

## Transition-opportunity sector profiles

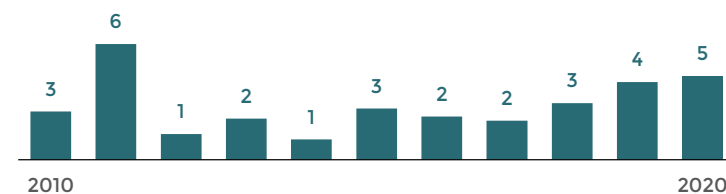
# BIOPRODUCTS AND BIOENERGY

Products from bioproducts and bioenergy include fuel ethanol, biodiesel, biogas, biochemicals, biochar, bioplastics, synthetic renewable fuels, and related technologies. It also includes the development and production of sustainable feedstocks.<sup>1</sup>

### Global market (841 companies)

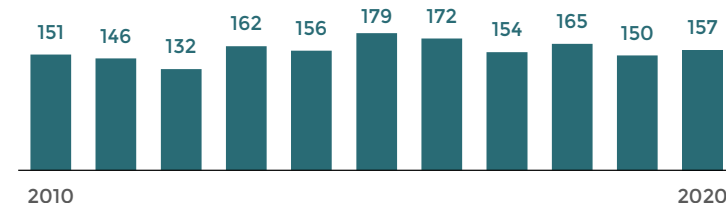
#### Capital invested (\$B)\*

Total: \$32 billion



#### Deal count\*

Averaging about 157 per year



#### Global low-carbon scenarios and trends

- Wide range of investment projections for liquid bioenergy (e.g., ethanol/biodiesel) across scenarios, ranging from \$55 to \$250 billion per year in 2050.<sup>2</sup>
- Global wood pellet market could grow to \$24 billion in 2025 (CAGR of 14%).<sup>3</sup>
- Biomass and waste-to-energy market could grow to \$37 billion by 2027 (CAGR of 7.3%).<sup>4</sup>

#### Global market dynamics

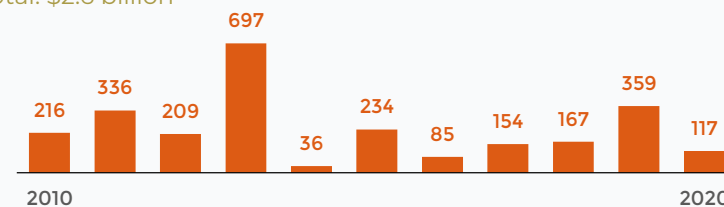
- Main barriers to demand growth: availability and cost of sustainable feedstocks that do not negatively impact ecosystems or food supplies.
- Most companies are in North America and Europe.
- Concerns that increased demand for biomass will lead to unsustainable land-use practices could restrain demand.
- Improved technology and lower costs in second and third generation biofuel methods (which do not use food crop feedstocks) would result in greater feedstock supply and reduced land use.<sup>7</sup>

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

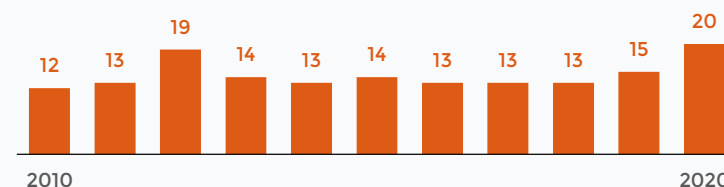
### Canadian market (87 companies)

#### Capital invested (\$M)

Total: \$2.6 billion



Averaging about 15 per year



#### Canadian net-zero scenarios and trends

- New investment in biofuels to 2050 ranges from \$0 to over \$30 billion per year.
- Biofuel demand is greater in scenarios where direct air capture and CCUS are limited.<sup>5</sup>
- Overall, the use of biofuels and biogas varies widely across scenarios: between 321 and 2,153 PJ.<sup>6</sup>

#### Canadian competitiveness

Canada has potential in wood pellet exports and next generation biofuel technologies.

##### + Advantages

- Canada is the second largest global exporter of wood pellets.<sup>8</sup>
- Sustainable feedstock opportunities from forestry, agriculture sectors, combined with sequestration potential for BECCS.<sup>9</sup>

##### x Disadvantages

- High production costs and land-use constraints.

##### NOTABLE COMPANIES

Pinnacle Renewable Energy Group: supplier of wood pellets, \$366 million in revenues in 2020.

Enerkem: Producer of clean fuels and green chemicals from waste, raised \$787 million to date.<sup>10</sup>

## Disclaimer

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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

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- 1 Note that forestry companies active in this space are not included in the analysis, as it is not possible to separate their bioproducts business lines from conventional logging/milling activities.
- 2 Network of Central Banks for Greening the Financial System. 2020. "NGFS Scenario Explorer (REMIND-MAgPIE Immediate 1.5 with CDR scenario and Delayed 2 with limited CDR scenario)." <https://data.ene.iiasa.ac.at/ngfs/>
- 3 Research and Markets. 2020. "Outlook on the Wood Pellet Global Market to 2025: Europe is the Largest Consumer as Well as Producer of Wood Pellets." Press release. November 24.
- 4 Research and Markets. 2021. "Biomass & Waste-to-Energy Industry Assessment 2020-2027: Competitor Market Shares and Impact of COVID-19." Press release. January 27.
- 5 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>
- 6 Ibid.
- 7 Chris Bataille. Personal communication. February 2021.
- 8 Natural Resources Canada. 2020. "Bioenergy and Bioproducts." Government of Canada. <https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/forest-fact-book/bioenergy-bioproducts/21686>
- 9 Note: BECCS stands for Bioenergy with carbon capture and storage
- 10 PitchBook Data Inc. 2021. Custom search (data has not been reviewed by PitchBook analysts). [Pitchbook.com](https://pitchbook.com)