State of Play: EVs in Canada

Market trends and policy landscape

CLEAN ENERGY CANADA

Canadian EV/Hybrid Auto Recycling Webinar

November 4, 2021

@cleanenergycan

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About Clean Energy Canada

Clean Energy Canada works to accelerate Canada's transition to a clean and renewable energy system. We collaborate with civil society, governments and the private sector to build awareness and support for solutions that address climate disruption and foster an energy efficient, environmentally responsible and prosperous economy.

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Clean Energy Canada is an initiative of the Morris J. Wosk Centre for Dialogue at Simon Fraser University.

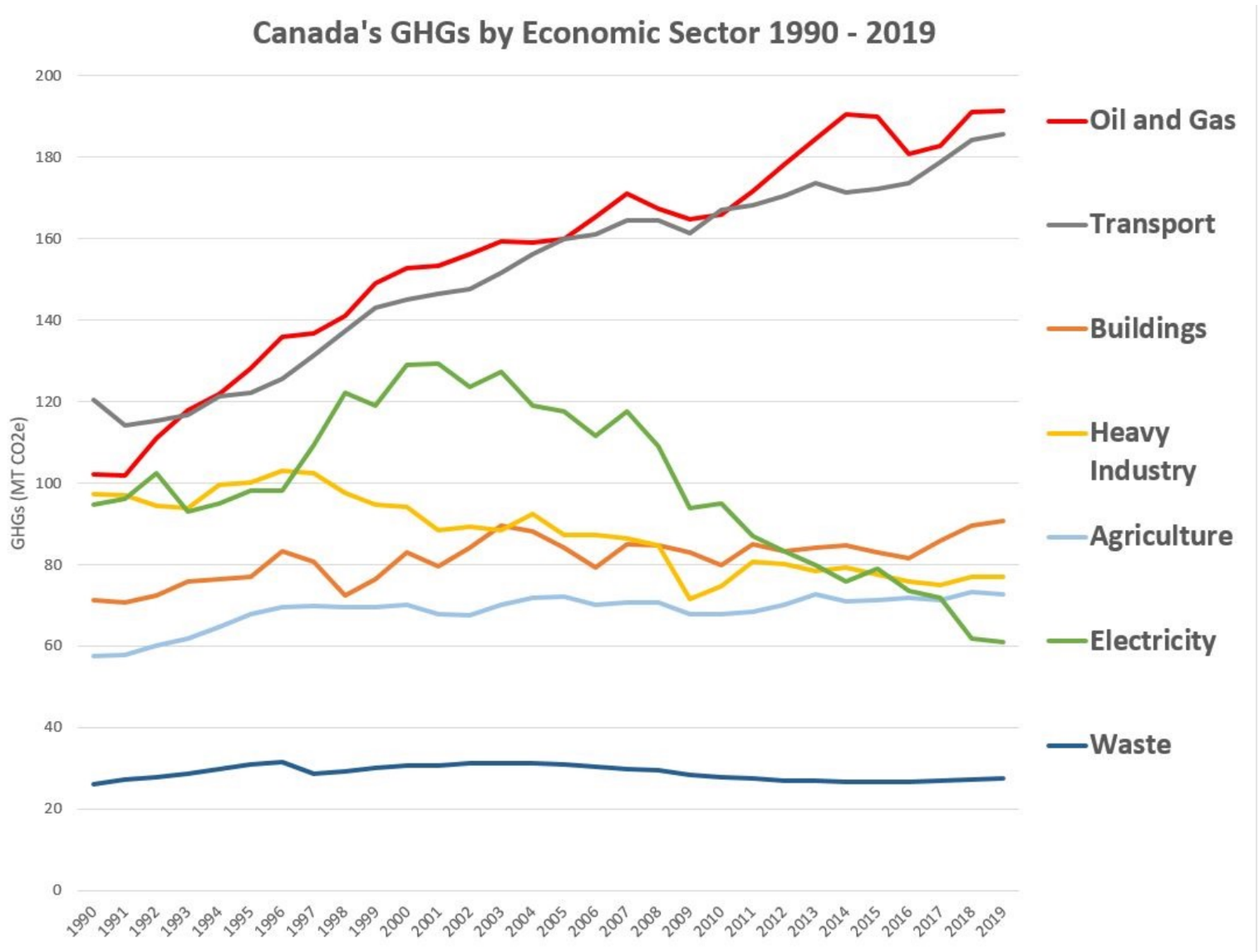
Where Canada wants to go

- Canada has set the following targets:
  - Reduce greenhouse gas emissions 40-45% by 2030 against 2005 levels
  - Economy-wide net-zero emissions by 2050
  - At least 50% of passenger vehicle sales to be zero-emission by 2030 and 100% by 2035
  - 100% of medium- and heavy-duty vehicles sales to be zero emission by 2040, where feasible



State of Play

Transportation is 2nd highest emitter

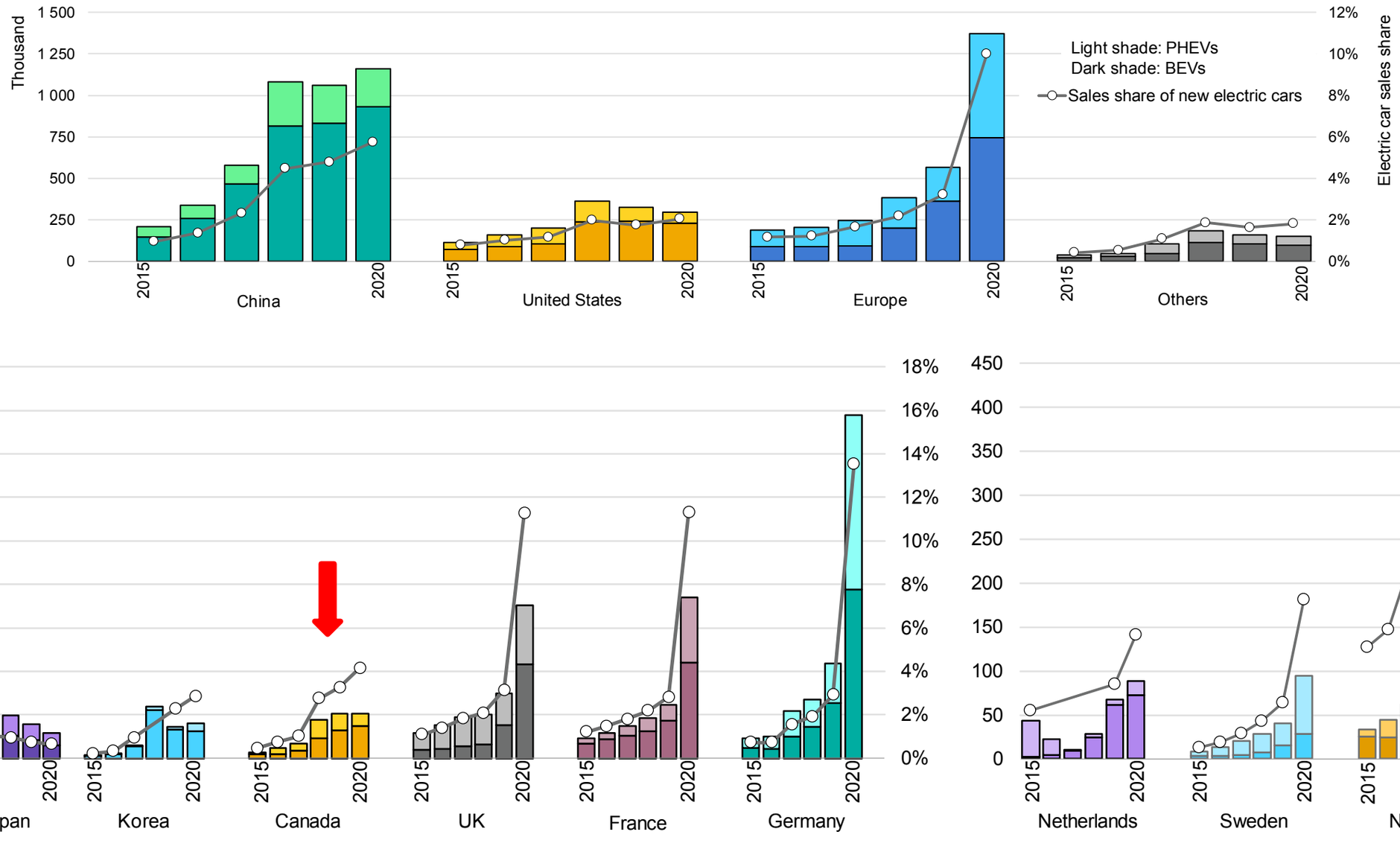


Source: ECCC, 2021

State of Play

Electric car sales on the rise

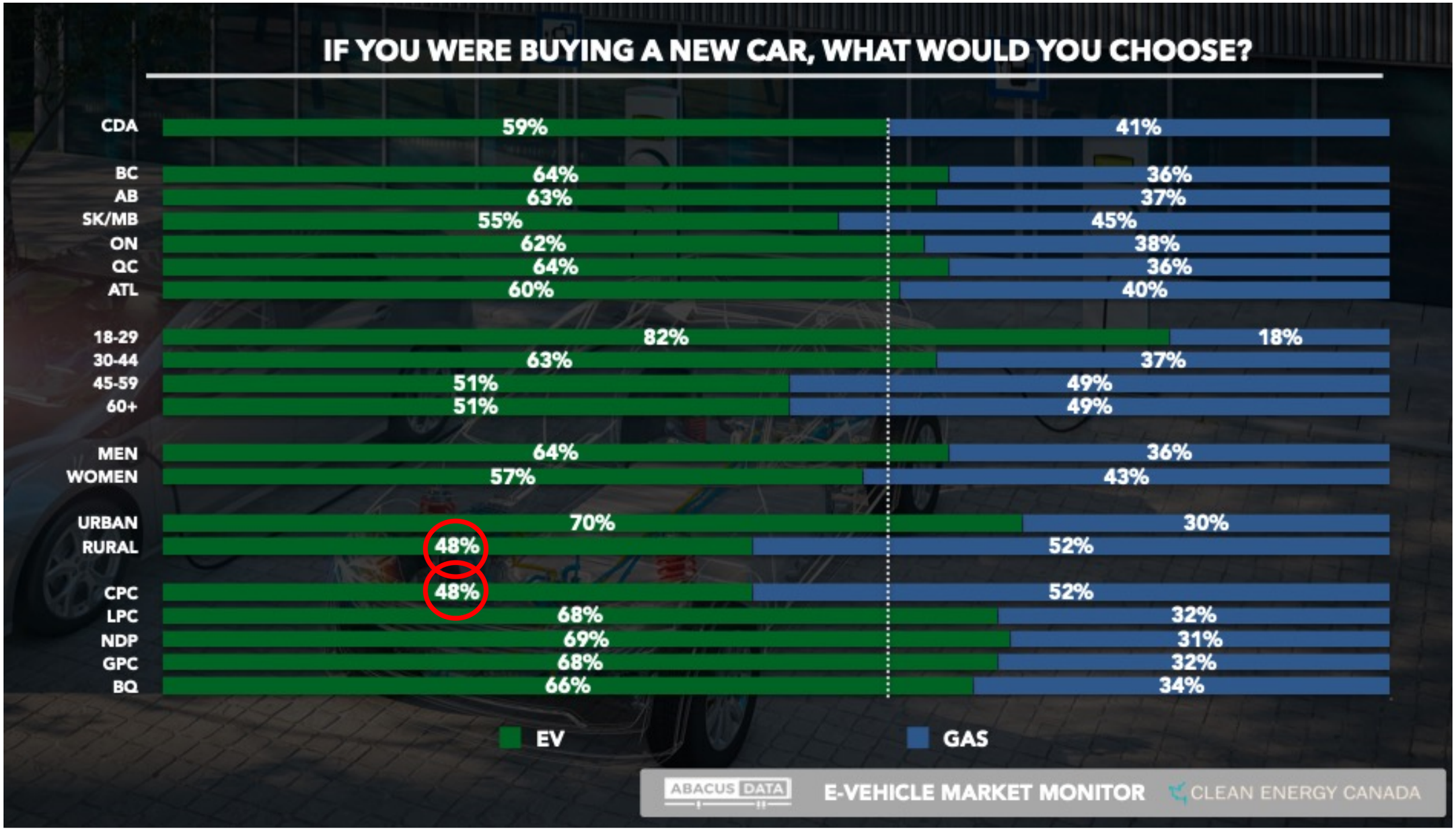
Electric car registrations and sales share in selected countries and regions, 2015-2020



Source: IEA, 2021

Opportunities

Canadians want to go electric

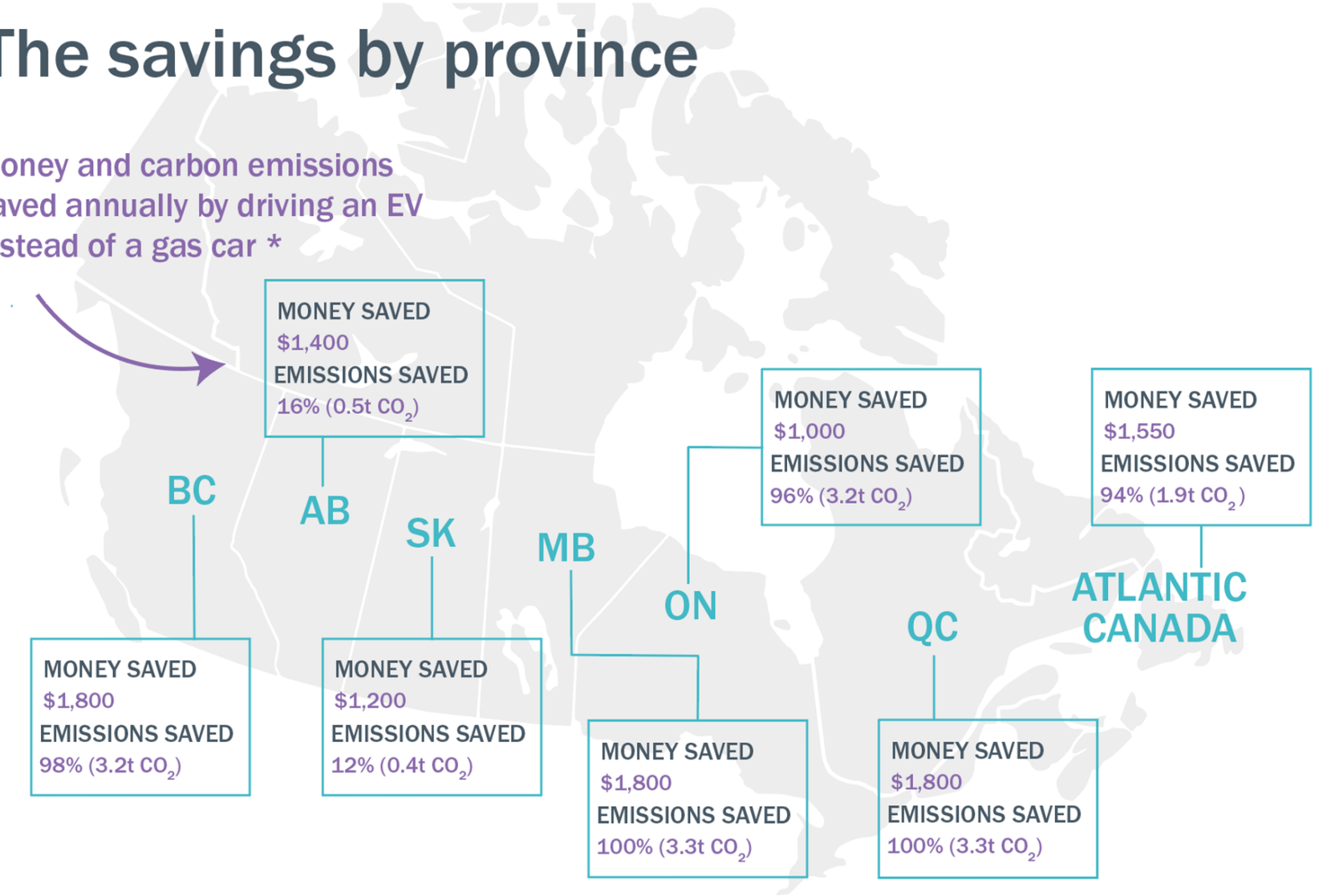


Opportunities

Savings from going electric

The savings by province

Money and carbon emissions saved annually by driving an EV instead of a gas car *



Opportunities

Automakers spending billions on EVs

Investing Billions

Automakers' 2020 investment and announced electric vehicle and digital investment

	2020 R&D and capital expenditure	Announced EV and digital investment	Investment horizon
Volkswagen	$28.7 billion	$ 83 billion	5 years
Mercedes-Benz	13.8	46	10
Stellantis	13.0	34	5
GM	11.5	35	6
Ford	12.8	30	5

Sources: Companies, BloombergNEF

Capex Is Destiny

Automakers' electric vehicle and digital R&D and capex commitments as a percentage of total R&D and capex

Sources: Companies, BloombergNEF
Note: calculated as equal annual investment over companies' stated investment periods, divided by 2020 R&D and Capex.

Opportunities

Recent investments by Detroit Big Three

The New York Times

The Transition to Electric Cars | Investing in Batteries | GM's Electric Car Goals | Can the Power Grid Handle It? | Benefits of Electric Cars

Canada Catches Up in the Race to Produce Zero-Emission Vehicles

A series of announcements has not only reversed the decline of Canada's auto industry, but has also set it on the path to electrification.

By Ian Austen

Feb. 26, 2021

Public health measures to restrain the coronavirus pandemic have been brutal to many industries and the people who work in them — tourism and restaurants being perhaps the most obvious examples.

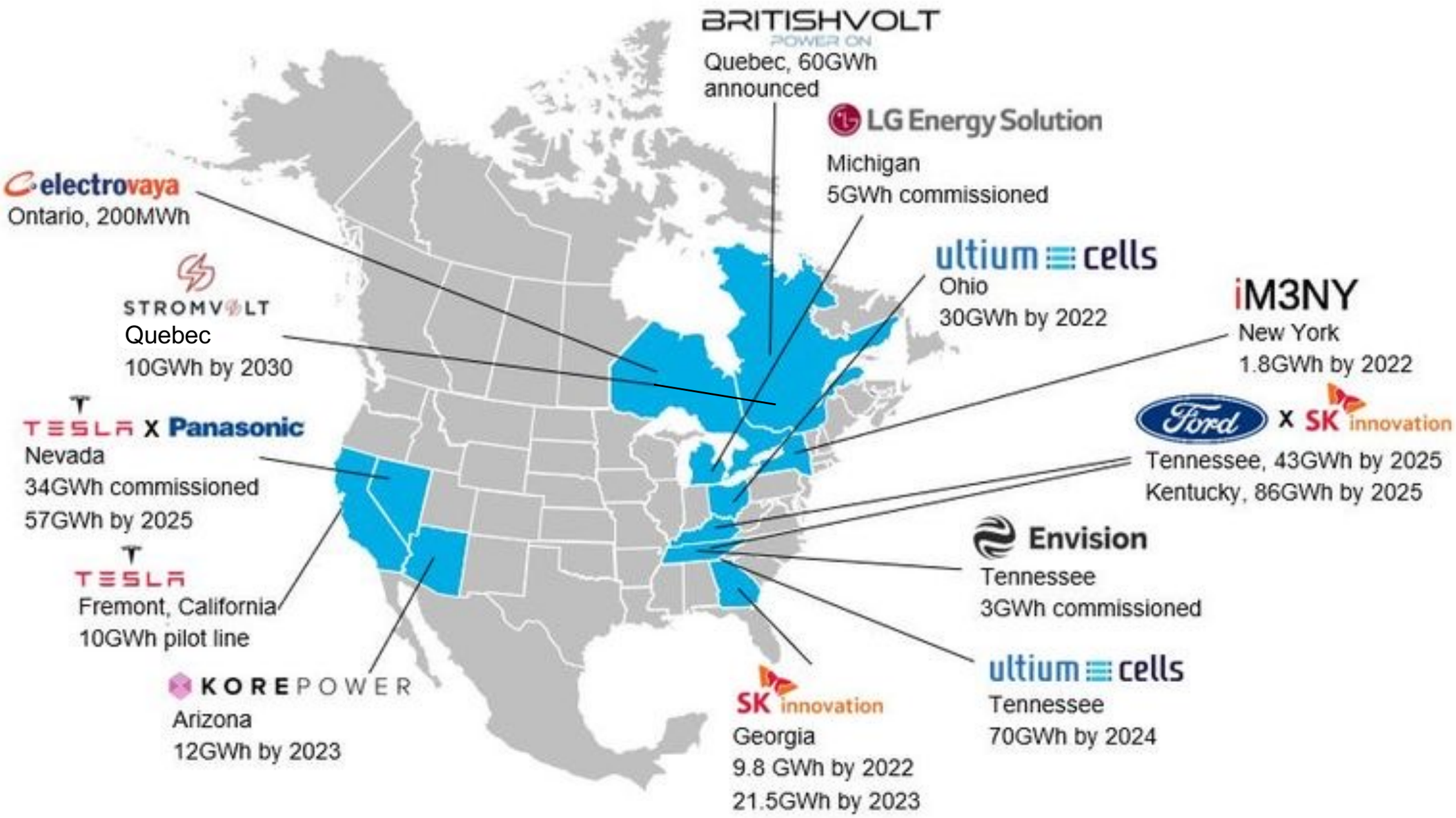
Ford $1.8 billion

STELLANTIS $1.6 billion

GM $1 billion

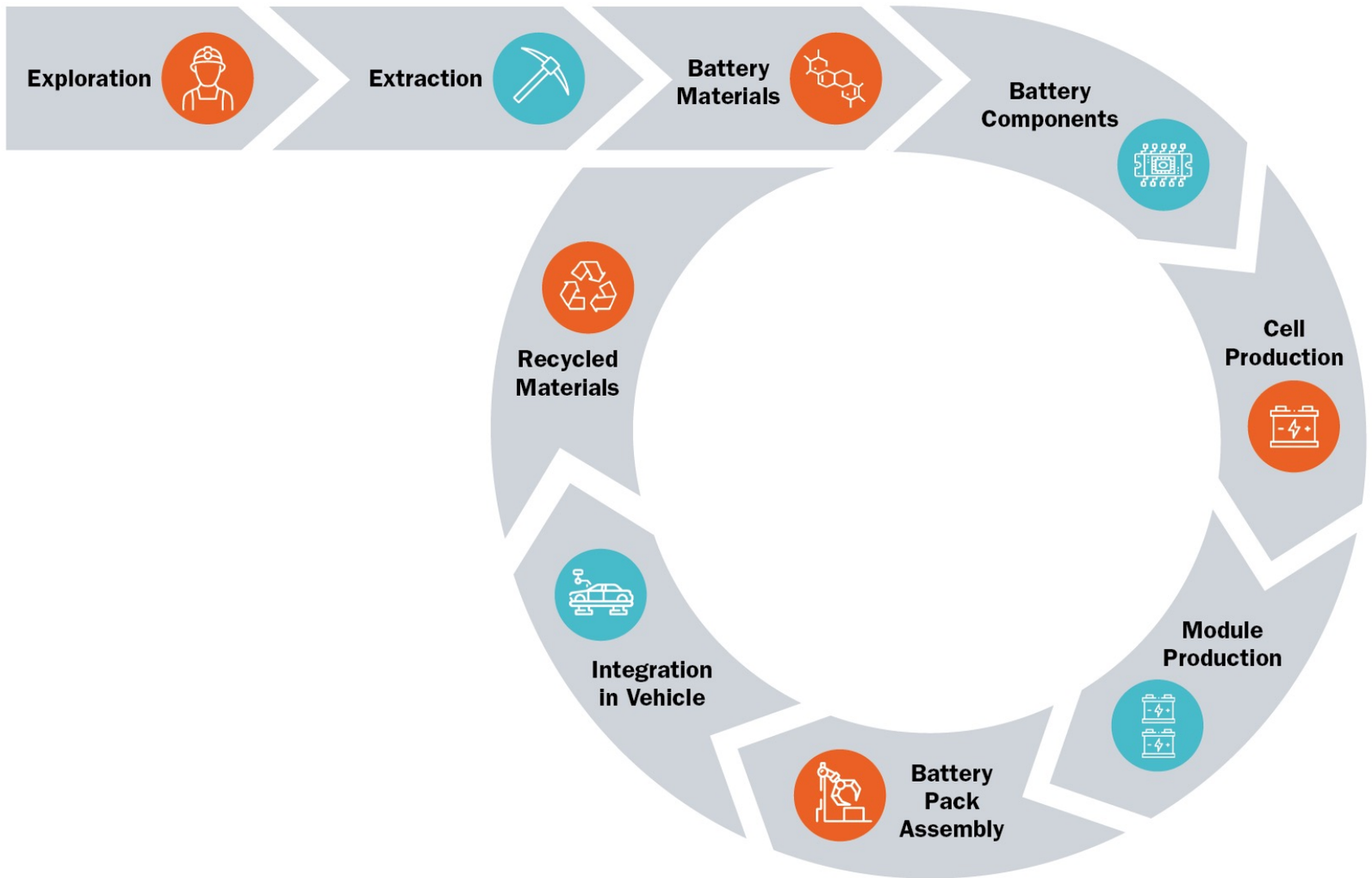
Opportunities

Batteries coming to North America



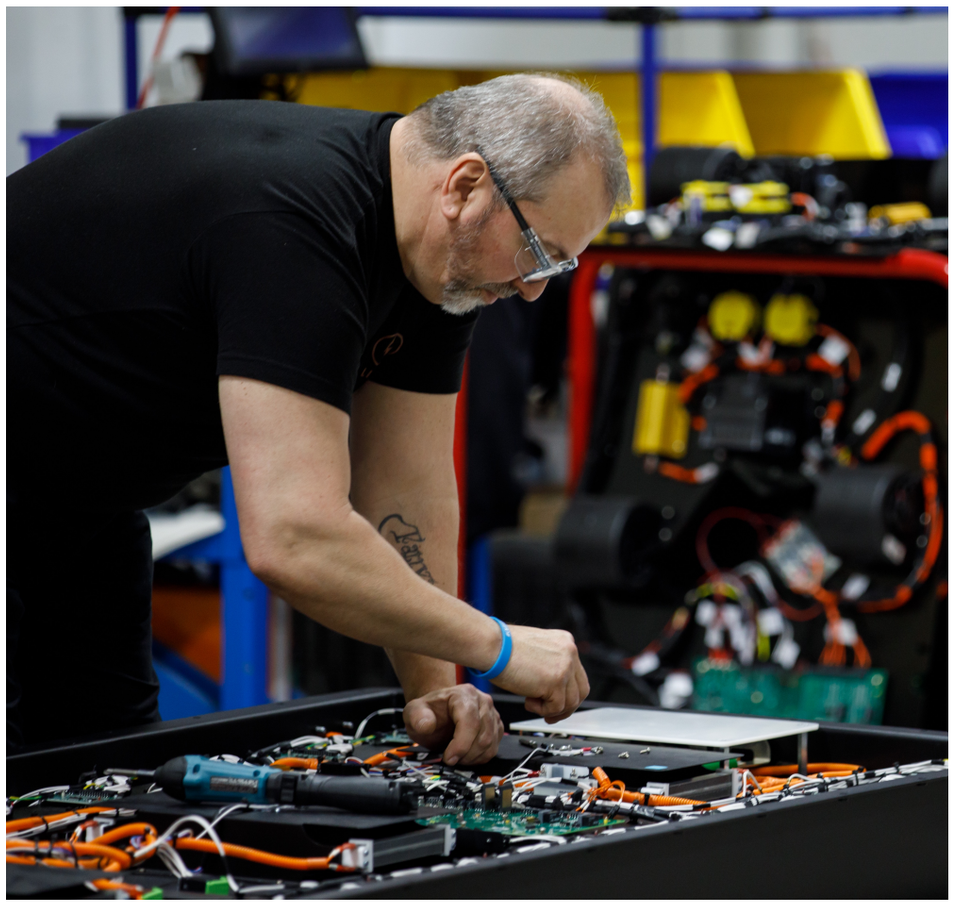
Opportunities

Opportunities beyond battery cells too



Opportunities

Canada's clean battery advantage



- Critical metals and minerals
- Skilled workforce
- Cutting-edge battery R&D ecosystem
- Proximity to a well-integrated North American market
- Responsibly-produced resources
- Abundant clean electricity to power low-carbon operations

Policy Landscape

EV Policies in Canada

Demand-Side	Supply-Side	Industrial
• Carbon price • Consumer purchase incentives • Public charging investments • Education and awareness programs	• Vehicle emission regulations • Provincial sales mandates in BC and Quebec • Clean Fuel Standard (forthcoming) + Clean Fuels Fund	• $8 billion Net-Zero Accelerator Fund • *Mines to Mobility* "strategy"