



INVEST IN CANADA

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Canadian Composites Sector

Yves Belliveau

Trade Commissioner

Embassy of Canada to Spain

May, 2014



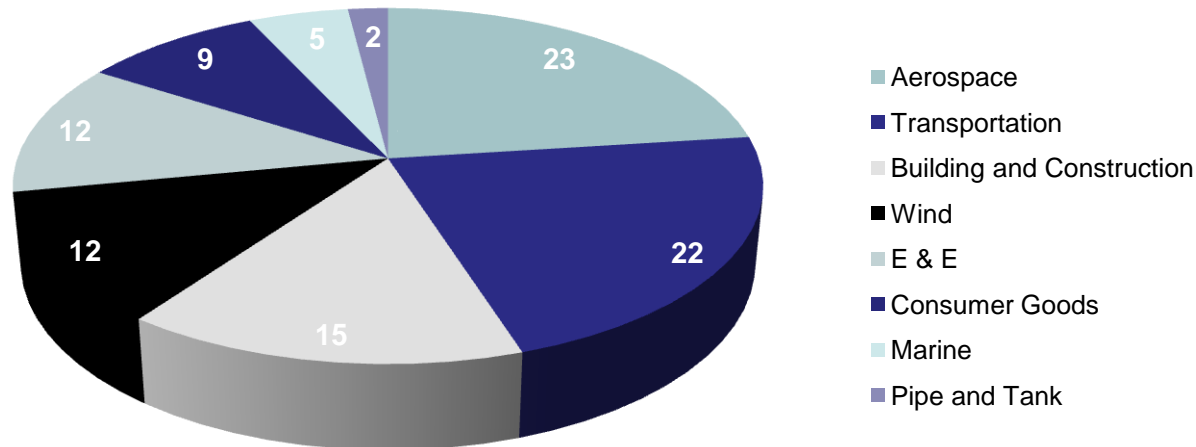
Large Composite Markets

The North American composites market accounts for 36% (€22 billion) of the global composites industry and 35% (3 million metric tons) in volume.

Growing by 6% annually since 1960.

In 2012, the stably high demand from wind energy, aerospace, transportation and construction sectors was the main source of demand in the North American market.

Market Size (%), by Application Value





Composites Cluster Map of Canada

• Canadian Company

◆ Canadian Research Centre or Organization



Strong Receptor Capacity

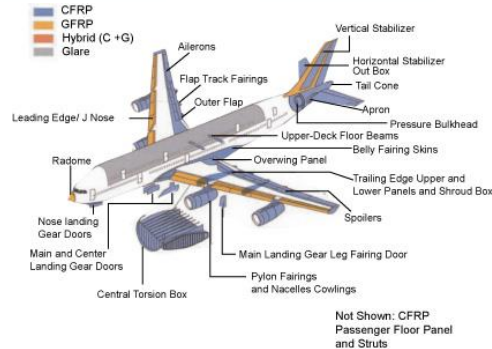
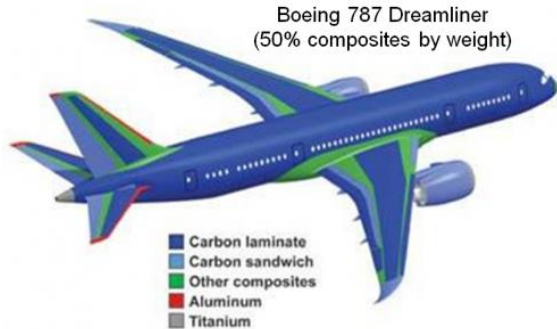
- Diverse, mature industry
- Est. 300 composites companies
- 50,000 employees

Markets

- Aerospace
- Automotive
- Wind (small & large)
- Civil engineering & construction
- Land transportation
- Marine
- Sports equipment & leisure
- Safety & protection
- Pipes and tanks
- Industrial



Aerospace Composite Clusters



- In 2012, Canada's aerospace industry ranked 5th in the OECD (revenues and contributions to GDP)
- 700 companies
- Direct annual revenues of \$21.1 billion and \$41.2 billion across multiple supply chains in Canada
- Three aerospace clusters centred around: Montreal, QC; Toronto, ON; and Winnipeg, MB
- Clusters driven by major integrators like Bell Helicopter, Boeing, Airbus Group and Bombardier
- Each cluster is developing composites expertise through industry-university partnerships and regional, national and international networking

AIRBUS
GROUP



BOMBARDIER
the evolution of mobility





Bombardier : C-Series

- Advance Structural Materials: aluminum fuselage, carbon composite, dry fiber composite (Empennage, Rear Fuselage, Nacelle, Wing).
- Reduce fatigue and corrosion inspections.
- More than 2,000 lbs (900 kilos) in weight saving.
- More than 20% fuel burn advantage.
- Reduced noise.



Orders:

- 2009: 50
- 2010: 40
- 2011: 43
- 2012: 15
- 2013: 34
- 2014: 19

Total to date: 201



Canada-Spain Success Stories

Success Story:

- Aernnova has been chosen for the design, development, tooling, prototypes, certification and fabrication of 40 units* of the central wingbox and tail cones for two models of the C-Series.



AERnnova

BOMBARDIER
the evolution of mobility



Canada-Spain Success Stories

Success Stories:

- ITRB and Avcorp Industries have signed a strategic partnership agreement to integrate Avcorp's manufacturing capabilities with ITRB's engineering expertise
- ITRB working with Composites Innovation Centre and the National Research Council of Canada in European Commission-funded R&D proposals





Automotive Sector

The automotive sector is the largest manufacturing sector in Canada. It produces passenger and commercial vehicles, auto parts and systems, truck bodies and trailers, and machine-tools-dies and moulds.

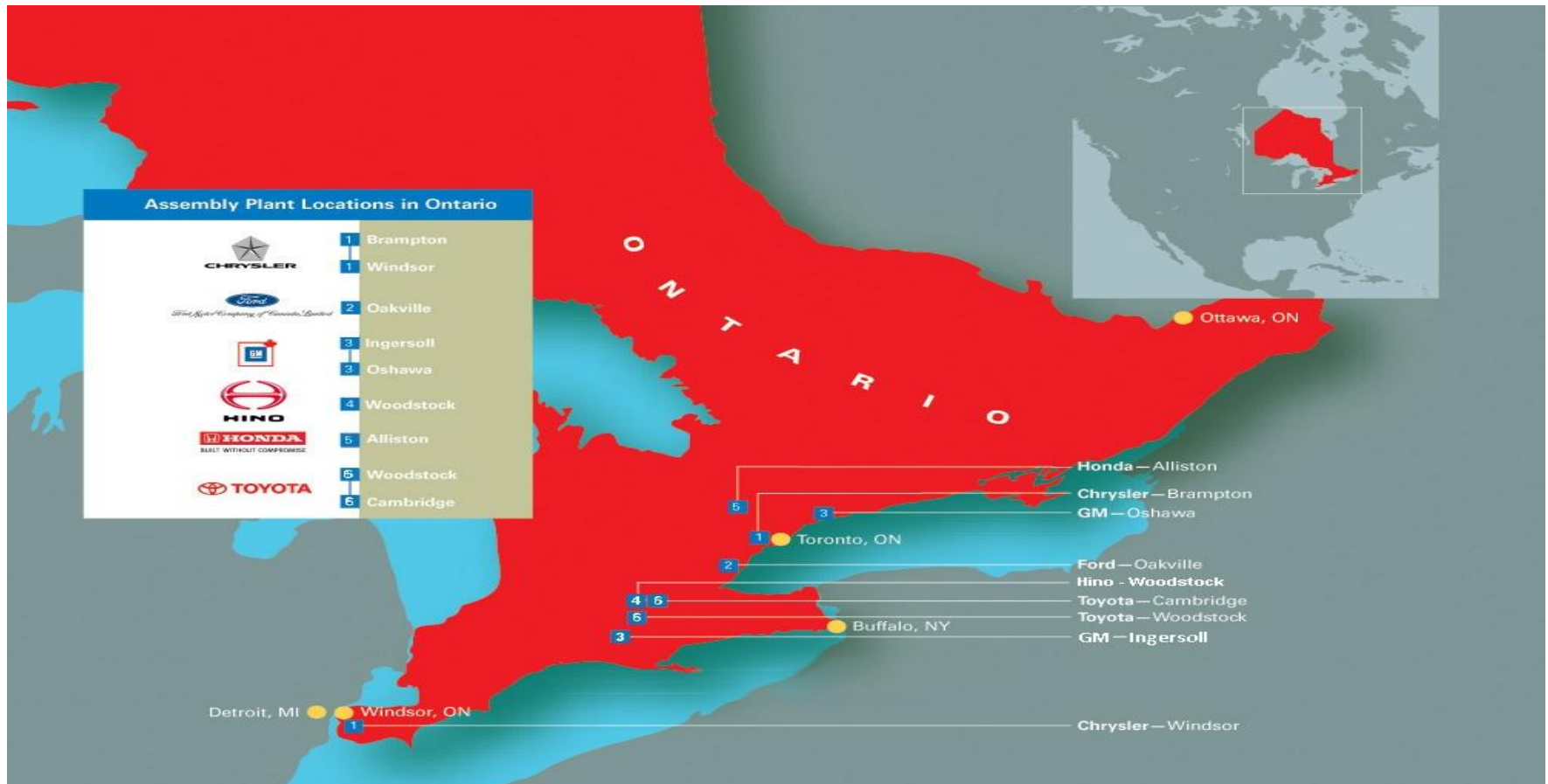
- 12% of manufacturing GDP;
 - \$71.2 billion in revenues;
 - 111,790 in direct employment;
 - 19% of merchandise trade; and
 - 16% of NAFTA vehicle production (2.1 million units).
-
- 350 automotive parts companies in Canada;
 - 1,300 facilities;
 - 57% of parts production is exported.





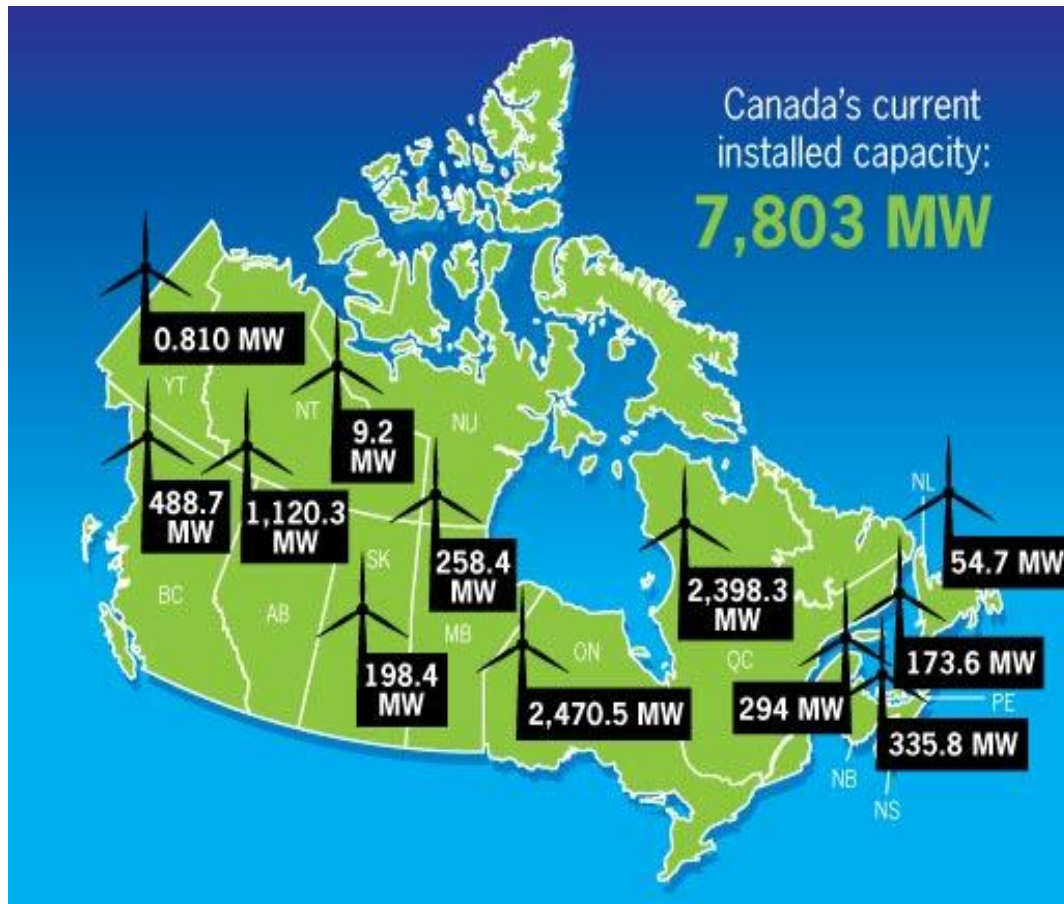
Ontario Automotive Cluster

- 9 passenger and commercial vehicle plants with 2.3M units installed capacity; 85% exported
- 37,450 employed





Growing Wind Energy Market



- Canada is now the 9th largest producer of wind energy in the world.
- Expected to reach 12,000 MW of total installed capacity by 2016.
- Large composite blade manufacturers include: LM Wind Power, Siemens, and others.
- Canada is also a global leader in small wind production (20-50kw)
- Electricity generated from wind is already powering over 1.5 million homes and businesses
- Canada will see an average of 1,500 MW of new projects commissioned annually over the next four years.
- Creating 68,000 additional person-years of employment and attracting \$15 billion in new investment.



Canada-Wide Composite R&D (23 Universities)



UNIVERSITY OF
CALGARY





Commercial Scale Up Infrastructure



Composites Innovation Centre

- The largest composites centre in Canada focused on creating economic growth through the development and transfer of composite materials and manufacturing technologies to industry.”



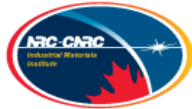
Canadian Light Source Inc.

- \$300M national synchrotron, one of only 25 in the world. Open to commercial use (Saskatoon, SK)



Fraunhofer Project Centre @ Western

- Research centre and industrial-scale test facility focused on composite technologies for weight reduction at Western University (London, ON)



Magna-NRC Composites Centre of Excellence

- Research centre to develop composite technology for the Canadian and global automotive industries (Concord, ON)



UOIT, Automotive Centre of Excellence

- One of the largest and most sophisticated wind tunnels in the world, climate chambers, four-poster shaker, multi-axis shaker table (Oshawa, ON)



Wind Engineering, Energy and Environmental Research Institute (WindEEE)

- World's first large scale 3D wind chamber located at Western University (London, ON). \$23.6M facility linking 16 universities across Canada.



Canada-EU R&D Collaboration

CANNAPE:



- Network of Canadian and European aerospace companies finding collaboration opportunities for European Commission R&D calls (FP7 and Horizon 2020)
- 6 meetings since 2011 (last one in April 2014 in Montreal)
- Next meeting: Farnborough International Airshow 2014

More information:

<https://connect.innovateuk.org/web/cannape>

Or

CDTI point of contact:

Juan Francisco Reyes Sánchez

juanfrancisco.reyes@cdti.es



Canada' Advantages

- Financial Stability
- A highly educated workforce
- A welcome business environment
- Low tax rates
- Market Access
- A great place to work, invest & live
- Duty-free manufacturing tariff regime
- Export competitiveness
- Research & Development
- High Productivity





AECG - CETA

ACUERDO ECONÓMICO Y COMERCIAL GLOBAL (AECG)
COMPREHENSIVE ECONOMIC TRADE AGREEMENT (CETA)





Servicio de Agregados Comerciales

Donde estamos:

En 160 ciudades del mundo

Qué podemos hacer para ayudarles:

- Asistencia en establecer una presencia en Canadá
- Ponerles en contacto con proveedores y socios en negocios, inversión, y en I+D





Canada's Composites Sector

Gracias

Yves Belliveau

Trade Commissioner & Second Secretary
Torre Espacio, Paseo de la Castellana 259D
28046 Madrid, Spain
Tel: +34 91.382.8441

yves.belliveau@international.ga.ca

www.tradecommissioner.gc.ca



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