Canada’s progress to its NDC: A policy package scalable to deep decarbonization

Decarbonization
Pathways Canada

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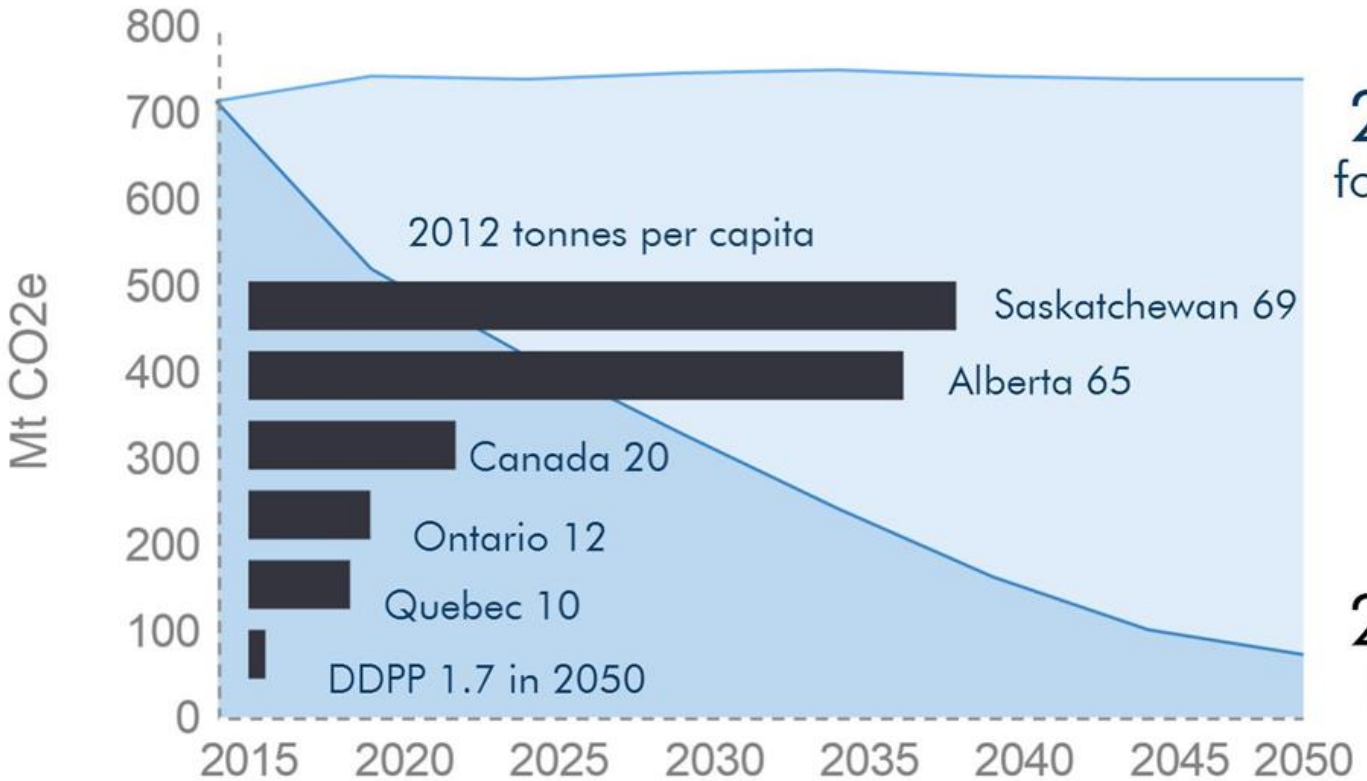
Canada's 2050 2dC Budget

Decarbonization pathway to achieve global per capita GHGs of 1.7 by 2050 across all countries



2050 forecast

Oil price evolves to $80 barrel

GHGs stabalize at 736 Mt

Per Capita GHGs 15 tonnes

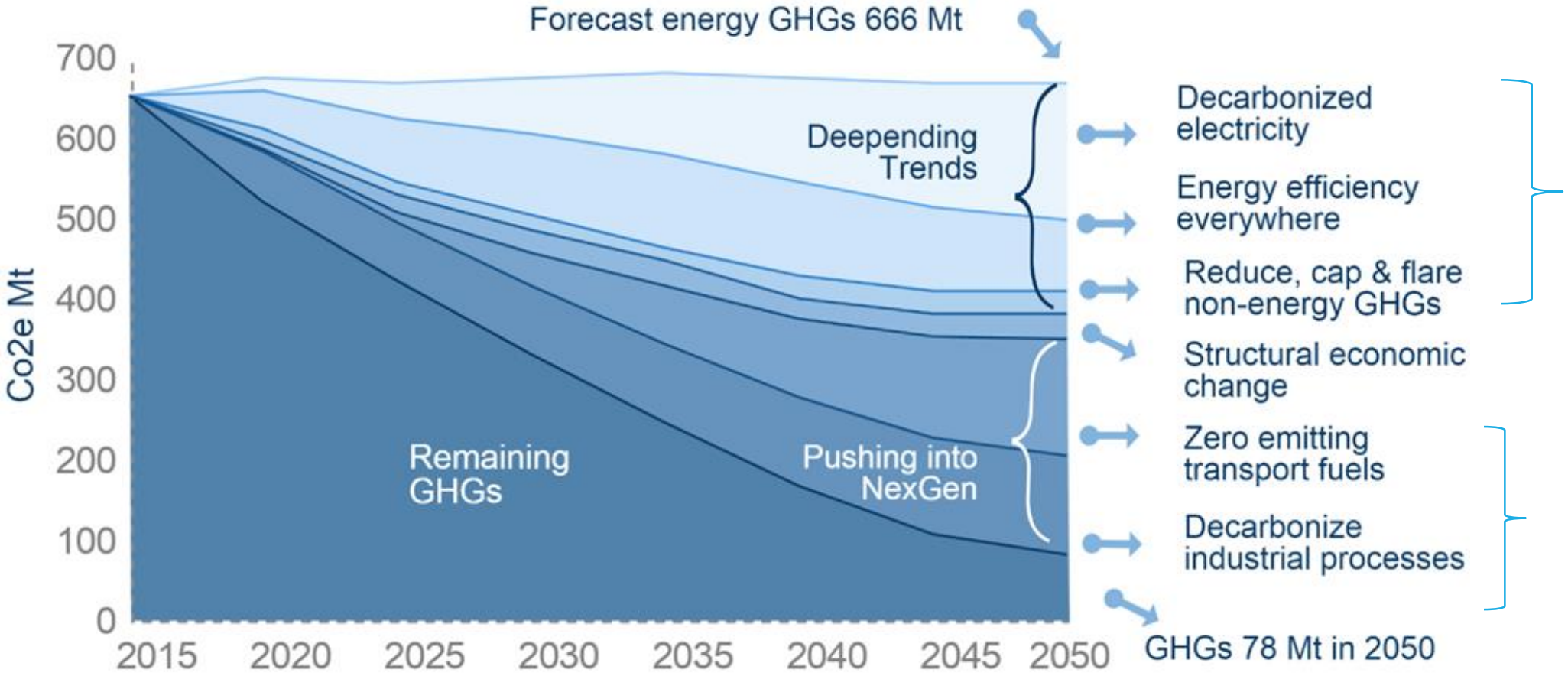
2050 DDPP

Canda's 2dC budget 75 Mt

GHGs -88% below 2050

Per Capita GHGs 1.7 tonnes

Decarbonization Drivers | Resilient Canadian Decarbonization Pathways



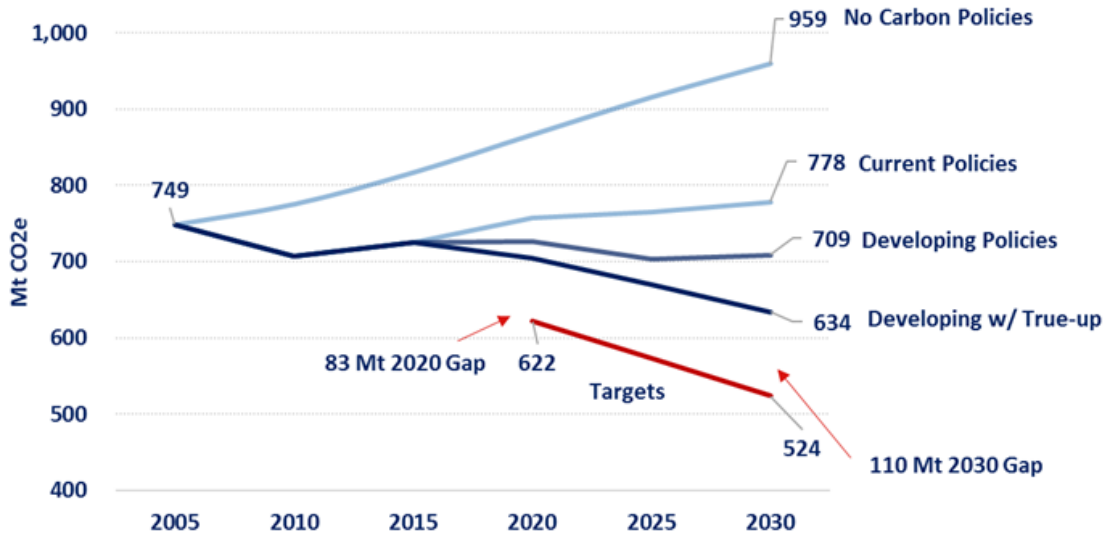
Resilient:
Portfolio of technologies, market share winners unclear

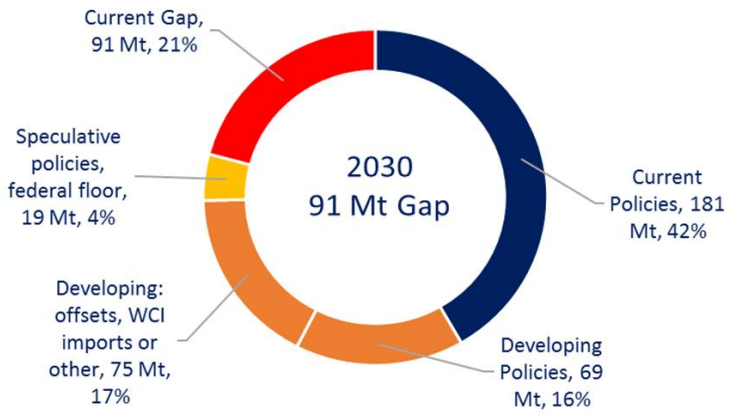
Unclear:
Consensus that decarbonization is more challenging

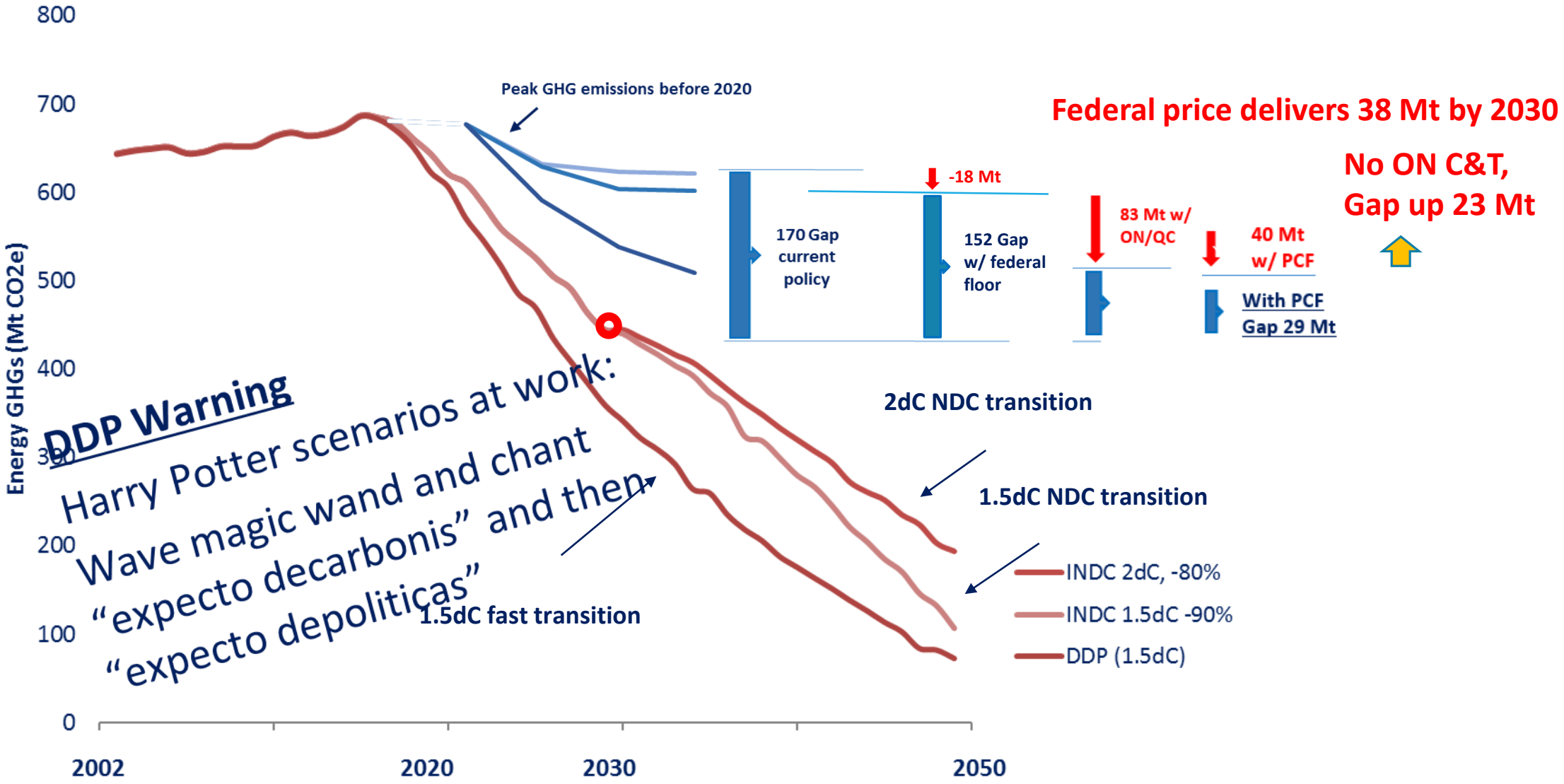
Autonomous GHG Policy: Provinces and Federal Government

Provinces

- BC Ctax, LCFS
- AB SGER > Climate Leadership Plan
  - $30 Ctax/OBA; Methane, Oil sands 100 Mt cap
- SK CCUS, SK 50% renewable power
- ON coal ELEC ban, Western Climate Initiative
- QC Western Climate Initiative with California, EV
- NS renewable electricity policy
- Methane from waste regs in all provinces
- **Federal** coal generation regs and café vehicle standards



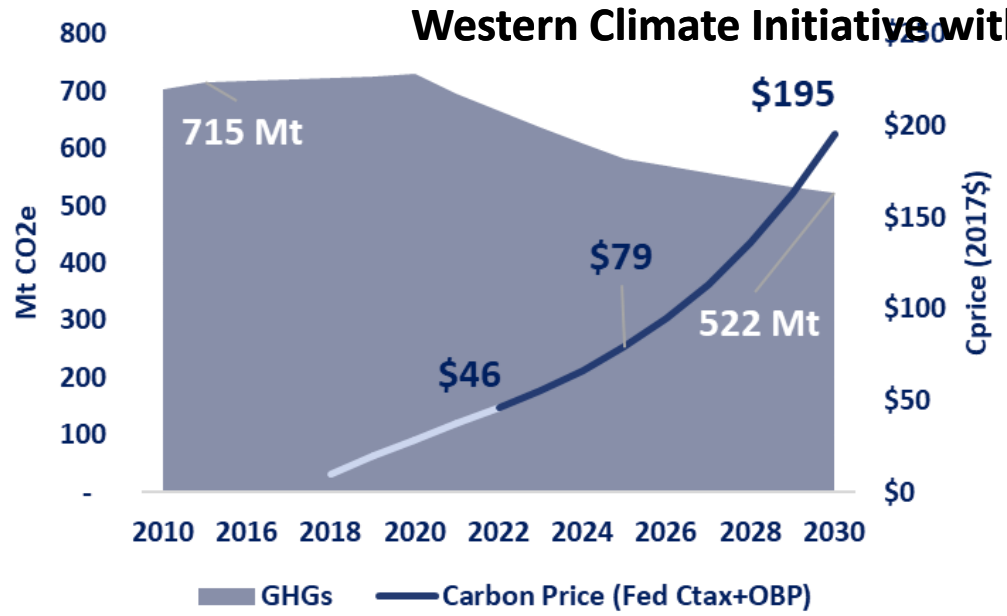



Energy GHGs (Mt CO2e)
800
700
600
500
400
300
200
100
0
2002
2020
2030
2050
Peak GHG emissions before 2020
-18 Mt
170 Gap current policy
152 Gap w/ federal floor
83 Mt w/ ON/QC
40 Mt w/ PCF
With PCF Gap 29 Mt
Federal price delivers 38 Mt by 2030
No ON C&T, Gap up 23 Mt
DDP Warning
Harry Potter scenarios at work:
Wave magic wand and chant
"expecto decarbonis" and then
"expecto depoliticas"
1.5dC fast transition
2dC NDC transition
1.5dC NDC transition
INDC 2dC, -80%
INDC 1.5dC -90%
DDP (1.5dC)

GHG Decline Rates for Decarbonization

	Annual GHG Decline Rate (5-years)			2030 GHGs Mt	2030 NDC Gap
	2016/20	2021/25	2026/30		
Current policy	-2.19%	-1.46%	-0.87%	592	-68
NDC compliant	-1.20%	-2.26%	-3.53%	522	0
IPCC SR 15 (380 Mt)	-2.48%	-4.36%	-5.27%	400	124

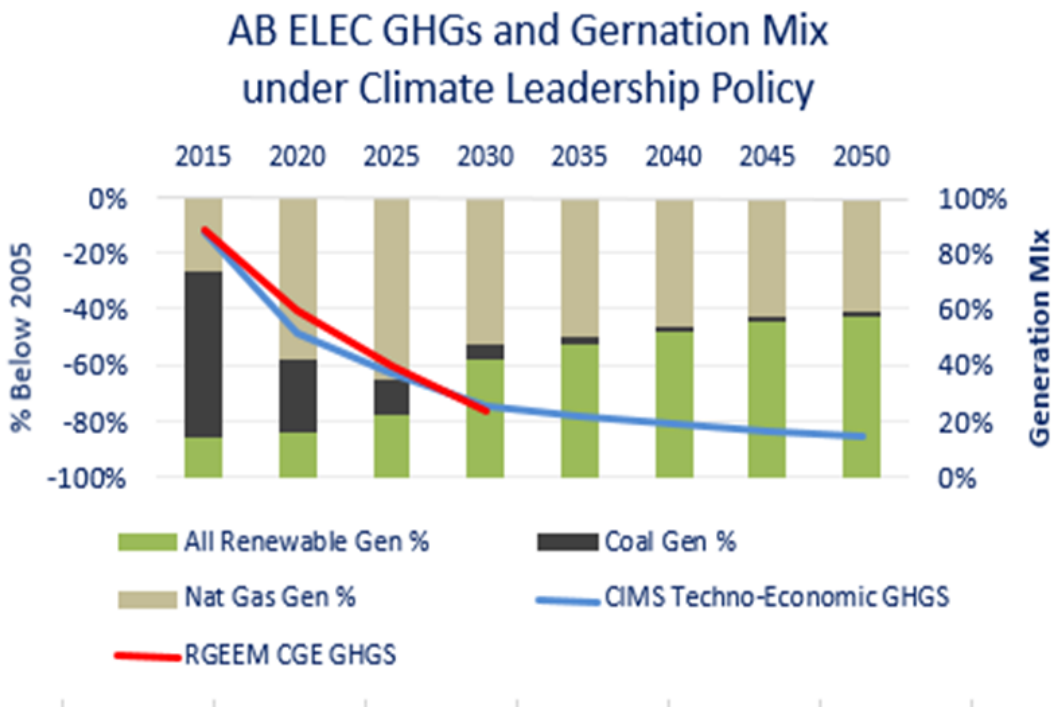
Scale-up Current Policy to NDC (no ITMOs)



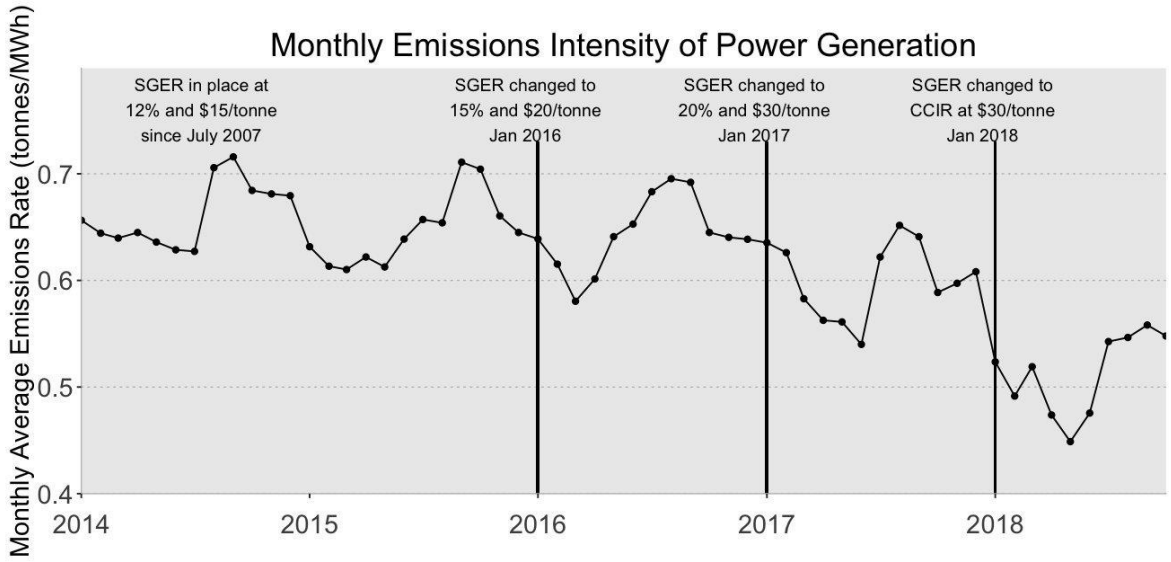
	AAGR %	
	2018-22	2022-30
GHGs	-2.1%	-3.0%
CPrice	47%	20%

Industry Carbon Pricing Opportunities, Alberta Electricity

Modelled GHGs

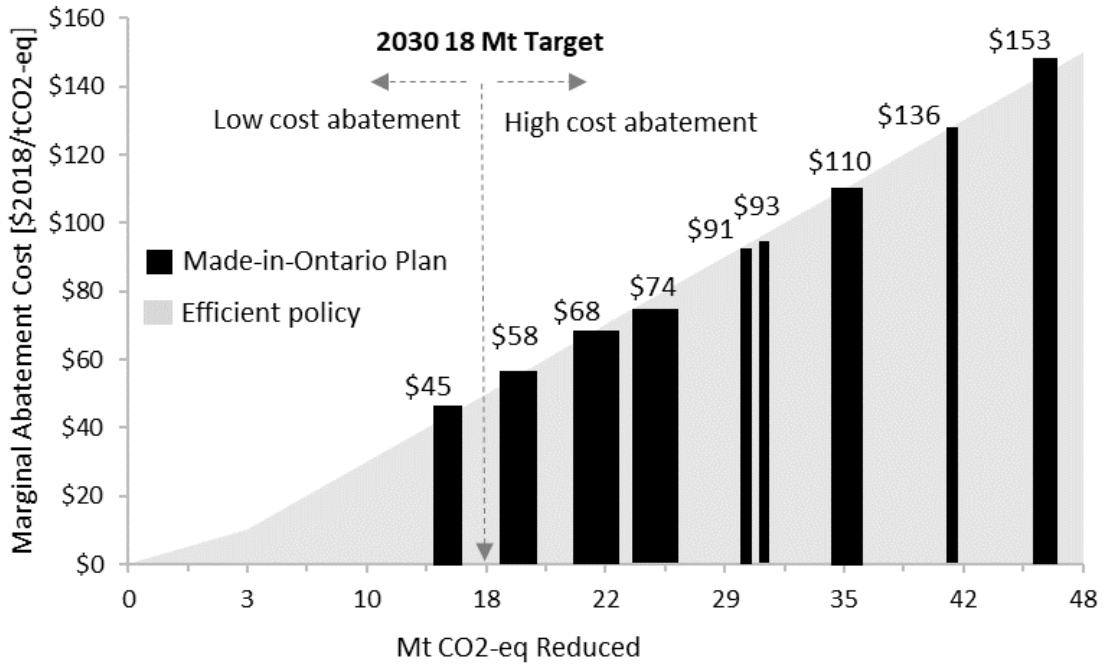


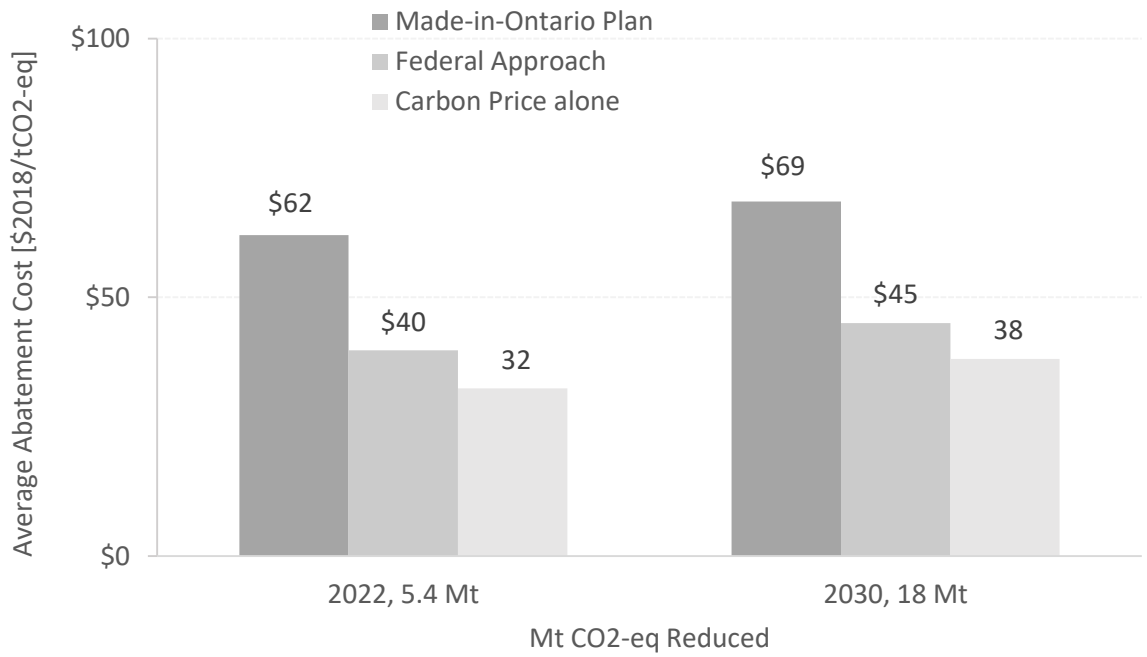
Historical GHG Intensity Electricity



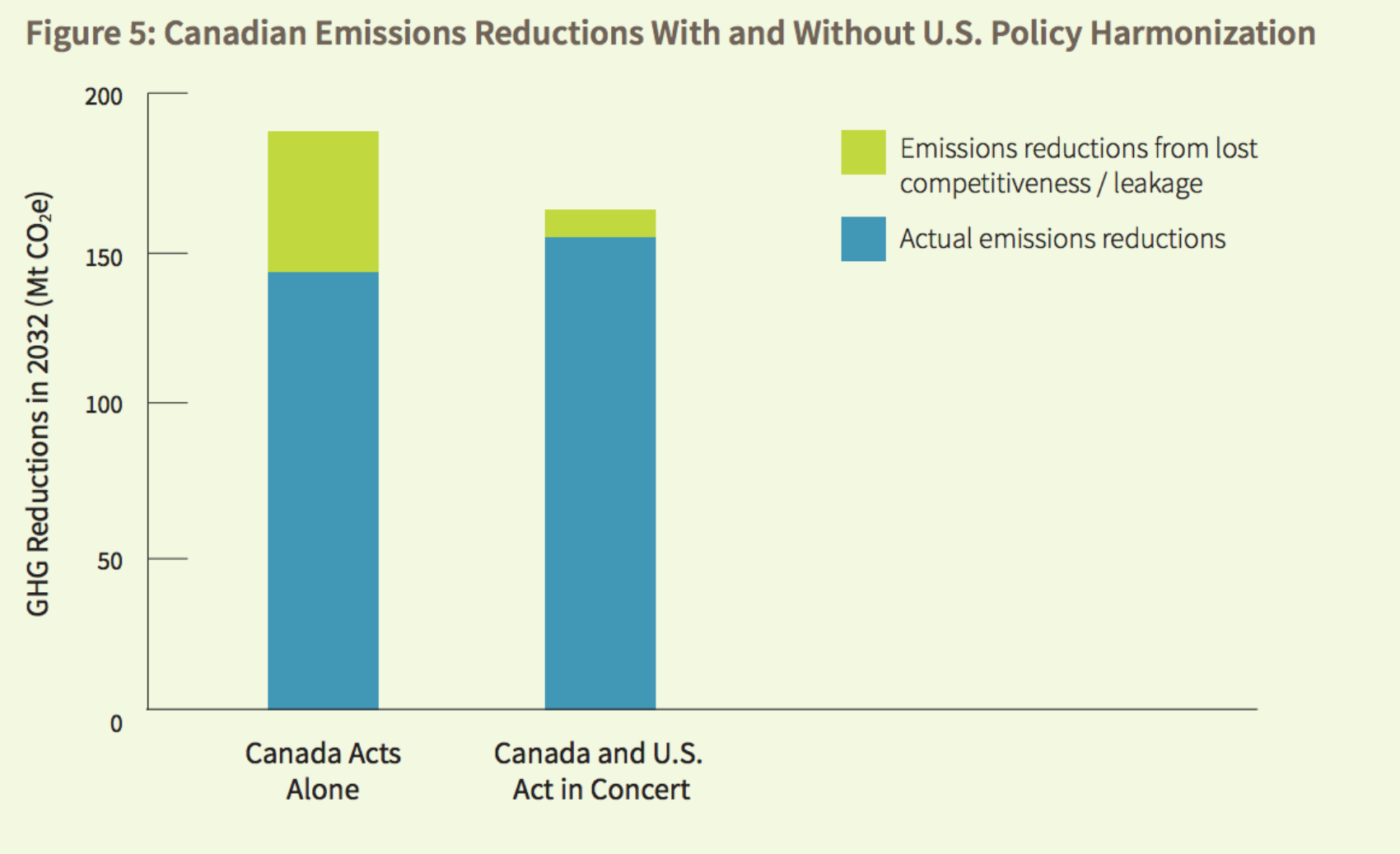
Source: AESO data accessed via NRGStream. Calculations and graph by Andrew Leach

Carbon Taxes and Politicians Avoiding Taxes with Bad Policy





Competitiveness and the United States



A pan-Canadian Policy Package Scalable to Increased Climate Ambition

- **Efficient and broad-based carbon pricing** our national baseline.
  - Like a fee and dividend with equal shares to households.
  - Performance Standard with carbon price for large EITE emitters in all jurisdictions.
- Governments can **tighten existing performance-based regulations**.
- Somewhat durable, focused on **competitiveness (OBPS) and fairness (carbon rebates)**.

Decarbonization costs rise fast even with efficient policy.

- The **federal carbon price increases efficiency**,
  - Need to better align carbon cost with pan-Canadian trading for large emitters.
- **A need for global tradeable units to backstop ambition,** keep costs down

Continued focus on aligning costs and **cohesive climate governance.**

- **Implement, take stock, repeat**