California-Quebec Cap-and-Trade: Will it Make it to 2030?

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Outline

1. Carbon pricing and the Western Climate Initiative
2. Emissions and caps in California and Quebec
3. What to expect in the next 10 years?
4. Conclusion
Carbon pricing initiatives

World Bank (2020)
Carbon prices & Coverage of emissions

World Bank (2020)
Western Climate Initiative (WCI)

- Created in 2007
- Initial members: Arizona, California, New Mexico, Oregon, and Washington
- Initial goal: 15% below 2005 emission levels by 2020
- Many partners and observers have been included, at one point
<table>
<thead>
<tr>
<th>California (USA)</th>
<th>Québec (CAN)</th>
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<td>Program initiated: 2012</td>
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1. **Primary Language**
   - California: English
   - Québec: French

2. **Time Zone**
   - California: Pacific
   - Québec: Eastern

3. **Area Size**
   - California: 163,696 square miles / 423,970 km²
   - Québec: 643,907 square miles / 1,667,712 km²

4. **Gross Domestic Product (GDP) in 2018**
   - California: USD 2,968 billion / CAD 3,846 billion
   - Québec: USD 338 billion / CAD 439 billion

5. **Population (Millions) in 2020**
   - California: 39.94
   - Québec: 8.55

6. **Overall GHG emissions in 2017 excluding LULUCF**
   - California: 424.0 MtCO₂e, see [inventory & trends](#)
   - Québec: 78.7 MtCO₂e, see [inventory & trends](#)

7. **Overall GHG emissions in 2017 by sector (MtCO₂e)**
   - **Transportation**: California: 101.1 (41%), Québec: 24.1 (30%)
   - **Industry**: California: 62.6 (16%), Québec: 0.2 (0.3%)
   - **Electricity & Heat**: California: 53.7 (12%), Québec: 8.1 (10%)
   - **Buildings**: California: 32.4 (8%), Québec: 12.3 (16%)
   - **Agriculture, Forestry & Waste**: California: 174.3 (23%)

8. **GHG Reduction Targets**
   - **California**:
     - By 2020: Return to 1990 level
     - By 2030: 40% below 1990 level
     - By 2050: 80% below 1990 level (By 2045: carbon neutrality)
   - **Québec**:
     - By 2020: 20% below 1990 level
     - By 2030: 37.5% below 1990 level
     - By 2050: 80-95% below 1990 level

9. **GHG Cap (2020) & Overall Emissions Coverage**
   - California: 334.2 MtCO₂e Covered (~80% (2017)) ~20% Not Covered
   - Québec: 50.7 MtCO₂e Covered (~77% (2017)) ~23% Not Covered

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**WCI (2020)**

- **US: 16.6 t per capita**
- **Canada: 19.7 t per capita**
California and Quebec Emissions, 2000-2018

- 2.1% since 1990
  CA: -1.3%
  QC: -6%

2030 Targets:
  CA: -40%
  QC: -37.5%

Mt

Transport

Waste

High GWP

CARB (2020)

MELCC (2000)
CA+QC Emissions and Cap until 2030

Cap (2015-2030)
-14 Mt each year:
-3.1% in 2016
and -5.6% in 2030

History
2000-2018
-0.5%/yr in CA
-0.1% in QC

Offsets:
8% until 2020
4% 2021-2025
6% 2026-2030
(Max 369 Mt)
Key question

When will scarcity hit the market? (Will it Make it to 2030?)

When will the box be too small?
2030 Allowances Price and GHG Emissions Forecast for WCI Carbon Market

January 2020, 57 Pages, €6,450

Membership: starting at US$1,200/year
Results for the 25 first California-Québec auctions

Impact on gasoline: 10-15¢/gallon (2-4¢ per litre)
Joint CA+QC Carbon Budget: 2013-2030

Government created allowances:

6 034 Mt

Maximum offsets:

369 Mt

Total: 6 403 Mt

2013-2018 emissions from CA+QC official inventories:

3 087 Mt

CARB (2020)
Results of the two first compliance periods

- **Compliance period 1 (2013-14)**
  - Surplus: +191
  - Cap: 1337
  - Allowances surrendered: 1209
  - Offsets surrendered: 369

- **Compliance period 2 (2015-17)**
  - Surplus: +8
  - Cap: 1084
  - Allowances surrendered: 1066
  - Offsets surrendered: 953

**Real coverage**

- **CP1**
  - CA: 33%
  - QC: 23%

- **CP2**
  - CA: 76%
  - QC: 74%

**% offsets**

- CP1: 4%
- CP2: 5.9%
CA+QC Emissions scenarios until 2030

2 scenarios:

- 2000-2018 trend continues to 2030
- Current measures (CA scoping plan and QC green economy plan)

Mt

Agriculture
Buildings
Electricity
Industries
Transport

CARB (2020)
MELCC (2000)
The system is short of 89 Mt in 2026, 339 Mt by 2030.

272 Mt of possible offsets
Emissions Scenario “2000-2018 trend”

The system is short of 19 Mt as early as 2023, 699 Mt by 2030.

272 Mt of possible offsets

CARB (2020)
Floor and Ceiling Prices

Floor Price:
US$10 in 2013 + 5% + inflation

Price Ceiling:
US$65 in 2021 + 5% + inflation

Inflation estimated at 1.5% after 2021
Discussion

• The WCI was over-allocated initially... but not anymore
• Banked and still available allowances should take us to 2023... but we’ll only realize on Nov. 1st 2027 that we’re short.
• Auctions should heat up in 2027 (ceiling price at $95)
• Everything depends, of course, on actual emission reductions.
Conclusion

• The WCI has worked well so far.
• Nobody appears really concerned about the cap and prices.
• We should probably be, because emission reductions are not at the level they should be.
• Covid-19 and the economic slowdown are of course helping. But is it the right approach to reduce GHG emissions?
Thank You

ergie.hec.ca

Partners of the Chair in Energy Sector Management: