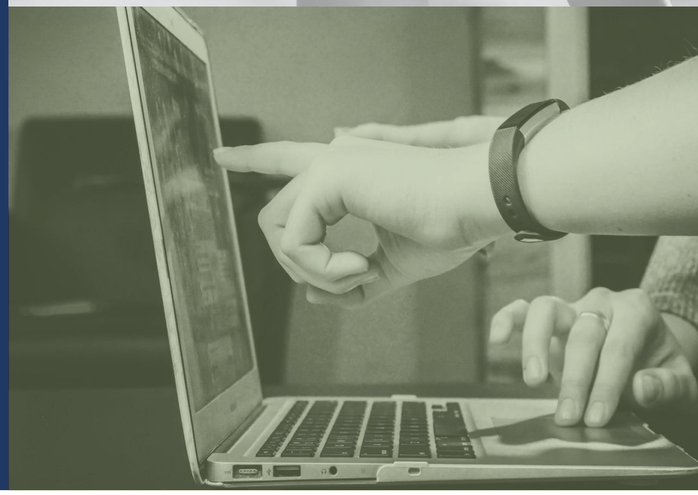
THE CLEANTECH DATA STRATEGY (CTDS)

Tracking Canadian Cleantech Innovation

MARCH 2025



Natural Resources Canada
Ressources naturelles Canada

Canada

Clean Technology Data Strategy (CTDS)

Co-led by NRCan and ISED, in partnership with StatCan.

Renewed in Budget 2024, the strategy informs policy and program design, supports sector growth, and helps decision-makers track the:

1. Socio-economic contributions of Canada's cleantech industry
2. Health and competitiveness of Canada's 'pureplay' cleantech industry
3. Adoption of clean technologies, particularly in natural resource sectors
4. Type, amount, and impact of federal cleantech investments

GoC Cleantech Taxonomy

Clean technologies are defined as:

- Any good or service that remediates or prevents environmental damage, and/or is less polluting or more efficient than equivalent normal products.

StatCan publishes yearly technical reference guide (taxonomy)

- Goods and services-based
- Tracks over 100 clean technology areas

Table 2.b
Renewable /non-emitting electricity and heat production

Industry and sub-industry	Technology area / type of service
Renewable / non-emitting energy supply	
Wind energy	Wind turbine equipment, including nacelles, blades, towers
	Wind turbines
	Switchgears, transformers
	Engineering, installation, maintenance, and architectural services
Bioenergy	Domestic woodstoves, wood pellets, including own use by households and industry
	Biomass-fired industrial boilers
	Anaerobic digesters
	Engineering, installation, maintenance, and architectural services
Geothermal energy	Heat pumps, heat exchangers, other equipment used in geothermal energy systems
	Hydrothermal equipment
	Hot dry rock (HDR) equipment
	Advanced drilling and exploration equipment
	Engineering, installation, maintenance, and architectural services
Hydro energy	Turbines and components for wave/tidal energy
	Turbines and components for run-of-river hydro
	Turbines (Francis, Kaplan, Pelton, propeller) and components for large hydro
	Generators (including components), valves, gates, transformers, switchgear
	Salinity gradient power equipment
	Engineering, installation, maintenance, and architectural services

CTDS Policy Objectives

- Build consensus on common definition of cleantech
- Create foundational data and intelligence on cleantech sector and companies within ecosystem
- Fills in gaps to understanding cleantech sector at the national and provincial level
- Provide evidence-base for better decision-making to drive policy and programs

NRCan's Role in Cleantech Data

- NRCan works with StatCan and ISED to update and strengthen the cleantech taxonomy
- Provide insights and policy guidance to StatCan on the collection and dissemination of macroeconomic statistics on GDP, employment, trade, and various surveys such as the Survey of Environmental Goods and Services
- Lead on the development of comprehensive clean technology data and intelligence at the firm level by:
  - Maintaining a detailed CRM of 6000+ Canadian cleantech firms with over 40 indicators
  - Leveraging administrative data sources (Bloomberg, Pitchbook, CIPO, proactive disclosure)
  - Conducting targeted qualitative surveys which inform barriers and challenges to growth
- Collects and analyzes data to track impacts of government programs that support cleantech – led by the Clean Growth Hub

Firm-Level Classifications

Our CRM tracks over 6000 firms from across the cleantech ecosystem using the following classifications:

Type	Description
Facilitating	Companies that leverage their deep knowledge of the cleantech sector to provide specialized services, enabling the cleantech sector to grow (e.g. green-focused VC)
Pure-Play	Companies whose business model depends entirely or almost entirely on their cleantech activities. They can either be: • "Core" pure-play: those that focus on development and production of clean technology • "Enabling" pure-play: those that focus on the diffusion of clean technology
Diversified	Large multi-divisional corporations with a division or business segment that would fit the definition of pure-play
Mixed	Companies that have a minor portion of their business engaged in developing and/or using technologies that provide environmental benefits

Cleantech CRM Database

In 2022, NRCan developed the first iteration of it's cleantech CRM with over 6,000 firms in ecosystem, 2,500 classified as pureplay cleantech.

Laborious, time-consuming process:

- Using over 100 data sources
- Initial list of 20,000 firms (including duplicates, non-Canadian firms, and firms outside definition)
- Manually researched each firm to ensure it fit within taxonomy
- Firm-level classification as Facilitating, Pureplay, Mixed, Diversified

40 plus indicators collected on each firm:

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- Initial list of 20,000 firms (including duplicates, non-Canadian firms, and firms outside definition)
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Fully updated and audited every 2 years based on detailed and rigorous methodology

- 2025 update currently under way

Ongoing Research Partnerships

- **Established partnerships with federal departments, provinces, academia, and industry associations, leveraging intelligence from CRM and targeted surveys**
- **Examples of co-authored reports or ongoing joint studies:**
  - StatCan: custom tabulations from the LFE on revenues, net-income/loss, R&D expenditure, etc.
  - StatCan (Julio Rosa): research paper on the effects of program support on cleantech innovation (BIGS, SRED)
  - Provincial partners: B.C., Ontario provincial cleantech profiles
- **Current research partnerships:**
  - Carleton University: methodology and firm classification definitions paper
  - Carleton University: cleantech exits, federal and VC funding, IP, and other characteristics of firms that are merged, acquired, or file for bankruptcy
  - StatCan: data on uptake of Class 43.1 & 43.2 ACCA tax credits, pilot study for tracking Canadian ITCs
  - StatCan: research paper on adoption of cleantech and firm productivity
  - Provincial partners: Alberta, Quebec, Nova Scotia provincial cleantech profiles

Looking Ahead: Upcoming Releases & Collaboration

Upcoming Releases (March / April 2025) – publicly available on the CTDS website

- 2025 pureplay cleantech survey results
- Pureplay dashboard – number of cleantech companies by industry and province
- Provincial cleantech profiles for Quebec, Alberta, and Nova Scotia

Future engagement opportunities with the SRN

- Present 2025 survey findings – share key insights and trends
- Present methodology & firm classification definitions research – joint paper with Carleton University

Collaboration opportunities

- Microdata sharing agreements for specific academic research objectives
- Joint analysis and research projects

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