



Designing carbon pricing to achieve economic prosperity and greenhouse gas reductions in New Brunswick

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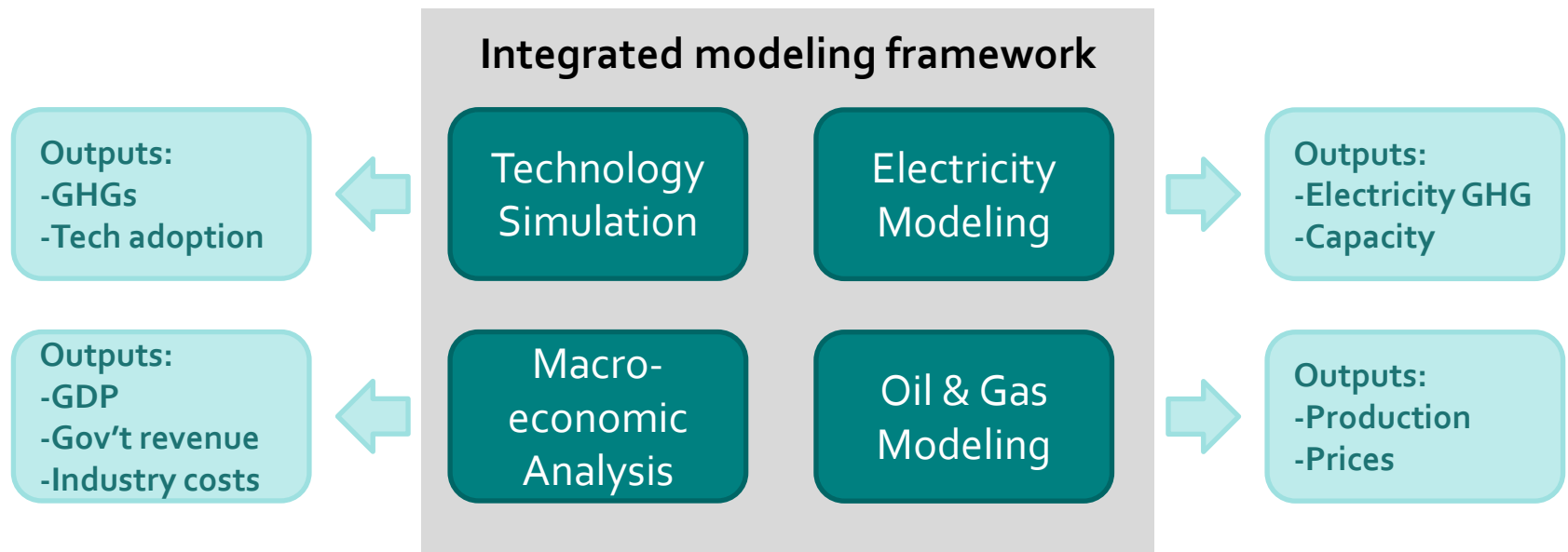
July 14, 2016

Overview of presentation

1. Navius' area of expertise
2. The context for reducing greenhouse gas (GHG) emissions in New Brunswick
3. Carbon pricing design and objectives
 - a. Common objectives
 - b. Checklist for implementing carbon pricing
 - c. Achieving objectives through policy design: A survey of carbon pricing in Canada
4. The impacts of carbon pricing
5. Take-away messages

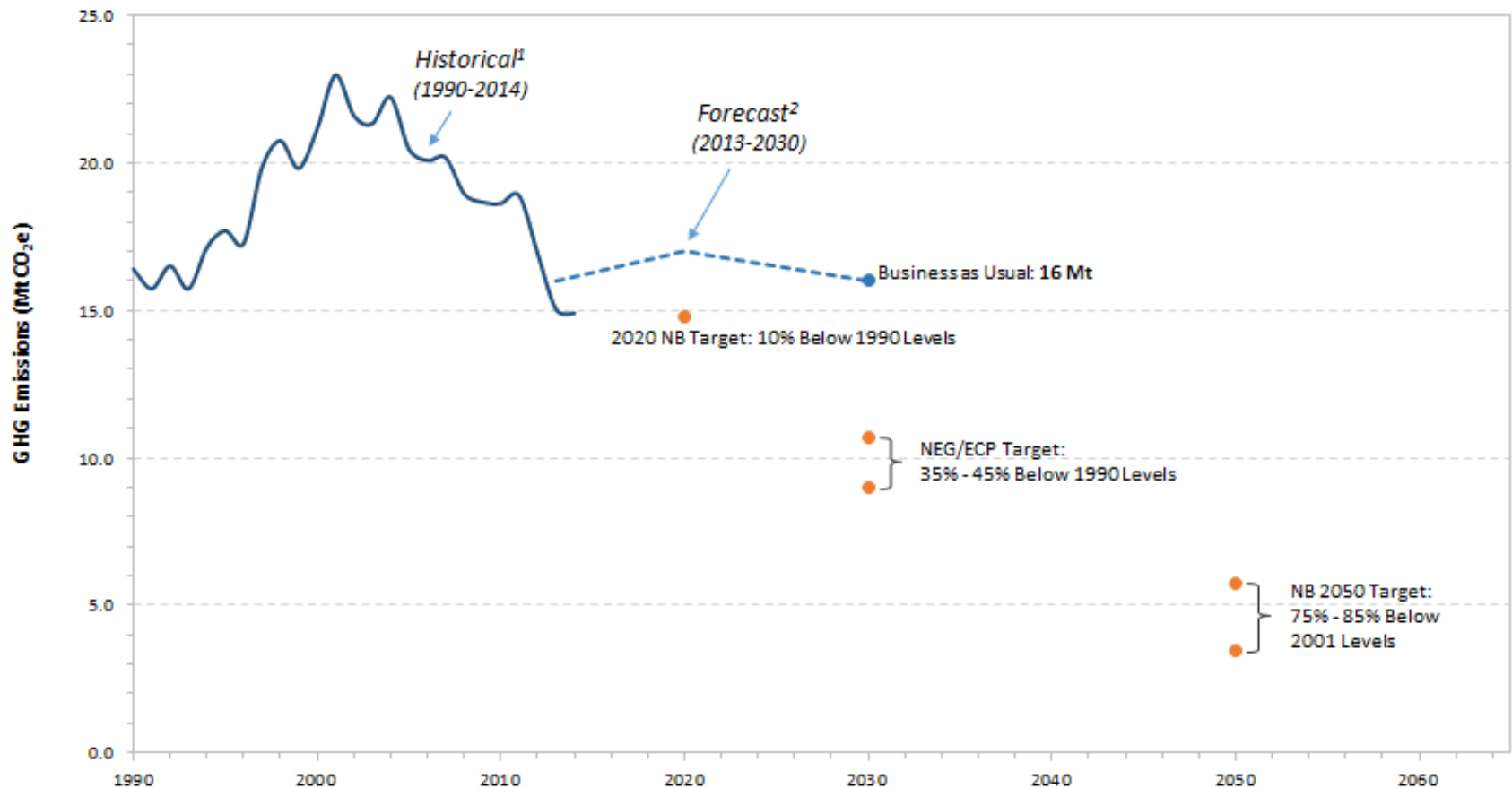
1. Navius' area of expertise

- Navius employs quantitative modeling to assess the **environmental and economic impacts of climate policy**.
- We have worked with **most provincial governments** (including New Brunswick), as well as the federal government, industry & NGOs.



2. The context for reducing NB's emissions

- New policies are necessary for achieving the province's GHG targets.



¹ Environment and Climate Change Canada, 2016. National Inventory Report 1990-2014: Greenhouse Gas Sources and Sinks in Canada

² Environment and Climate Change Canada, 2016. Canada's Second Biennial Report on Climate Change. Note: Forecast data is for the period 2013 to 2030. Forecast data will be updated by Environment and Climate Change Canada in October 2016 to reference 2014 historical data.

3.a. Policy design and objectives

- Carbon pricing can be designed to achieve different objectives

Examples of possible objectives	Considerations for New Brunswick
1. Reduce GHG emissions	Provincial targets: <ul style="list-style-type: none">•35%-45% below 1990 levels by 2030•75%-85% below 2001 levels by 2050
2. Maximize economic activity	New Brunswick's rate of GDP growth is below the national average.
3. Mitigate impacts on low-income households	Income per capita in New Brunswick is also below the national average.
4. Maintain competitiveness for key industries	Petroleum refining is the sector most susceptible to competitiveness pressure in New Brunswick.

3.b. Checklist for implementing carbon pricing

Key policy design decisions	Considerations for New Brunswick
Carbon pricing or regulatory approach?	Carbon pricing is economically efficient. The cost of regulations is less clear.
If carbon pricing, carbon tax or cap-and-trade?	Both can be designed to achieve similar outcomes.
What price or cap to place on emissions?	Appropriate stringency can be determined based on provincial targets.
What to do with revenue (and in the case of cap-and-trade, how to allocate allowances)?	Revenue recycling and allowance allocation are two of the best opportunities for NB to pursue its objectives.

3.c. Achieving objectives through policy design

- Examples of carbon pricing in Canada

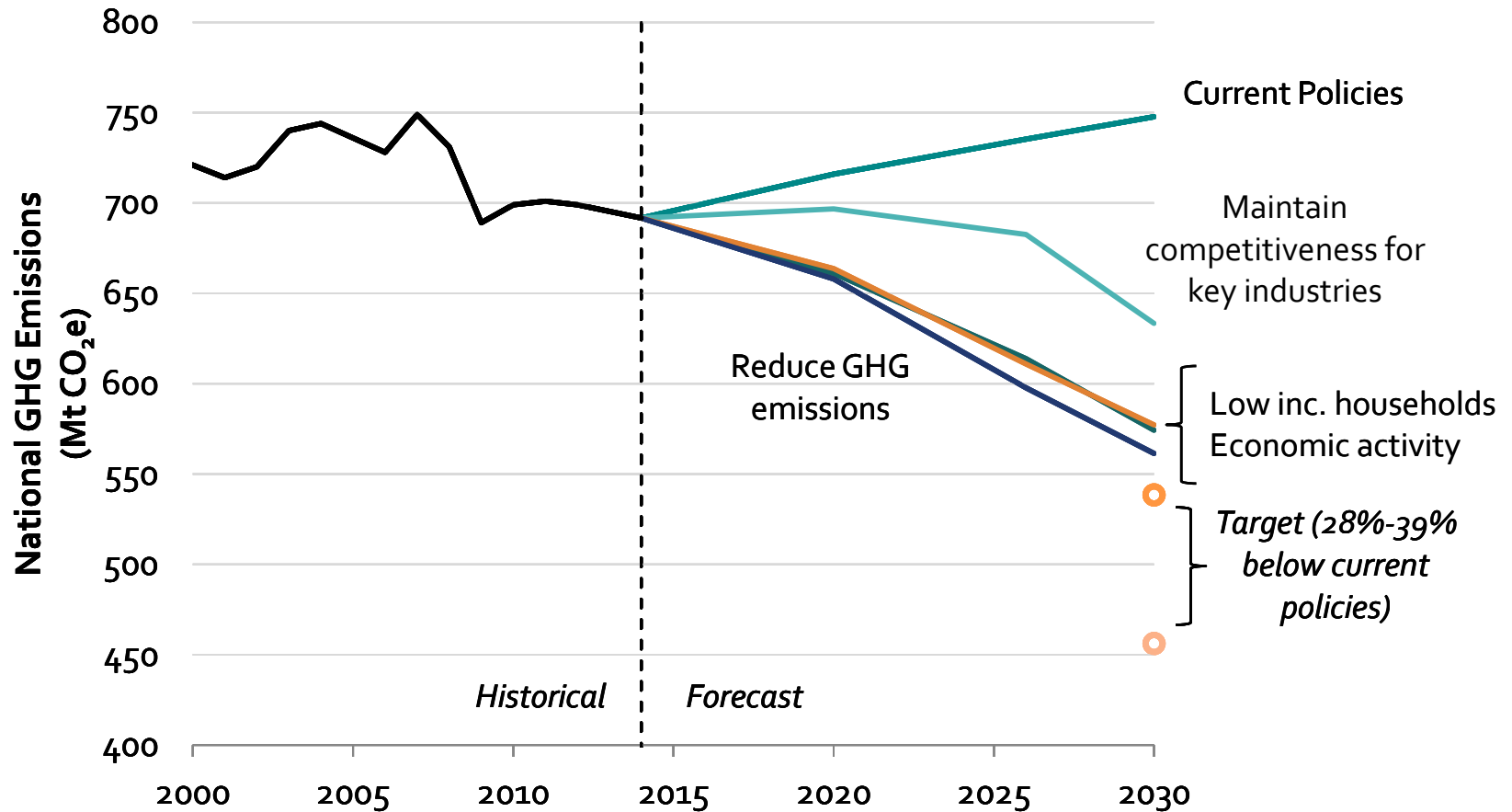
Objective	BC	Ontario & Québec	Alberta
	<i>Carbon tax applied to all combustion emissions</i>	<i>Cap-and-trade applied to industry & energy distributors</i>	<i>Specified Gas Emitters Regulation requires firms to reduce emissions intensity</i>
1. Reduce GHG emissions	Price signal only (\$30/t)	Price signal (varies) Carbon revenue is invested in technology	Price signal (\$20/t) Carbon revenue is invested in technology
2. Maximize economic activity	Carbon revenue is used to reduce income taxes	N/A	N/A

3.c. Achieving objectives through policy design

- Examples of carbon pricing in Canada

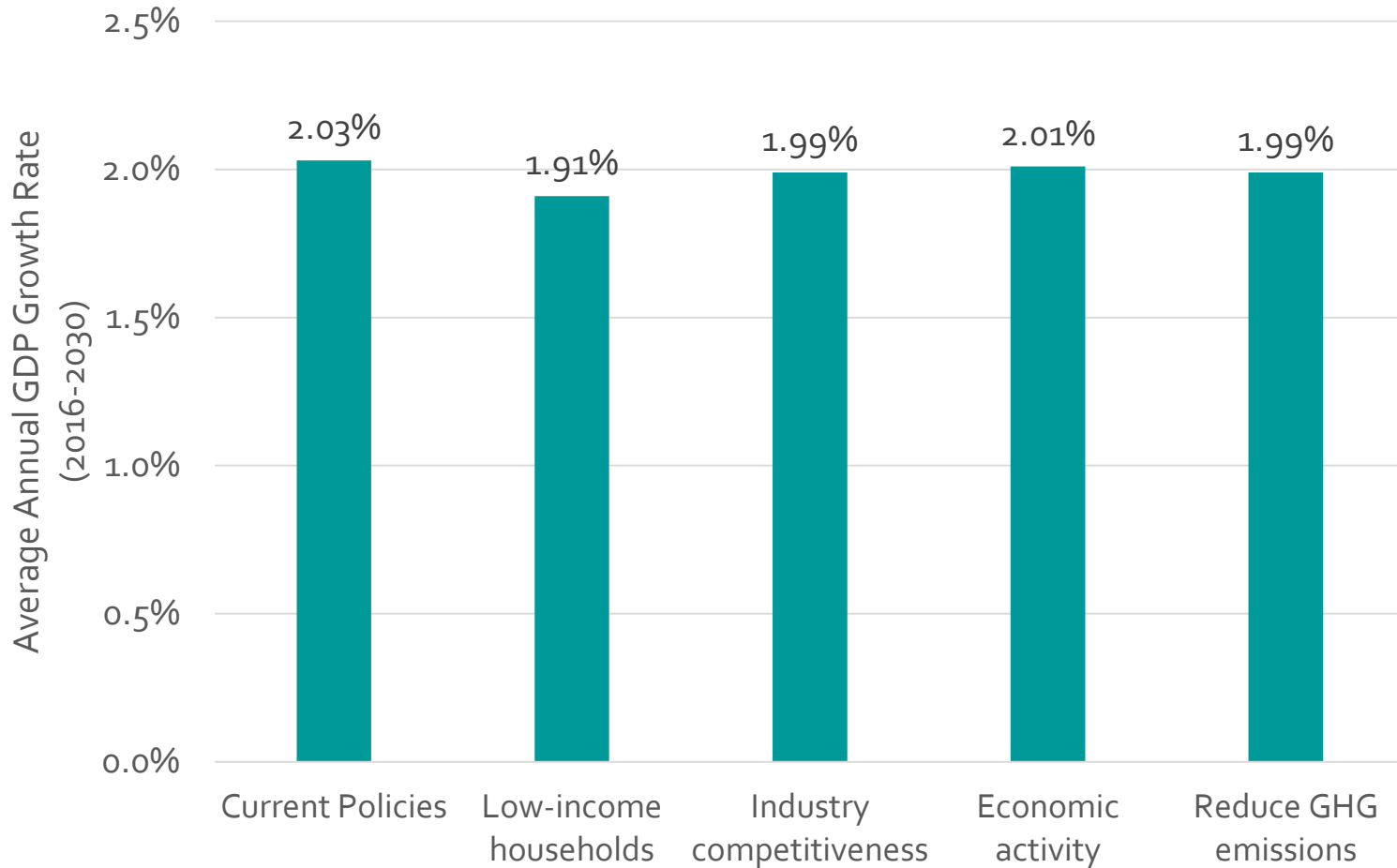
Objective	BC	Ontario & Québec	Alberta
3. Mitigate impacts on low-income households	Carbon revenue is returned directly to low-income & rural households	N/A	N/A
4. Maintain competitiveness for key industries	N/A	A portion of allowances are allocated for free	All allowances are allocated for free

4. Impacts of carbon pricing: GHGs



Source: Ecofiscal Commission Inc. 2016. "Options and Trade-offs in Recycling Carbon Pricing Revenues." based on analysis by Navius Research.

4. Impacts of carbon pricing: GDP growth



Source: Ecofiscal Commission Inc. 2016. "Options and Trade-offs in Recycling Carbon Pricing Revenues." based on analysis by Navius Research.

4. Impacts of carbon pricing: Household & comp.

- Experience with British Columbia's Climate Leadership Team indicates that about 20% of revenue can mitigate impacts on low-income households.
- Experience with Ontario's policy indicates that most (but not all) competitive impacts can be ameliorated with free allocations

5. Take-away messages

- Carbon pricing can be designed in different ways to achieve different objectives

Objective	How best to meet objective
1. Reduce GHG emissions	Stringency of policy. Using carbon revenue to investments in technology can achieve further abatement.
2. Maximize economic activity	Use carbon revenue to reduce other taxes.
3. Mitigate impacts on low-income households	Transfer a portion of carbon revenue directly to low income households.
4. Maintain competitiveness for key industries	Use carbon revenue to compensate emissions intensive and trade exposed sectors.

5. Take-away messages

- Climate policies can be designed in different ways to achieve different objectives
- New Brunswick will need new policies to achieve its GHG targets
- Reducing GHG emissions will likely impose a cost on the economy. This cost can be managed in different ways using policy design.

Thank you!

Questions, comments?

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