Chair in Energy Sector Management

HEC MONTRÉAL

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

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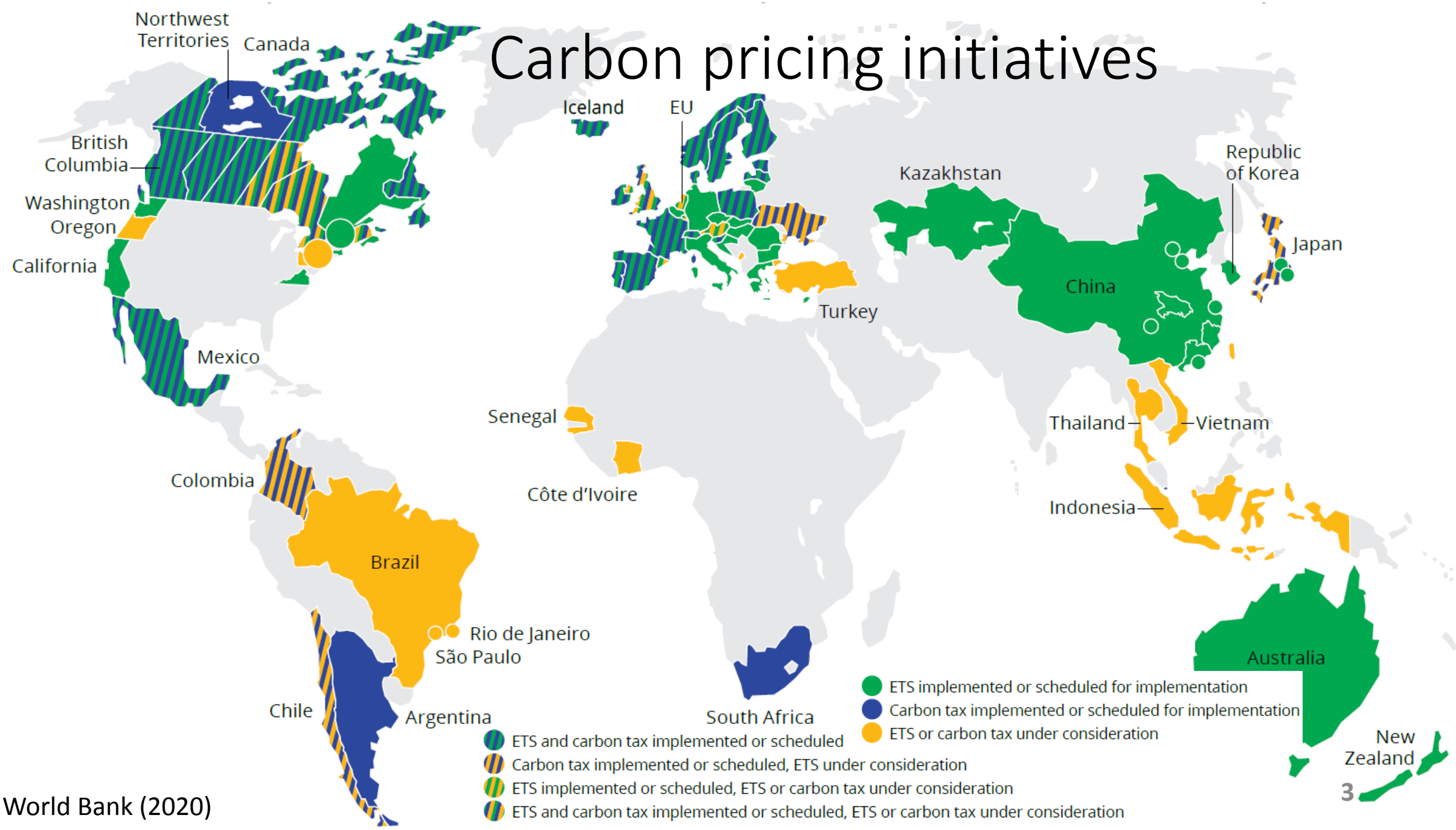
CAEE

Canadian Association for Energy Economics
Association canadienne de l'économie de l'énergie

Outline

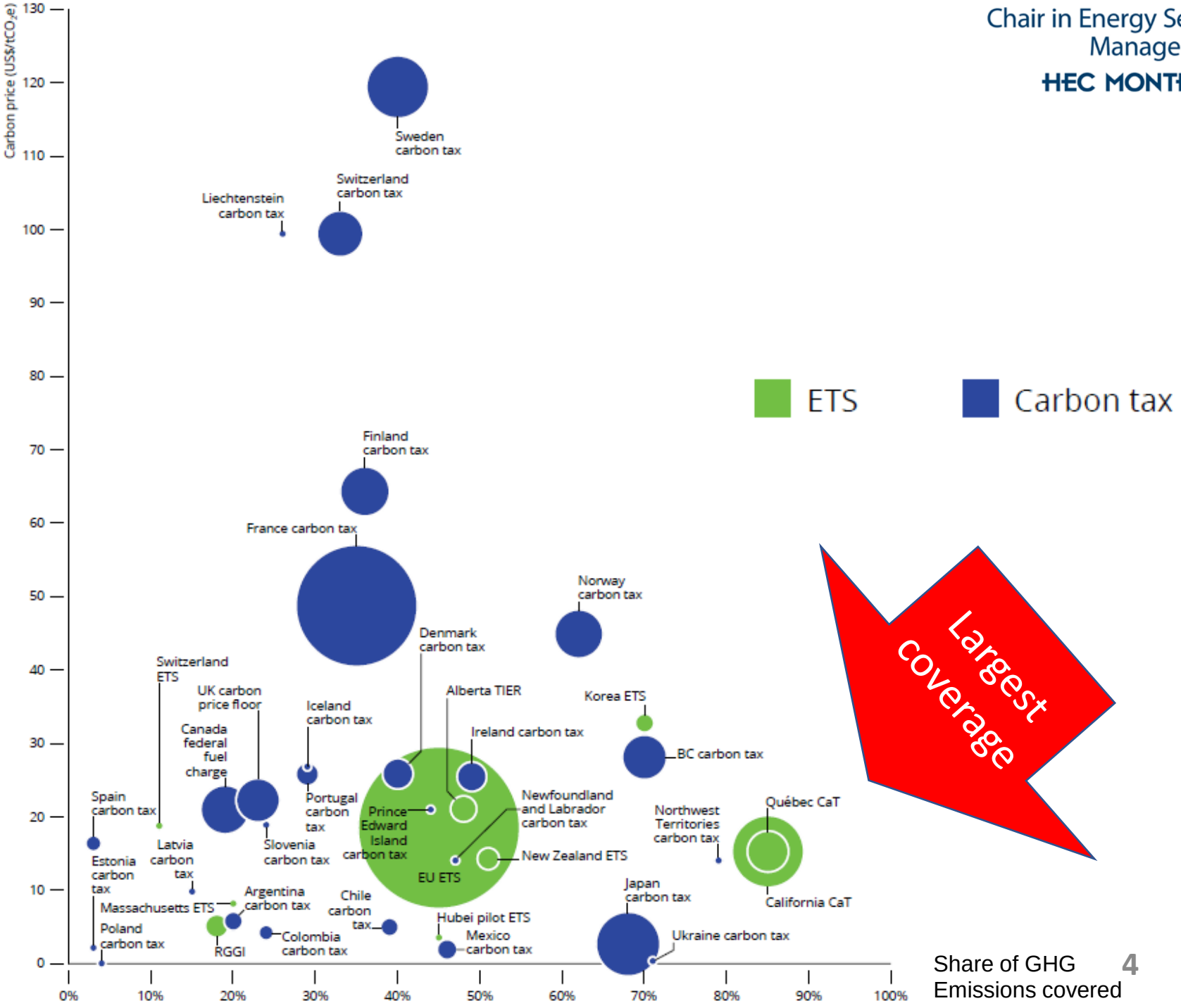
1. Carbon pricing and the Western Climate Initiative
2. Emissions and caps in California and Quebec
3. What to expect in the next 10 years?
4. Conclusion

Carbon pricing initiatives



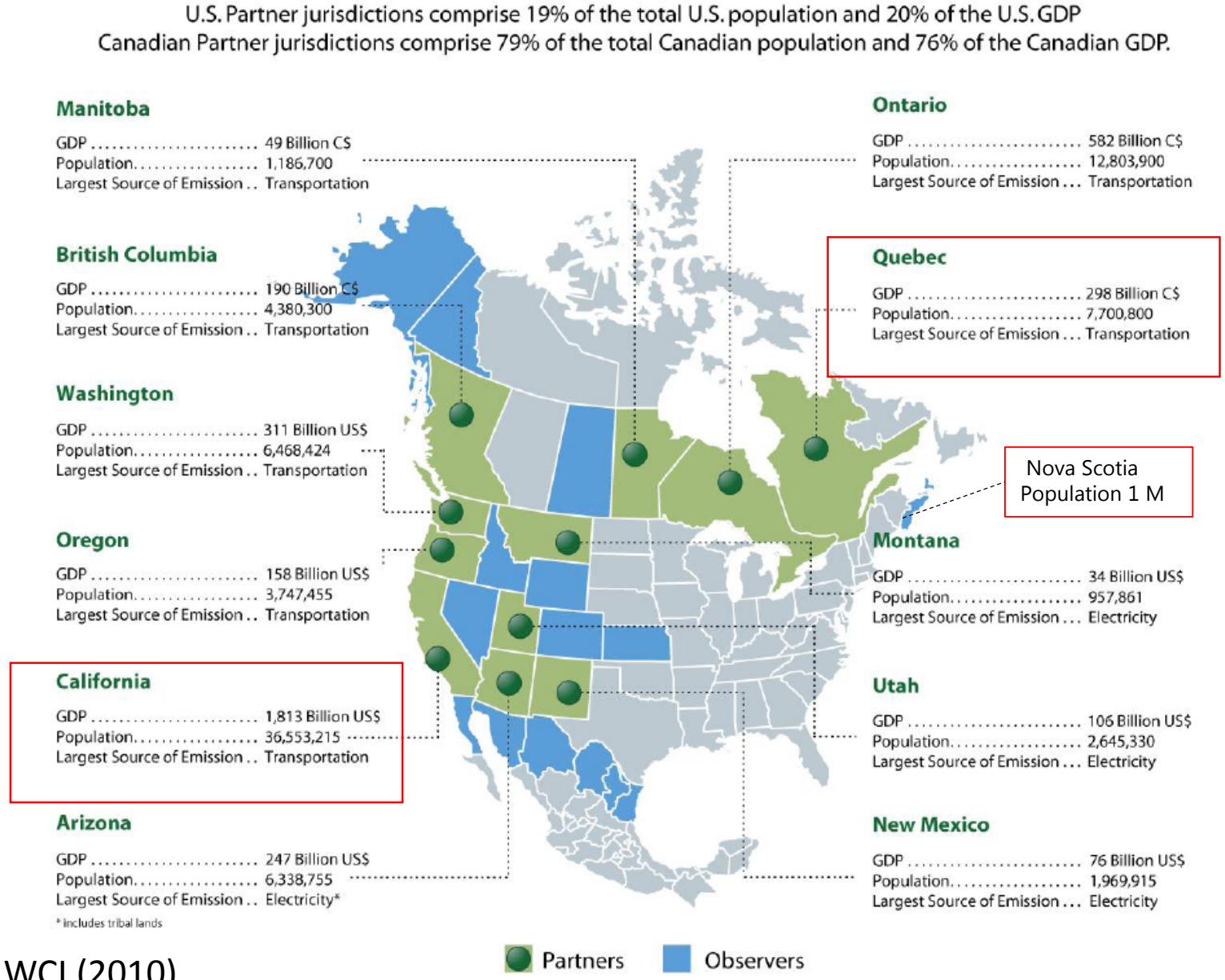
World Bank (2020)

Carbon prices & Coverage of emissions



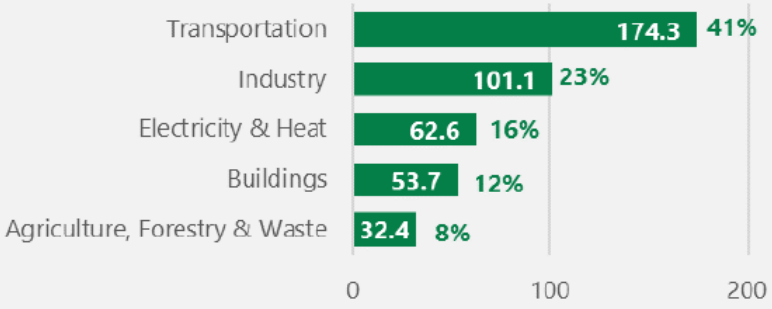
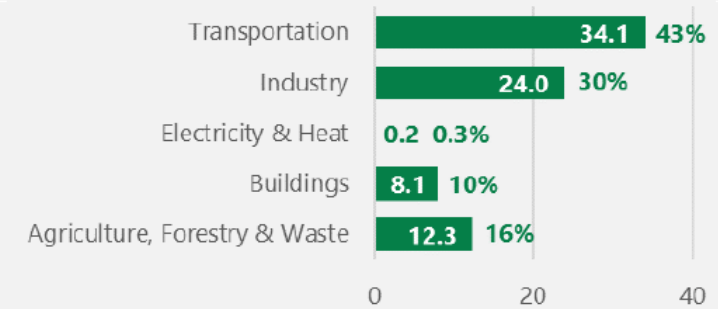
World Bank (2020)

Western Climate Initative (WCI)



WCI (2010)

- 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*

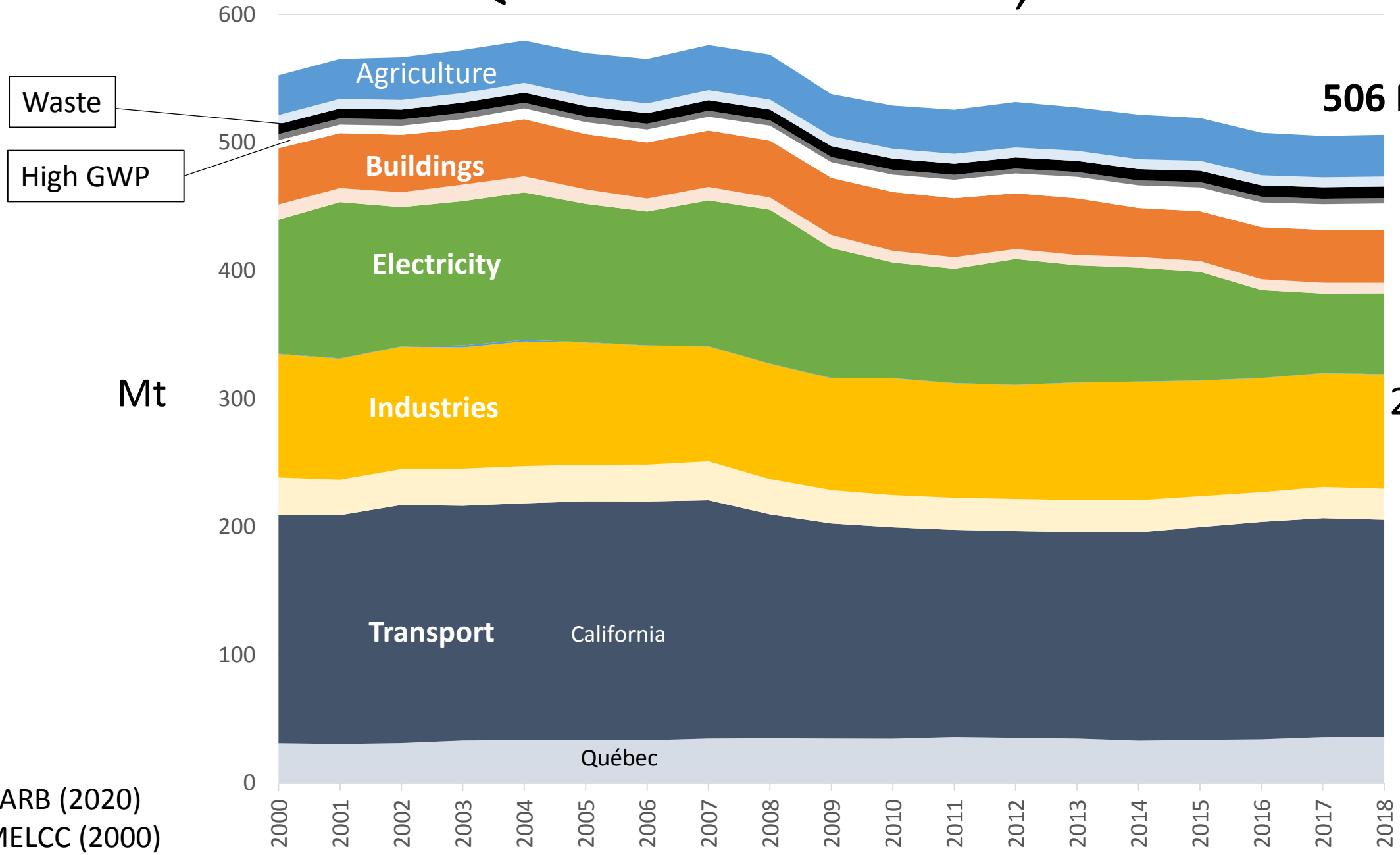
	California (USA)	Québec (CAN)
	Program initiated: 2012 **Linkage: Québec (2014)**	**Program initiated: 2013** **Linkage: California (2014)**
1. **Primary Language**	English	French
2. **Time Zone**	Pacific	Eastern
3. **Area Size**	163,696 square miles / 423,970 km^2	643,907 square miles / 1,667,712 km^2
4. **Gross Domestic Product (GDP) in 2018**	USD 2,968 billion / CAD 3,846 billion	USD 338 billion / CAD 439 billion
5. **Population (Millions) in 2020**	39.94	8.55
6. **Overall GHG emissions in 2017 excluding LULUCF[1]**	424.0 $MtCO_2e$, see inventory & trends	78.7 $MtCO_2e$, see inventory & trends
7. **Overall GHG emissions in 2017 by sector ($MtCO_2e$)**		
8. **GHG[2] Reduction Targets**	- **By 2020:** Return to 1990 level - **By 2030:** 40% below 1990 level - **By 2050:** 80% below 1990 level (By 2045: carbon neutrality)	- **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**	**334.2 $MtCO_2e$ Covered ~80 % (2017)** / **~ 20 % Not Covered**	**50.7 $MtCO_2e$ Covered ~77 % (2017)** / **~ 23 % Not Covered**

10.6 t per capita
US: 16.6

9.2 t per capita
Canada: 19.7

WCI (2020)

California and Quebec Emissions, 2000-2018



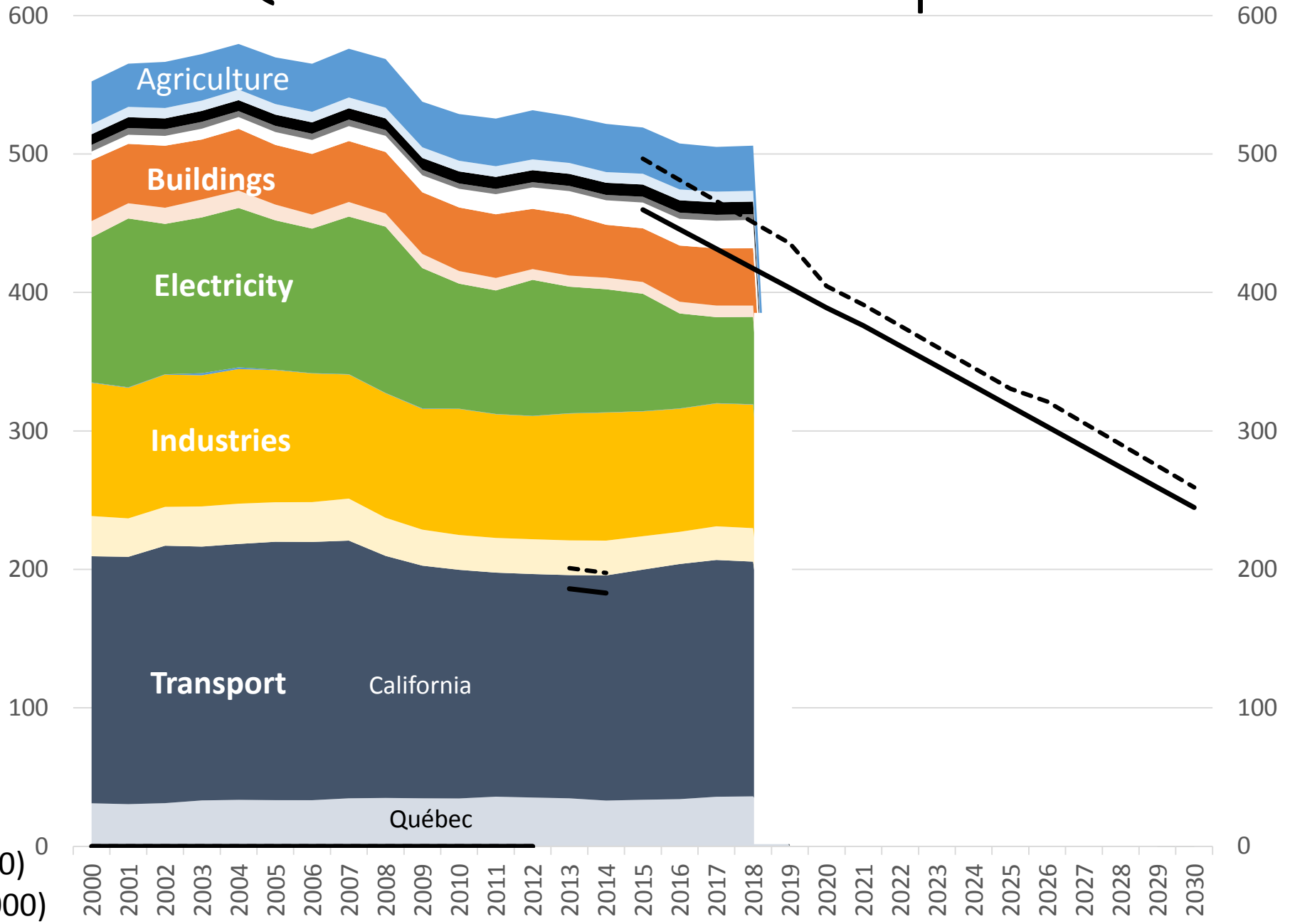
506 Mt

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

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

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

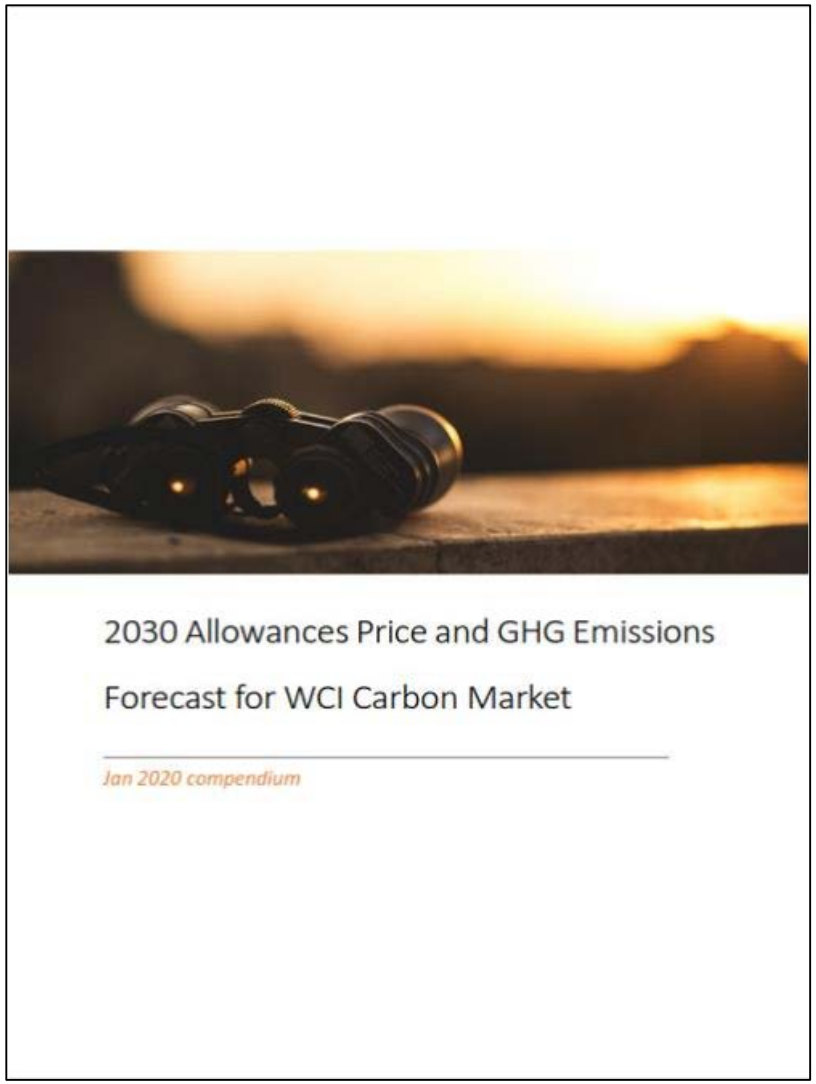
Offsets:
8% until 2020
4% 2021-2025
6% 2026-2030
(Max 369 Mt)

CARB (2020)
MELCC (2000)

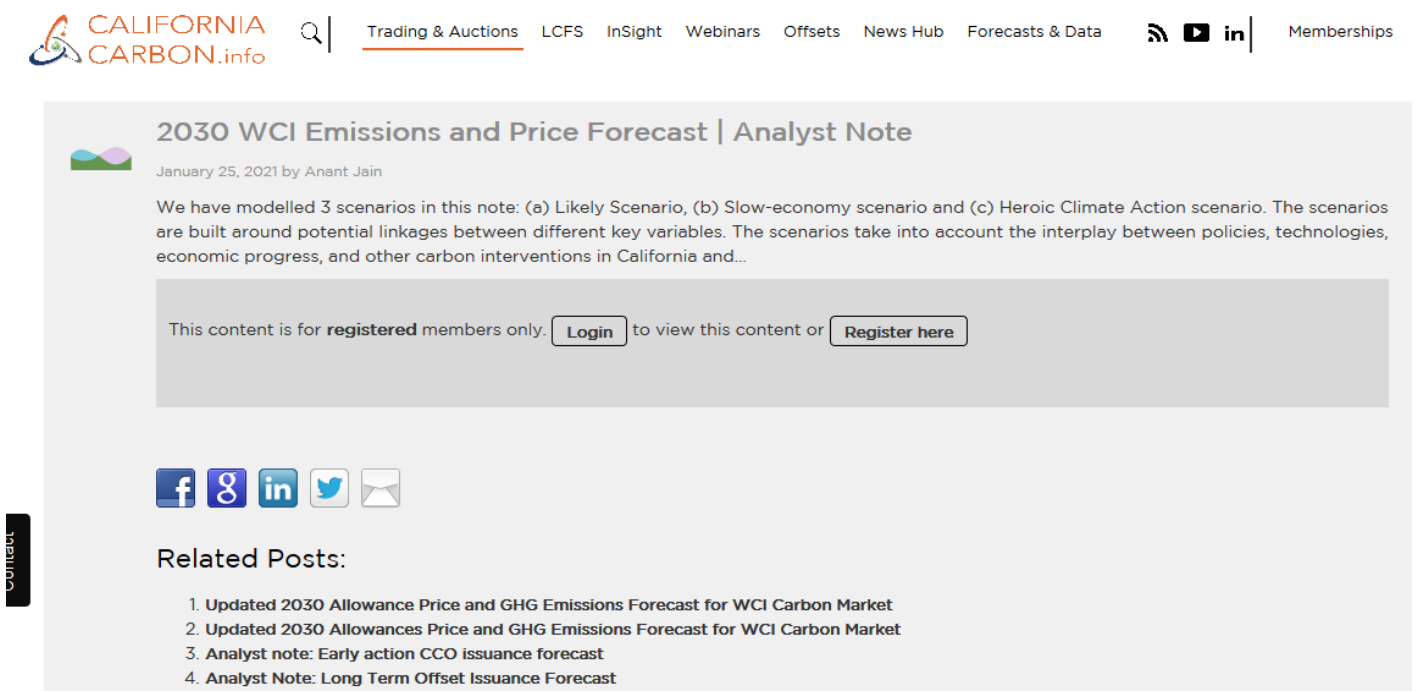
Key question

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

When will the box be too small?

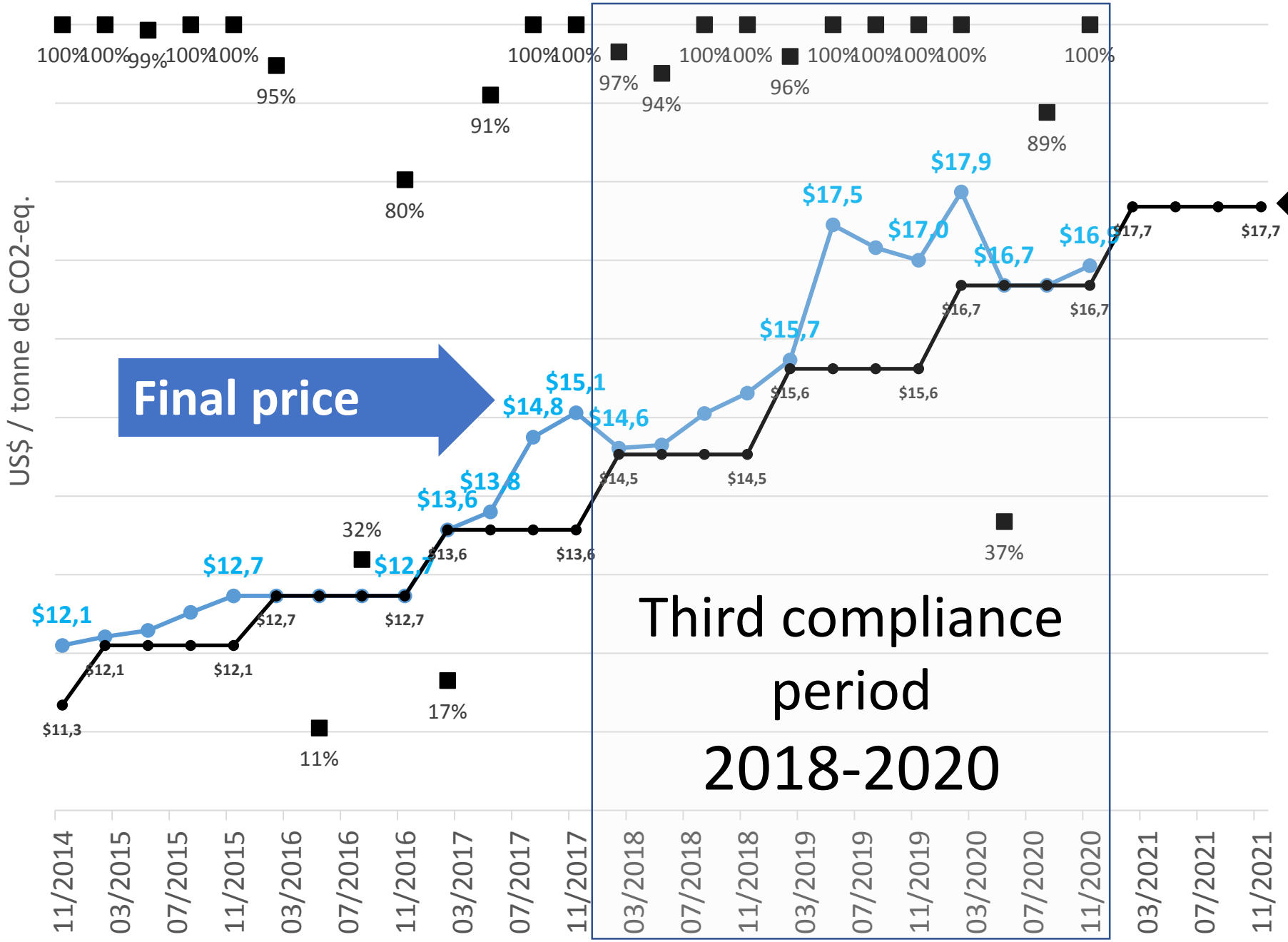


January 2020, 57 Pages, €6,450



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

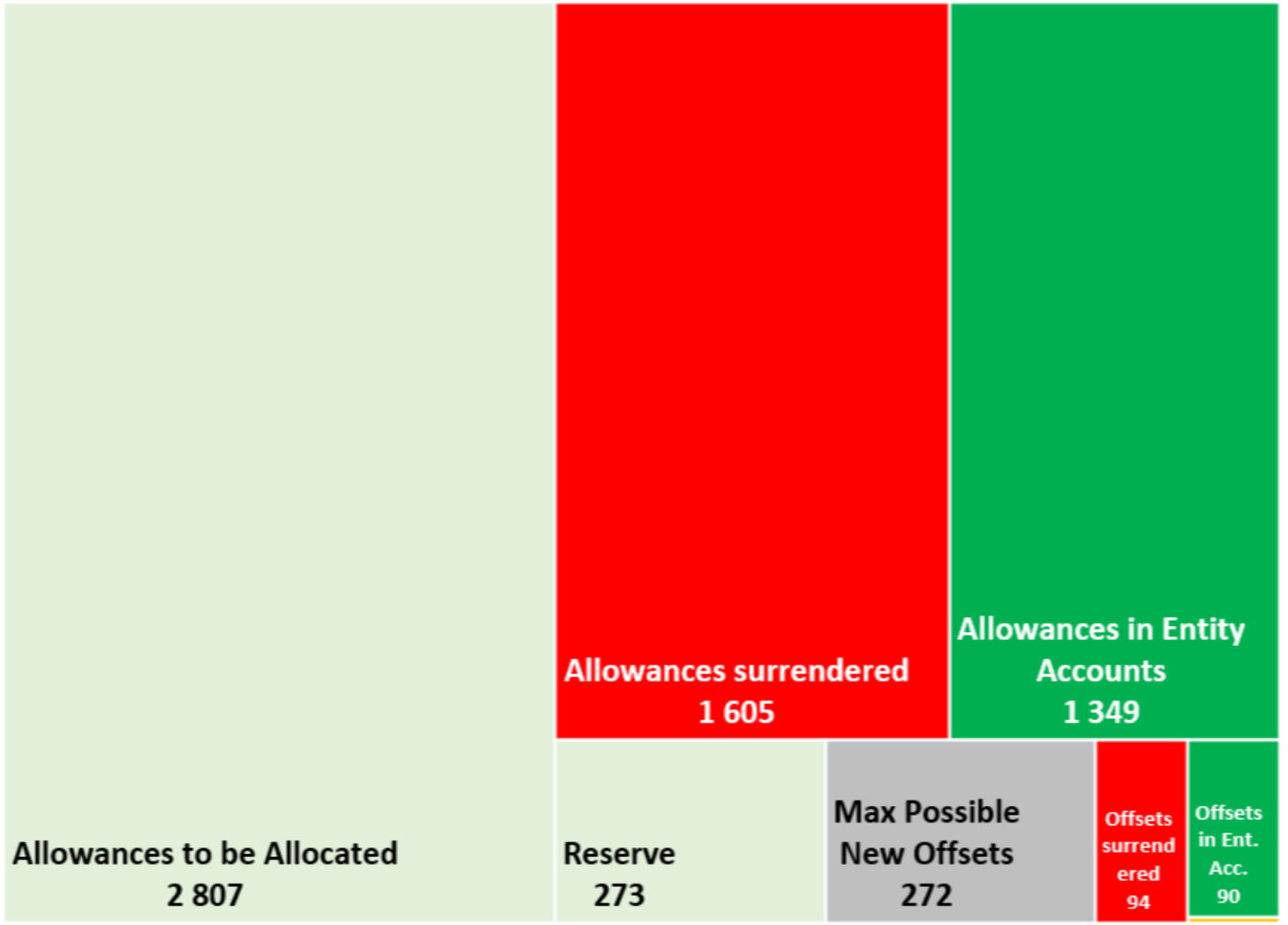
Maximum offsets:

369 Mt

Total: 6 403 Mt

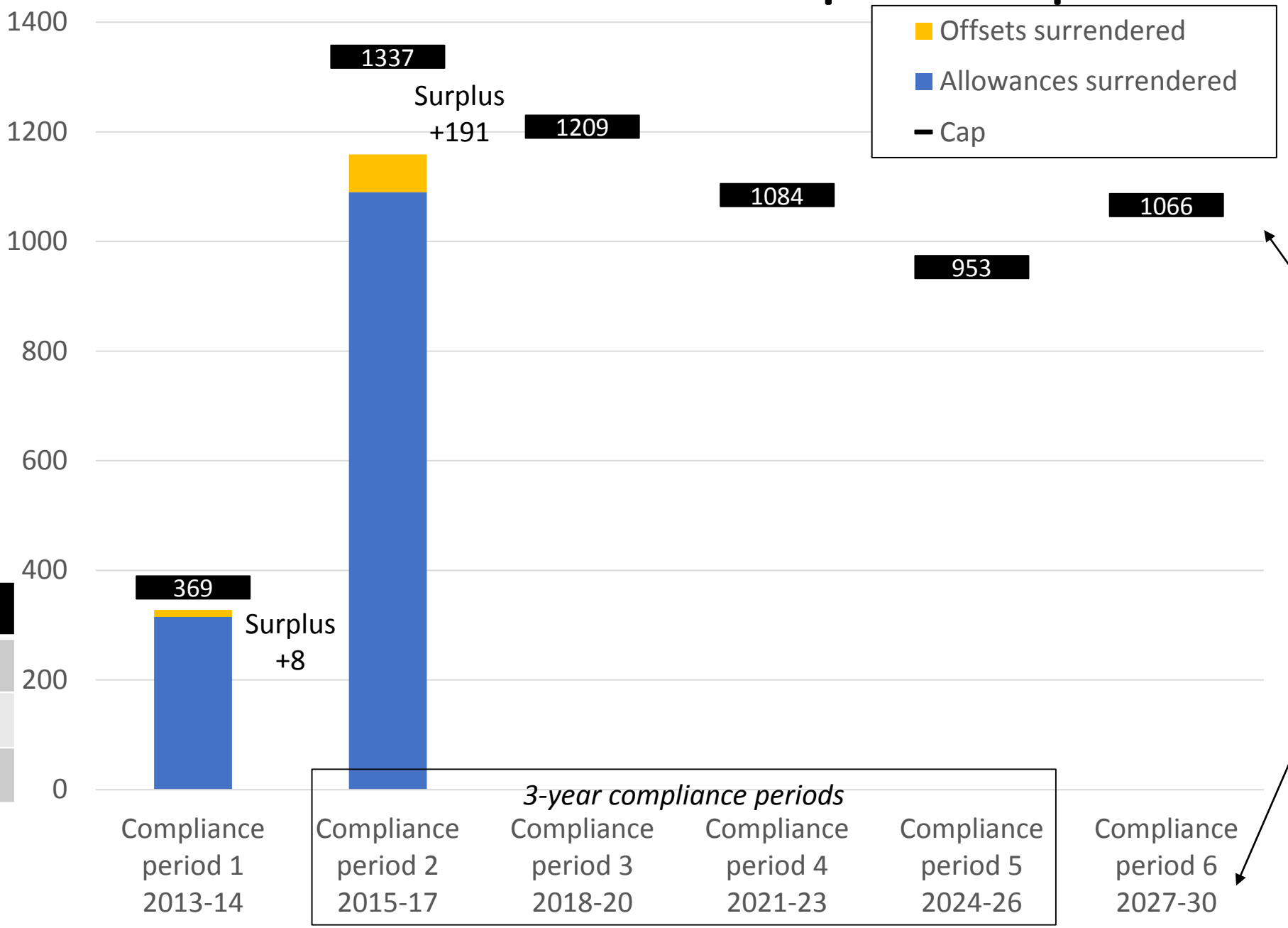
2013-2018 emissions from CA+QC official inventories:

3 087 Mt



CARB (2020)

Results of the two first compliance periods

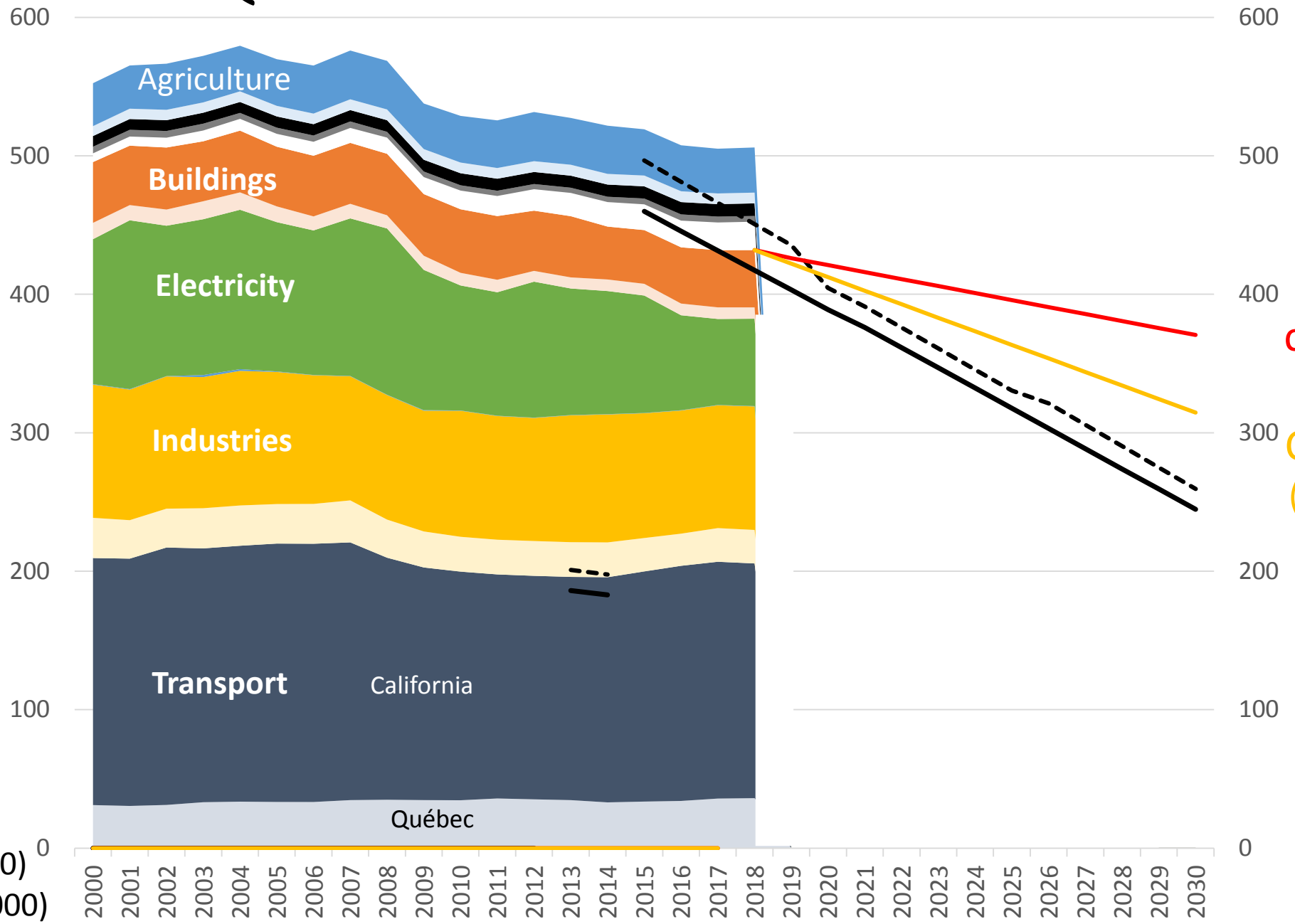


% offsets	
CP1	CP2
4%	5.9%

Real coverage		
	CP1	CP2
CA	33%	76%
QC	23%	74%

CARB (2020)

CA+QC Emissions scenarios until 2030



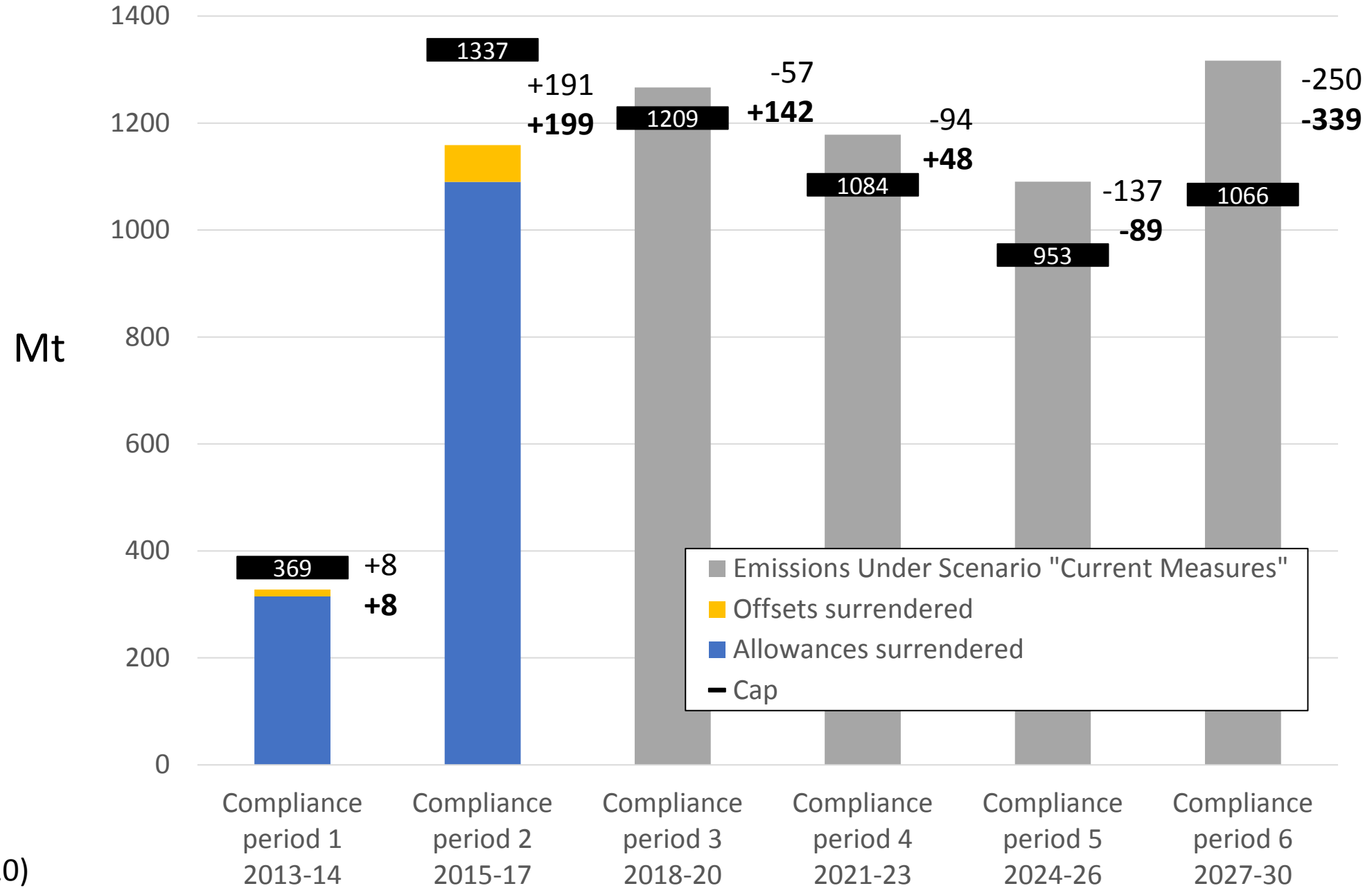
2 scenarios:

2000-2018 trend continues to 2030

Current measures (CA scoping plan and QC green economy plan)

CARB (2020)
MELCC (2000)

Emissions Scenario “Current Measures”

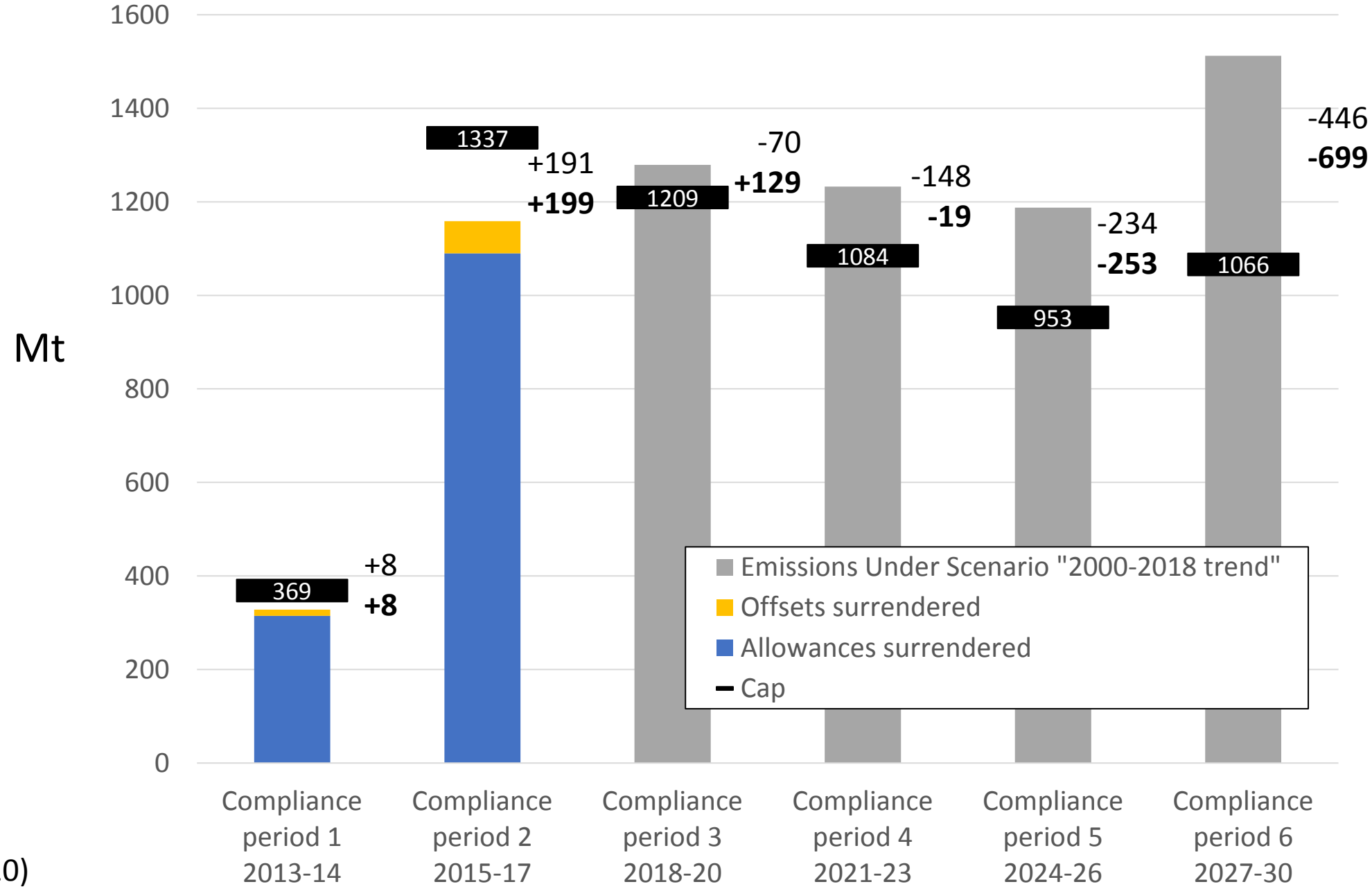


The system is short of 89 Mt in 2026, 339 Mt by 2030.

272 Mt of possible offsets

CARB (2020)

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

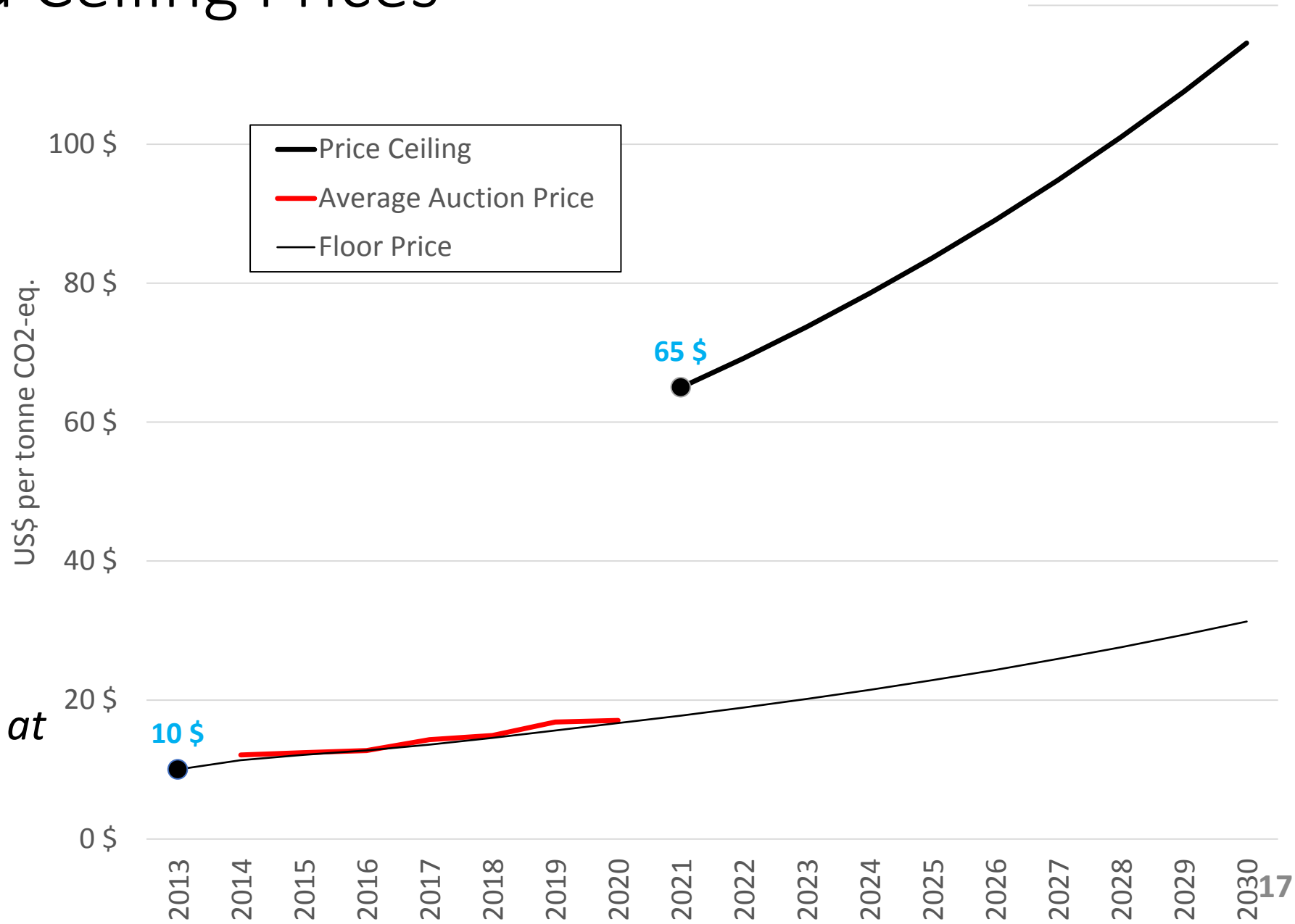
Floor Price:

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

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