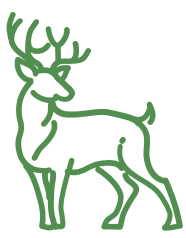
100 Mts / Year CO_2 emissions limit for Oil Sands sector



Carbon Tax
30 CAD/tCO_2
2022 => 50 CAD/tCO_2
+energy efficiency,
+renewables,
+carbon capture and storage,
-methane flaring

II) Paced Oil Sands development and land use protection

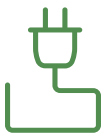
Increase protected natural areas and tradition land use rights from 10% to 40%



Implementation of rigorous industrial best practices for companies operating in the area

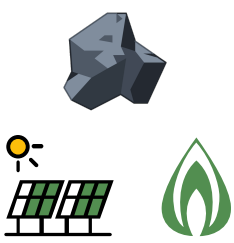
III) Supporting a clean energy mix

Carbon Tax
> 30 CAD / t CO_2

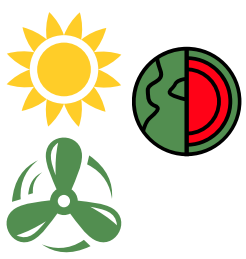


30% Renewables in the Electricity sector by 2030

Limited development of oil sands



Substitution of coal generation by NG (67%) & RES (33%)



Increase of Solar, Wind, & Geothermal Energy
+ 5GW RES by 2030
+ 400,000 Geothermal Wells

Method: Assess Risk and Uncertainties in Pathways

Use of
GCAM-BC3 Integrated Assessment Model,
Calliope Energy Systems Model, and
E3ME Energy, Economy and Environmental Model

Stakeholder Consultation to capture the perspective of communities involved regarding the socio-economic impact of pathways

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