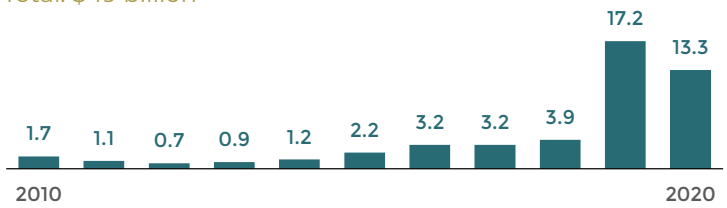
BATTERIES & STORAGE

Batteries and energy storage will play a critical role in the low-carbon transition, enabling electrification in transportation and facilitating larger scale deployment of renewable electricity. This sector includes vehicle and grid-scale battery technology and manufacturing, and thermal, mechanical, and pumped hydro storage, as well as lithium battery recycling.

Global market (841 companies)

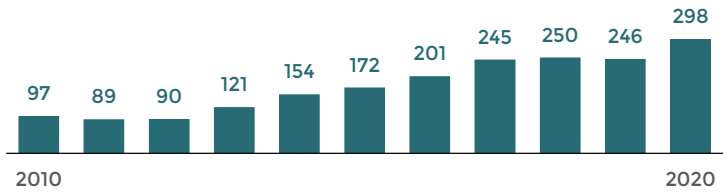
Capital invested ($B)*

Total: $49 billion



Deal count*

Three-fold increase from 2010 to 2020



Global low-carbon scenarios and trends

- 90–100% of passenger vehicle sales are expected to be electric by 2050, increasing demand for batteries and recycling.[1]
- Commercial vehicle electrification could expand with lower cost batteries and improved charging networks.[2]
- Demand for grid and behind-the-meter (e.g., residential) energy storage grew from 0.2GW in 2013 to 3.1GW in 2019.[3]

Global market dynamics

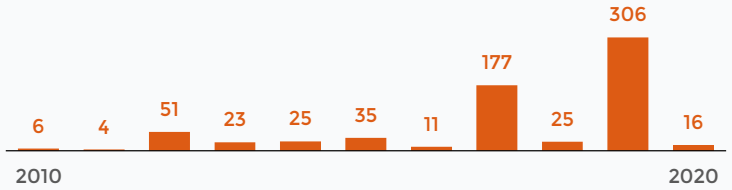
- There are a number of large and well-financed companies across North America, Europe, and Asia competing in battery markets.
- Competition for new technologies that reduce costs or improve performance is fierce, generating greater risks and opportunities in markets where technology options can shift suddenly.
- There are fewer companies operating in long-term grid storage and lithium battery recycling.

*Source: PitchBook Data, Inc. (2021). Data is drawn from a custom search that has not been reviewed by PitchBook Analysts.

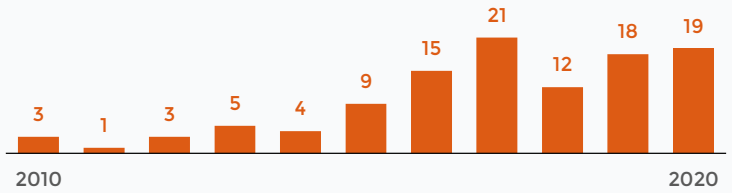
Canadian market (41 companies)

($M)

Total: $678 million



Seven-fold increase from 2010 to 2017



Canadian net-zero scenarios and trends

- By 2050, 58–100% of passenger vehicles and 7–32% of medium and heavy-duty vehicles are expected to be electric.[4]
- Renewable electricity production is projected to increase significantly, increasing demand for grid storage solutions to balance intermittency.[5]
- Behind-the-meter storage demand may grow significantly if the changing climate creates reliability concerns and two-way flows improve.[6]

Canadian competitiveness

Companies with significant potential in grid energy storage and recycling

+ Advantages

- Potential supply chain advantages with access to battery minerals, and vehicle manufacturing.[7]

× Disadvantages

- Canada's electric vehicle battery manufacturing capacity is relatively small.

NOTABLE COMPANIES

Electrovaya: Lithium battery maker with market cap of $161 million in August, 2021

Li-Cycle: Lithium battery recycler that raised $1.6 billion in a second public offering in October, 2021.[8]

Disclaimer

This analysis is provided by the Canadian Institute for Climate Choices (the Climate Institute) for informational purposes only. None of the information in this analysis is intended to provide, nor should be construed as or relied upon as, investment, financial, legal or other advice. The Institute is not an investment adviser and makes no representations regarding any investment strategy or the suitability of investing in any particular company, investment fund or other vehicle. For our full disclaimer, see climatechoices.ca/reports/sink-or-swim/disclaimer.

The information and data contained in this analysis has been obtained or prepared from publicly available documents and other sources prepared by third parties, some of which may be proprietary and used under license. In particular, the global and domestic investment trends included in the two figures are obtained from PitchBook Data, Inc., drawn from customized searches that have not been reviewed by PitchBook analysts. These data and trends also underestimate total market activity. The PitchBook database contains information on over 3 million companies globally but is not exhaustive. Within this database, not all deals are included and not all deals have a disclosed value. The sector also only includes companies whose primary line of business aligns with the sector description (e.g., it excludes large multinationals with multiple lines of goods/services and those with only indirect linkages to the sector). Total investment includes company-level data through December 31, 2020.

All dollar values included in this document are expressed in USD.

Endnotes

1 Planetrics. 2021. Climate risk model and scenario outputs. Drawn from work commissioned by the Canadian Institute for Climate Choices.

2 Luke Sarabia. 2021. “New electric delivery vehicles hitting Canadian market signal opportunity for fleet operators.” Electric Autonomy. March 23. https://electricautonomy.ca/2021/03/23/electric-delivery-vans-canada/

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4 Navius Research. 2021. Achieving Net Zero Emissions by 2050 in Canada. Analysis commissioned by the Canadian Institute for Climate Choices. https://climatechoices.ca/wp-content/uploads/2021/02/Deep-Decarbonization-Report-2021-01-21-FINAL.pdf.

5 Canadian Institute for Climate Choices. 2021. Canada’s Net Zero Future. www.climatechoices.ca/reports/canadas-net-zero-future/

6 Peter Maloney. 2018. “BTM storage is booming in Ontario.” Utility Dive. August 20. www.utilitydive.com/news/btm-storage-is-booming-in-ontario/530518/

7 Mining.com. 2020. “Canada ranked 4th, US 6th in lithium-ion battery supply chain.” https://www.mining.com/new-ranking-has-canada-4th-us-6th-in-lithium-ion-battery-supply-chain/

8 Li-Cycle. 2021. “Li-Cycle, North America’s Largest Lithium-Ion Battery Resource Recycling Company, to List on NYSE through Transaction with Peridot Acquisition Corp.” Press Release. https://li-cycle.com/wp-content/uploads/2021/04/Li-Cycle-Definitive-Agreement-Announcement-Press-Release.pdf