Canadian Paint and Coatings Association

Association canadienne de l'industrie de la peinture et du revêtement

Canadian Paint and Coatings Industry Real Contributions to Canada's Economy

ORR & BOSS

NOVEMBER 2017

TABLE OF CONTENTS

ORR & BOSS

Orr & Boss Consulting, Incorporated
International Headquarters
10 Shawfield Crescent
Toronto, ON M3A 1S1

Prepared for:

Canadian Paint & Coatings Association
170 Laurier Avenue West
Ottawa, ON K1P 5V5

NOVEMBER 2017

DESIGN: GRIFFINTOWN MEDIA

TABLES AND FIGURES

KEY FINDINGS IN THIS REPORT

This is the first economic impact study of Canada's paint and coatings industry, generally defined as the manufacture and sale of coatings, adhesives, sealants and elastomers or CASE, as it's commonly known in the industry.

The details related to the findings below are outlined in detail throughout this report in terms of the direct, indirect and induced benefits for Canada's economy.

ECONOMIC IMPACT

Direct and indirect economic output	**$ 12.30 billion**
Direct, indirect and induced wages and salaries	**$ 8.35 billion**
Contribution to Gross Domestic Product (GDP)	**$ 4.65 billion**
Total value of product shipments (wholesale)	**$ 4.50 billion**
Federal and provincial taxes paid	**$ 1.75 billion**
Direct, indirect and induced employment	**211,617 jobs**

EMPLOYMENT

Professional Contractors	**24,679**
Manufacturing	**21,434**
Retail Sales	**11,964**
Auto Refinishing	**11,768**
Paint Applicators	**6,043**
Paint Accessories	**5,552**
Raw Material Supply	**2,855**
Freight Movement	**925**
Plant and Equipment	**575**
Paint Recovery and Recycling	**501**

Thank you for your interest in Canada's paint and coatings industry. For questions or further inquiries, please contact CPCA at: ***CPCA@canpaint.com***

Regular Publications for CPCA Members

- *Annual CPCA Insight: Guide and Directory*
- *Monthly Regulatory News Alert*
- *Monthly Business Management & Marketing Alert*
- *Monthly Prime Time News*
- *Quarterly Need-to-Know Updates on Deadlines, Events, Regulations*
- *Regular Bulletins, Submissions, Updates and Press Releases*

CPCA Connects

Follow us
Join our Group
Like us

Subscribe to ***Prime Time News***

Learn more: ***www.canpaint.com***

1. EXECUTIVE SUMMARY

The paint and coatings industry includes a wide range of coatings, adhesives, sealants as well as elastomers, commonly referred to in the sector as CASE. The coatings industry is a key driver of economic activity in Canada with substantial economic impacts generated directly, indirectly and induced. The industry is an important and dynamic part of the nation's economy with a pivotal role in protecting and preserving a vast array of assets and manufactured products. This includes coatings that extend the life of Canada's most critical infrastructure such as pipelines and bridges; a family's most valuable assets such as their homes and automobiles; and everyday goods from chairs to cell phones. More than just the paint on walls and garage floors, there are many highly performing functional coatings that require extensive technology, innovation and R&D. All this is now delivered in an increasingly sustainable industry focused more than ever on product stewardship and sustainability.

The coatings industry generates significant employment in excess of 86,301 jobs, which tend to be higher paying jobs than those in other industries.

While a wide variety of paint and coatings is pervasive in the Canadian economy the coatings industry is often overlooked as a driving economic force with an annual economic impact of **$12.3 billion**. Just about everything that is manufactured has a coating, adding value to every product made with enhancements related to aesthetics, performance or lifespan. **This report focuses on the economic impacts of the coatings industry and reveals the multi-dimensional nature of the sector in Canada.**

The coatings industry generates significant employment in excess of **86,301 jobs**, which tend to be higher paying jobs than those in other industries. The application of paint and coatings products touches many end-use markets such as construction, automotive, oil & gas, mining, wood and metal products, aerospace, machinery, paper, metal containers, coil, transportation equipment and general industrial manufacturing. In many of these end-use applications coatings are critical to the success of that industry.

Paint and coatings companies continue with massive investments in research and development (R&D) generating many innovations and new technologies in product formulations. All have resulted in increasingly more functional coatings for residential, commercial and industrial segments. A strong coatings industry is critical to maintaining and improving Canada's overall economic performance and that strength is reflected in the contribution to Canada's Gross Domestic Product (GDP) estimated at **$4.65 billion annually**.

The industry does not rely on government subsidies, but as one of the most highly regulated sectors in the economy it seeks to have a level playing field on which to compete. If there are to be regulations they must be appropriate regulations. Given the highly integrated nature of the North American economy, especially with that of the United States, the industry seeks greater alignment of regulations between the two countries to facilitate trade flows. This is especially important for Canada with more than half the coatings industry shipments in Canada now imported from the United States. Despite some challenges in this regard the industry continues to deliver substantial economic impacts for Canada as this study reveals.

Economic impacts are defined as changes to an economy as a result of a specific undertaking or activity. With those activities come benefits impacting the size and structure of an economy. This happens as goods and services are produced and purchased resulting in direct inflows of capital for construction of new facilities or delivery of new and better services. **Economic output** relates to the gross revenue of goods or services produced by an economic sector, while **Gross Domestic Product** measures the value of goods and services produced. The 'shipment' of goods noted in this report is defined as goods produced or imported and sold in the Canadian market. It also captures economic activity generated by exports, though exports represent less than ten percent of the total volume.

A summary of the total economic impact of the paint, coatings, adhesives and sealants (CASE) industry is as follows:

Total economic impact of the paint, coatings, adhesives and sealants (CASE) industry includes annual contribution to GDP of $4.65 billion.

- Annual direct and indirect economic output of $12.3 billion
- CASE product shipments of $4.5 billion in 2016, up 4 per cent from 2015
- Adhesives & Sealants product shipments included in the above were $1.3 billion
- Annual direct and indirect employment of 86,301
- Estimated total annual 'direct and indirect' wages and salaries of $2.85 billion
- Average annual paint and coatings wages and salaries was $51,860 in 2016
- Wages and salaries are 18 per cent higher than the national average in Canada
- Annual induced employment of 125,316
- Estimated annual total 'induced' wages and salaries of $5.5 billion
- Annual contribution to GDP of $4.65 billion
- Annual federal and provincial taxes generated is $1.74 billion
- Ontario and Quebec are the leading beneficiaries of the Canadian paint and coatings industry with an estimated 38.8 per cent and 21.5 per cent share of GDP as noted above, respectively
- Manufacturing and sales are the key drivers of economic output, including adhesives and sealants, accounting for 37 percent of the overall economic output and 25 per cent of the overall employment
- Raw material suppliers/distributors, professional coatings contractors, and retail stores combined account for the remaining 63 per cent of overall economic output and 75 per cent of overall employment

Tables 1.1 and 1.2 summarize the data noted above. Table 1.1 provides information on Output, Wages & Salaries and Employment. Table 1.2 provides information, by province, on GDP that includes total taxes collected and induced employment. Output and GDP differ in that **output is the 'cumulative sales revenue at each step of the process' whereas GDP is the 'value-added at each step of the process' and thus represents the unduplicated value of economic activity.**

Table 1.1 **Summary of Economic Impact of the Paint and Coatings Industry**

	Direct	Indirect	Total Economic Impact
Output (millions $)	4,506	7,804	12,310
Wages and Salaries (millions $)	901	1,951	2,852
Employment (number of jobs)	21,435	64,866	86,301

The 'induced' employment is the employment that results from the personal expenditures of people who receive salaries and wages working in the paint and coatings industry. This leads to significant economic benefit for Canada's economy.

Table 1.2 **Summary of GDP, Taxes and Induced Employment**

	Total GDP for CASE industry by Province *(millions)*	Total Taxes Collected *(millions)*	Induced Employment *(number of jobs)*
Ontario	1,802	674	49,615
Quebec	999	411	26,586
Alberta	592	198	17,120
British Columbia	647	228	17,092
Manitoba	208	83	5,713
Saskatchewan	135	48	3,354
Nova Scotia	103	41	2,495
New Brunswick	85	33	2,040
Newfoundland and Labrador	55	18	1,002
Prince Edward Island	21	6	299

The Canadian paint and coatings industry has proven to be a strong and steadily growing industry with an average of 13.7 litres of paint used by each Canadian annually.

The Canadian paint and coatings industry has proven to be a strong and steadily growing industry with **an average of 13.7 litres of paint used by each Canadian annually**. A highly regulated sector, paint and coatings has shown tremendous responsibility in cooperating with all levels of government to ensure products are safe to human health and the environment, while still performing to the standards expected by customers.

The industry reduced VOC emissions by more than 75 percent over the past ten years with 95 percent of architectural coatings now water-based.

Recent federal government testing of architectural paint products revealed strong industry compliance with VOC regulations in Canada. The industry reduced VOC emissions by more than 75 percent over the past ten years with 95 percent of architectural coatings now water-based. As part of the industry[1]'s ongoing sustainability efforts it also recycled more than 27 million kilograms of paint in Canada in 2016 and this number continues to grow annually. **CPCA urges the entire industry, including non-members and end-users, to continue maximizing economic benefits in a sustainable manner and to ensure full compliance with existing laws.**

CPCA works closely with all levels of government to help develop appropriate regulations for industry and to promote compliance with existing regulations thereby ensuring strong and sustainable industry brands for the future.

95%
of architectural coatings now water-based

27 million
kilograms of paint recovered in Canada in 2016

75%
reduction of VOC emissions from coatings over the past 10 years

PAINT AND COATINGS PRODUCTS ARE NOW SUBSTANTIALLY SAFER TO BOTH HUMAN HEALTH AND THE ENVIRONMENT.

2. INTRODUCTION

The Canadian Paint and Coatings Association (CPCA) engaged Orr & Boss to determine the estimated economic impact of the Canadian paint and coatings industry. The objective was to obtain a greater understanding of the current economic contributions generated by industry outputs using key economic indicators such as contributions to GDP, government taxes paid and employment generated. The key types of impacts considered are noted below.

The objective of this report was to obtain a greater understanding of the current economic contributions generated by industry outputs using key economic indicators such as contributions to GDP, government taxes paid and employment generated.

Direct Impacts: Total employment, output, and GDP directly generated by the paint and coatings manufacturing industry, with adhesives and sealants manufacturing calculated separately and detailed in this report.

Indirect Impacts: Other economic impacts are generated by the industry as a result of the purchase of goods and services, such as raw material supplies, to produce a wide range of products and the downstream impacts from related sales and applications.

Induced Impacts: Personal expenditures by people or firms having received wages and salaries or revenues in support of business operations for purposes such as facility construction, facility operations, event staging, production of indirect goods and services, etc.

Data Sources

Data presented in this report was collected from several sources. The major ones are as follows:

- Interviews with CPCA member companies
- Government data sources such as Statistics Canada and Industry Canada
- CPCA data collected from member companies

Orr & Boss Consulting Incorporated

Orr & Boss Consulting Incorporated, headquartered in Toronto, is a leading management consulting firm to the paint and coatings industry. Orr & Boss Consulting, founded in 1947, is an experienced, highly respected international management, marketing and strategic planning consulting firm. For more than three decades, Orr & Boss has specialized in the coatings industry, and has worked for many of the leading coatings manufacturers and the raw material suppliers to those companies. It has also worked for many of the smaller regional formulators and suppliers across Canada and around the globe.

Impact Study Overview

Orr & Boss Consulting Incorporated (O&B) was engaged by the Canadian Paint and Coatings Association (CPCA) to estimate the direct and indirect economic impacts of the Canadian paint and coatings industry. For the purposes of this study, the Canadian paint and coatings industry consists of companies engaged in the development, manufacture and distribution of a wide variety of paint and coatings products and adhesives and sealants products that are best categorized as CASE (coatings, adhesives, sealants and elastomers). It includes data for both members and non-members of the Association. CPCA represents member companies constituting 90 percent of the volume of paint and coatings sold in Canada.

In Canada, CPCA members have more than 260 paint manufacturing establishments, own and operate more than 3,000 retail stores, supply products to more than 5,000 retail stores and 7,500 auto body shops.

Since 1913, CPCA has represented Canada's major paint and coatings manufacturers and their industry suppliers and distributors in three primary product categories: architectural, industrial and automotive. These members include large national and multinational companies as well as small- and medium-sized enterprises (SME), which have a long and established presence in the Canadian market. Some of the SMEs are family-owned companies involved in niche markets for many decades. In Canada, CPCA members have more than 260 paint manufacturing establishments, own and operate more than 3,000 retail stores, supply products to another 5,000 retail stores and 7,500 auto body shops. This represents product shipments for paint and coatings of $3.2 billion in 2016 and annual direct and indirect sales in excess of $12.3 billion, employing directly and indirectly over 86,000 employees.

A number of CPCA member companies are also engaged in the development, manufacture, distribution and use of adhesives and sealants (A&S). A&S products are normally sold beside paint in retail establishments and are included in the "paint aisle" sales in more than 8,000 retail sites across Canada. Twenty-five CPCA member companies manufacture or distribute adhesives and sealants products. Thus, the A&S sector is included in the study, representing $1.3 billion in shipments annually and assessed separately from paint and coatings.

The major change in the coatings industry during the last 40 years has been the adoption of new coating technologies with extensive investment in R&D establishments by large, small and medium-sized enterprises. These investments have driven innovation in product development and created a highly competitive industry. Until the early 1970s most coatings were conventional low-solids, solvent-based formulations and water-borne (latex) paints. These were used in architectural applications accounting for only 20% of the total. In the late 1970s the federal government introduced codes of practice guidelines for volatile organic compounds (VOCs), which were emission controls with several focused on industrial coatings operations. This initiative stimulated further continuous development by the industry of low-solvent and solvent-less coatings that further reduced VOC emission levels from coatings. Health and environmental concerns, energy conservation and rising solvent costs were also contributing factors to this shift.

These new coatings technologies included waterborne coatings (thermosetting emulsion, colloidal dispersion, water-soluble), high-solid coatings, two-component systems, powder coatings, and radiation-curable coatings. **Recent regulations in 2010 for lower VOC concentrations in both architectural and automotive refinish coatings led to the nearly full elimination of solventborne coatings for architectural use and the increased use of waterborne coatings for automotive refinish use.** Water-based coatings now represent more than 95 percent of the total architectural volume. Total VOC emissions from both architectural and automotive paint and coatings were reduced by a further 75 percent over the past seven years as a result of new federal government VOC regulations introduced under CEPA (*Canadian Environmental Protection Act*) in 2010.

Coatings provide two primary functions—decoration and protection— both of which are of considerable economic importance. About 45 per cent of the coatings produced worldwide are used to decorate and protect new construction as well as to maintain existing structures, including residential homes and apartments, public buildings, plants and factories. These are referred to as "**architectural or decorative**" coatings or simply as "paints." Another 40 per cent of coatings are used to decorate and/or protect industrial products called "**product finishes**." Without coatings, product life cycles are shortened and in some cases drastically reduced. Many products made for general consumption would not even be marketable due to environmental degradation or wear and tear or simply lack the necessary aesthetic appeal. Most of the remaining coatings, called "**specialized purpose coatings**" are used for applications such as traffic paints or markings, vehicle refinishing, high-performance coatings for industrial plants and equipment, and the protection of marine structures and vessels.

Key drivers of the coatings manufacturing industry are generally those driving the overall Canadian economy (e.g., construction, transportation, energy, etc.).

The CASE industry in Canada consists of raw material suppliers, raw material distributors, manufacturers, wholesalers, retailers (home centers, lumber and building suppliers, paint and hardware stores), professional contractors, and end users. **The approach of this study was to estimate the economic activity in terms of output and the salary and wages generated by employment for all coatings, adhesives, sealants and elastomers used for industrial and commercial activities in Canada.**

Paint and coatings products are used in many different end-use segments, on many different substrates, whether for metal, wood, plastic, paper, glass, rubber, ceramic, concrete or composite with a vast and diverse range of products. In fact, almost all end-use segments use some form of paint, coatings, adhesives or sealants in manufactured finished goods. **Thus, the key drivers of the coatings manufacturing industry are generally the drivers of the overall Canadian economy (e.g., construction, transportation, energy, etc.).** Key segments in the Canadian paint and coatings industry include: architectural coatings, automotive OEM, automotive refinish, coatings for other means of transportation, industrial maintenance and protective, wood coatings, powder coatings, coil coatings, packaging coatings, general industrial, and marine coatings.

3. TYPES OF PAINT AND COATINGS

The following are definitions of the various types of coatings used in every aspect of life including homes, roads, buildings, infrastructure, planes/trains and automobiles, ships and more. The industry goes way beyond simply colour and encompasses many types of coatings used on every type of surface or substrate imaginable for many different value-added purposes.

Automotive OEM: These are paints applied to passenger cars, light trucks and vans (light commercial vehicles) at assembly plants as well as by Tier 1 suppliers, which include the following applications:

- **Phosphate**: A crystalline conversion coating formed on ferrous metal substrates, protecting the vehicle's body against corrosion effects and preparing the surface for the E-coat (pre-treatment).
- **Electro Coat Paint Operation (E-coat)**: A method of painting that uses electrical current to deposit the paint, also called electro-deposition. The process is divided into four zones: pre-treatment; electrocoat bath and ancillary equipment; post rinses; and bake oven.
- **Primer**: The first coat to be applied that acts as a leveler and a protector of the body, facilitating the application of the base coat.
- **Basecoat**: The second coat applied, after the primer, which contains visual properties of colour and effects, generally referred to as the "paint" of a car.
- **Pigments**: Adds colour and are subdivided into three categories: solid, metallic and pearlescent.
- **Clearcoat**: A glossy, transparent coating sprayed on top of a coloured basecoat, forming the final interface with the environment. Its key elements must be durable to resist abrasion and chemically stable enough to withstand UV light. It can be solvent borne or water-borne.

Canada has shown leadership in reducing VOC content in refinish coatings with tighter Canadian regulations in effect since 2010, similar to those in California and Europe.

Automotive Refinish: These coatings protect a vehicle's body from external elements like extreme temperatures and UV radiation and from deterioration caused by foreign particles such as stones and other debris. The materials are friendly to the environment and are either water-borne products or low solvent products. **Canada has shown leadership in reducing VOC content in refinish coatings with tighter Canadian regulations in effect since 2010, similar to those in California and Europe.**

Coil coating: Coil coating is the continuous and highly automated industrial process for efficiently coating coils of metal. Formed components can have many holes, recessed areas, valleys, and hidden areas that make it difficult to clean and uniformly paint or coat. The coil coating process according to EN 10169, is a process in which an (organic) coating material is applied on rolled metal strips in a continuous process, which includes cleaning if necessary or chemical pre-treatment of the metal surface. This can either be

done to one or two sides, single or multiple application of (liquid) paints or coating powders, which is subsequently cured or/and laminated. Coil coated metal (often called pre-painted metal) is made more durable and more corrosion-resistant than any other post painted metal.

Architectural: Also called decorative paint used to paint the interior or exterior of homes. These paints are purchased and applied by homeowners (Do-It-Yourselfers or DIYers) or professional contractors. These include wood coatings applied on-site in a residential or commercial building; varnishes that can be clear or matte; and lacquers with metallic effects based on dual-component polyurethane coating materials or coatings made specific to the client's needs.

General Industrial Finishes: Different industry sectors require finishes for their products such as steel, other metal, and plastic product manufacturers; automotive spare-parts vendors; heavy industrial machinery and transformer producers; metal furniture makers; and appliances. Finishes range from epoxy based and heat-resistant primers and varnishes to undercoats and primers as well as air-drying varnishes and enamels, and air-drying or low-bake enamels. All such ranges are developed to withstand internal and external environmental conditions as required.

Industrial Maintenance (IM) and Protective Coatings (PC): Used for their protective and aesthetic properties they are used primarily for corrosion control of steel structures like bridges, underground pipelines and offshore platforms. They are also used in the oil & gas, mining, paper, pharmaceutical industries as well as many other applications like infrastructure project and power generation plants. Most common types of industrial coatings include inorganic zinc, phosphate and physical vapour deposition. Polymers used in these coatings are fluoropolymer, polyurethane, epoxy and moisture-cure urethane.

Antifouling coatings have contributed greatly to reducing green-house gas emissions by decreasing the "drag" on ocean-going vessels by as much as 20 per cent, thereby reducing fuel consumption, GHG emissions and related costs.

Marine: These coatings are waterproof, protective layers that fight corrosion and fouling of ships, ferries and other ocean-bound materials. Coatings include clear, base and top coats; paints, primers, varnishes and stains; inks, marking materials and sealers or surface sealants. They are categorized according to technology (e.g. laser fusing and laser marking, film drying and air setting, reactive or moisture curing, UV radiation) and are designed for specific substrate materials (e.g. aluminum, fabrics, bitumen, rubber, concrete). Marine paints include epoxy primers and sealers, epoxy fairing compounds and wood finishing systems used on boats and ships to provide protection as well as improve the aesthetic appeal of the product. Also, marine paints include antifouling coatings, which guard against biofouling and the transporting of invasive species. **Generally, antifouling coatings have contributed greatly to reducing green-house gas emissions by decreasing the "drag" on ocean-going vessels by as much as 20 per cent, thereby reducing fuel consumption, GHG emissions and related costs.**

Packaging Finishes: Water-based and Ultraviolet (UV) coatings offer matte or glossy finishes. Water-based coatings are less expensive, and some are used to ensure food contact safety upon approval by food regulatory agencies. UV coatings are costlier but more advantageous as the finishes are more pronounced and brighter colours. They protect against scuffing and abrasions and come with more options like scents, textures and fibres.

Powder: Available in different chemistries and systems to provide protective and decorative finishes for various end uses, especially for metal objects, MDF, glass and plastics. They do not contain solvent, have little impact on the environment—emit no VOCs—produce thicker coatings without risk of sagging, and provide excellent paint finishes.

Powder resins used in transportation offer protection from corrosion, abrasion, temperature oscillation, chemicals, and weathering.

Transportation: These paints and coatings are applied to railcars, airplanes, helicopters, heavy-duty trucks, buses, and other transportation vehicles. Water-borne, solvent-borne or powder resins are offered for transportation applications with consistency in colour, brand and styling. The resins offer protection from corrosion, abrasion, temperature oscillation, chemicals, and weathering.

Industrial Wood Finishes: Industrial wood coatings are applied at wood product manufacturing factory locations by manufacturers of furniture manufacturers, trim & paneling, flooring plants, and cabinets. These include the following:

- **Surface**: Clear and highly durable coatings that require little maintenance and include varnish, shellac and lacquer enhancing the wood's colour and grain, adding warmth to its appearance
- **Natural**: Clear finishes that protect and add warmth, shine and character to wood
- **Pigmented**: Non-clear finishes that resemble paint are offered in glazed or distressed versions
- **Penetrating**: Oil is used to penetrate the wood grain, leaving no surface coating or film but requiring more maintenance than a surface finish
- **Waxing**: Seals and protects wood, used to revive an old finish or as a finish itself. It can be applied over a penetrating finish
- **Staining**: Enhances true colour of wood or used to make appearance uniform. Can be clear or pigmented
- **Glazing/Toning**: Used to highlight the wood's details, adding depth to the colour or "aging" the finish
- **Picking/Liming**: Used to accentuate the wood grain through two contrasting colours (base and second colour are rubbed into the grain)
- **Bleaching**: Lightens the wood's natural colour or removes discolouration caused by moisture
- **Distressing**: Used to age or add interest to the finish

The paint and coatings industry touches many aspects of economic, industrial, and everyday life in Canada.

Adhesives: A substance that sticks to the surface of an object, such that surfaces become bonded. It is used interchangeably with cement, glue, mucilage or paste. Its use offers various advantages including being able to bond different materials together using a more cost-efficient mechanized process, increased design flexibility, and improved aesthetic design. Adhesives can be made naturally or synthetically.

Sealants: Used to block the passage of fluids through the surface, joints or openings in materials. Also known as adhesive-sealants or structural sealants, they may be permanent or temporary, strong or weak, flexible or rigid. They are effective in waterproofing processes and provide thermal and acoustical insulation. Most popular sealants are anaerobic acrylic sealants because they cure in the absence of air. Surface sealants need air to cure and prevent air, gas, noise, dust, fire, liquid or smoke from penetrating barriers. Key sealant properties include adhesion, insolubility and corrosion resistance.

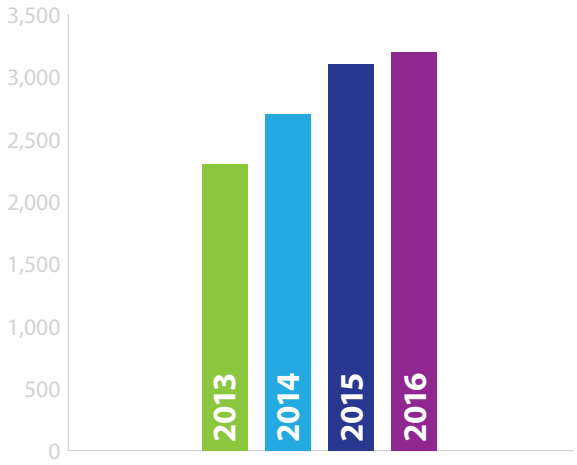
There are other sub-segments of the paint and coatings market in addition to the ones listed above. As can be inferred from this list, the paint and coatings CASE industry touches many aspects of economic, industrial and everyday life in Canada.

4. PAINT AND COATINGS INDUSTRY VALUE CHAIN

In 2016, Canadian paint and coatings industry shipments were estimated to be $3.2 billion. This includes sales of paint at the paint company level and all paint sold into the Canadian market whether or not it is manufactured in Canada or imported into Canada. The market grew at a 4 per cent rate from 2015. **Adhesives and sealants are dealt with separately in Section 6 of this report.**

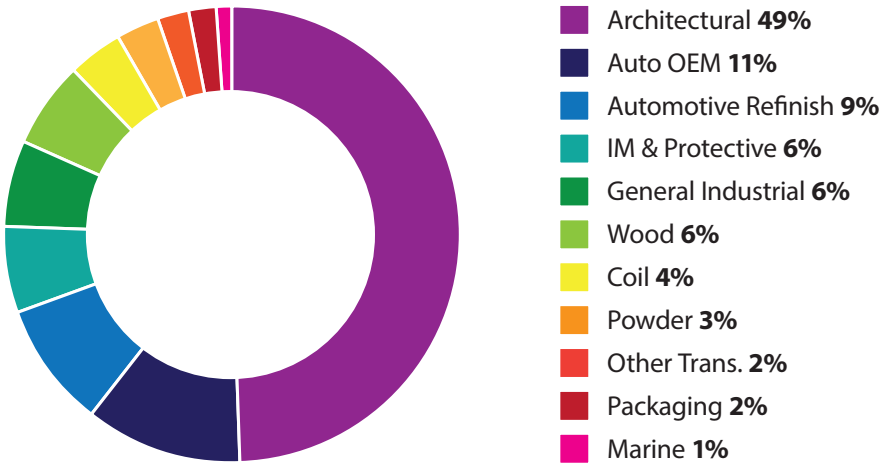
The Canadian paint and coatings market grew at a 4% rate from 2015 over 2016.

Figure 4.1 **Size of the Canadian Paint and Coatings Market**



The key segments of the Canadian paint and coatings industry are Architectural, Automotive OEM and Automotive Refinish coatings. These three segments account for nearly 70 per cent of the value of the market. Other key segments include Industrial Maintenance and Protective Coatings (IM & PC), General Industrial, Wood, and Coil. Figure 4.2 and Table 4.3 provide a breakdown of the Canadian paint and coatings market. The data presented is based on sales at the paint company level.

Figure 4.2 **2016 Canadian Paint and Coatings Market Value ($)**



In 2016, Canadian paint and coatings industry shipments were estimated to be $3.2 billion.

Table 4.3 **Canadian Paint and Coatings Market**

	Volume *(millions of litres)*		Value *(millions of $CAD)*	
	2015	**2016**	**2015**	**2016**
Architectural	264	273	1,502	1,573
Auto OEM	38	40	348	365
Automotive Refinish	14	14	282	290
IM & PC	30	30	202	202
General Industrial	34	34	192	198
Industrial Wood	34	35	184	193
Coil	16	16	121	125
Powder	16	16	84	88
Packaging	15	15	66	67
Other Transportation	8	8	71	73
Marine	3	2	28	28
Total	**472**	**483**	**3,080**	**3,202**

KEY PLAYERS IN THE INDUSTRY

Paint Manufacturers: These are the companies that actually manufacture the paint and coatings. Some of these companies have plants in Canada while others manufacture in the United States or elsewhere and import them into Canada. In either case, they likely have locations across Canada to manufacture, warehouse and distribute coatings.

Raw Material Suppliers: These are the companies that supply raw materials to paint and coatings companies in Canada. Many of the Canadian paint and coatings raw material suppliers are multinational companies with plants located around the world. In many cases, these companies produce raw materials outside of Canada but have sales and administration offices within Canada as well as warehouses. In other cases, the raw material suppliers manufacture the raw materials in Canada. Examples include calcium carbonate production, titanium dioxide production, and packaging materials (paint cans, lids and labels).

Raw Material Distributors: In some cases, raw materials are sold to paint and coatings manufacturers not by the raw material manufacturers but by distributors who purchase raw materials from raw material manufactures or international distributors. They then warehouse them, formulate certain batch mixtures in some cases and sell directly to Canadian paint and coatings manufacturers. For the purposes of this study, the distributors are included in the raw material supplier data.

Paint Accessories and Allied Products: In addition to the paint sold and consumed in Canada, there are a host of ancillary products that are needed to apply paint. These include brushes, rollers, tape, sand paper, and many other items. Some of these items are manufactured in Canada while others are imported, warehoused and distributed in Canada. In either case, they are contributing to the economic output in Canada.

Paint Stores and Retailers: Paint companies sell their product to their customers in a variety of ways. Some paint companies have corporate owned stores where the paint companies own and operate retail stores. In other cases, the paint is sold through independently owned and operated paint stores. These are all 'retail' outlets and fall into several categories including hardware stores like ACE and Home Hardware, big box stores like Home Depot and Lowes, mass merchants like Walmart and various Lumber & Building supply stores. Some privately owned retailers are also 'brand owners,' which have operating agreements with paint manufacturers for private label products.

Besides the general public who regularly purchase paint for DIY projects, there are three main groups of paint users in Canada: 1) trade contractors, 2) professionally trained applicators, and 3) auto refinishing body shops.

Paint Users: Besides do-it-yourselfers, or the general public who regularly buys paint, there are three main groups of paint users in Canada as follows: 1) contractors, 2) professionally trained applicators, and 3) auto refinishing body shops. **Contractors** buy the paint from paint stores and/or retailers under contract to a business or homeowner and apply the paint or coating to various types of substrates. Most of these contractors specialize in painting homes for individual homeowners. In addition to home painting contractors, there are large architectural/industrial contractors that specialize in large commercial and institutional jobs and in industrial maintenance painting. These include contractors who specialize in applying paint and coatings at manufacturing plants like chemical and petroleum plants, paper plants, industrial building sites, and other manufacturing plants. Examples of structures painted or re-painted include tanks & other equipment, commercial or plant flooring, bridges and buildings, and boats. Also, there are **professionally trained applicators** who work in a factory setting applying paint to a product, such as people employed at an automotive assembly plant who work in the paint shop; furniture manufacturing facility, applying paint to furniture or wood fixtures; or paint applied at other OEM manufacturing facilities for products such as heavy equipment, computers, sporting goods, containers, machinery, pipes, etc.

Among the final major user of paint and coatings in Canada are the 7,500 **automotive refinishing body shops**. The body shops buy paint from either the paint companies directly or through distributors, sometimes referred to as jobbers in the body shop industry, and apply paint in an aftermarket setting to cars and trucks. Most often the paint is applied after a collision occurs.

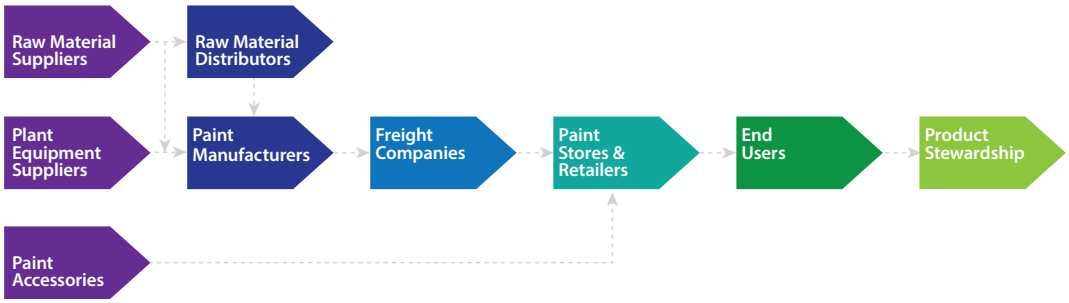
Plant Equipment: Similar to raw material suppliers, plant and lab equipment suppliers sell to paint companies manufacturing paint and coatings in Canada. Examples include tanks, pumps, piping, conveyors, cans, totes, packaging materials and quality control and quality assurance lab equipment.

The paint and coatings industry supports ongoing stewardship initiatives, which are now an integral part of the circular economy approach to handling products.

Freight Companies: Freight companies are employed across Canada to ship product across the country. These companies move the paint from the manufacturing or warehouse sites to the actual retail or paint store locations. Paint manufacturers and suppliers or distributors also have their own fleets.

Product Stewardship: The Canadian paint and coatings industry is a leader in the management of paint waste. Throughout Canada there are organizations that specialize in the handling and recycling of unused paint products on behalf of the manufacturers or brand owners. The paint and coatings industry supports these ongoing stewardship initiatives, which are now an integral part of the circular economy approach to handling products. Examples of these organizations include Éco-Peinture, Product Care and Alberta Recycling Management Authority.

Figure 4.4 **Paint and Coatings Value Chain**



PaintCare™ was an early adopter of a circular economy approach for leftover, postconsumer paint. Product stewardship is a product-centred approach to environmental protection. It calls on those in the product lifecycle—manufacturers, retailers, users, and disposers—to share responsibility for reducing the environmental impacts of products. It is a market-based product stewardship program that **reduces** environmental impacts and needed resources for production, **reuses** recycled content and packaging, and **recycles** leftover paint resources. The three primary not-for-profit program operators for paint recovery in Canada are Product Care Association operating in 8 provinces, Éco-peinture in Quebec and Alberta Recycling Management Authority in Alberta.

5. ECONOMIC IMPACT OF PAINT AND COATINGS

In this section of the report, the economic impact of the Canadian paint and coatings industry was categorized into two types of economic impact. The **direct impact** or the economic impacts resulting from business activity by coatings companies themselves, which is the revenue generated by those companies. The **indirect impacts** take into account the "multiplier" effect of the coatings industry in Canada. When paint and coatings companies procure raw materials, they generate economic activity by their raw material suppliers and distributors. Also, when the end-users of paint and coatings buy the products, economic activity is generated at the paint store or retailer end of the supply chain. At all these points in the value chain, employment is generated with attractive wages and salaries paid in the various segments. The output is the total sum of all economic activity from both the direct and indirect impacts along the supply chain. **Section 7 of the report will investigate the impact on GDP, tax revenue and other induced benefits.**

Paint Manufacturers

The size of the Canadian paint and coatings market is estimated to be $3.2 billion based on shipments at wholesale prices.

The size of the Canadian paint and coatings market is estimated to be $3.2 billion based on shipments at wholesale prices. Ontario and Quebec are the leading provinces accounting for 59 per cent of the employment and 61 per cent of the revenue. These two provinces account for 61 per cent of the population and 58 per cent of the total GDP of Canada.

Table 5.1 **Paint Manufacturers Employment and Revenue**

	Paint Company Employment	**Paint Company Revenue** *(millions CAD)*
Ontario	7,283	1,432
Quebec	3,041	598
Alberta	2,076	408
British Columbia	2,039	401
Manitoba	651	128
Saskatchewan	396	78
Nova Scotia	339	67
New Brunswick	267	53
Newfoundland and Labrador	147	29
Prince Edward Island	41	8
Total	**16,279**	**3,202**

The total chemical raw material and packaging items sold into the Canadian paint and coatings market is estimated at $1.1 billion/yr.

Raw Material Suppliers

The total chemical raw material and packaging items sold into the Canadian paint and coatings market is estimated at $1.1 billion/yr. It is estimated that the employment created by this expenditure on raw material supply is 2,029 jobs. As with most parts of the Canadian paint and coatings industry, Ontario and Quebec are the key provinces where the economic activity is generated by strong clusters of companies in the paint and coatings industry. These two provinces combined account for about two-thirds of the total paint related revenues and employment.

Table 5.2 **Raw Material and Packaging Supplier Employment and Revenue**

	Paint Related Employment	**Paint Related Revenues** *(millions CAD)*
Ontario	838	453
Quebec	493	266
British Columbia	293	158
Alberta	227	123
Manitoba	57	31
Saskatchewan	47	25
Nova Scotia	32	17
New Brunswick	31	17
Newfoundland and Labrador	11	6
Total	**2,029**	**1,095**

Orr & Boss estimates the total spending on paint plant and lab equipment in Canada is $81 million annually.

Paint Equipment Manufacturers

There are a number of plant and lab equipment suppliers in Canada. These include companies that manufacture and install tanks, pumps, grinders, mixers as well as lab equipment like color matching software, filtration equipment, gloss or density or viscosity meters, spectrophotometers, and other lab equipment.

Orr & Boss estimates the total spending on this type of equipment in Canada is $81 million annually. The plant and lab equipment expenditure is spread out across the provinces in a similar proportion to the industry as a whole. The following annual breakdown for equipment is provided in Table 5.3.

Table 5.3 **Paint Plant and Lab Equipment Suppliers Employment and Revenue**

	Plant & Lab Equipment Employment	**Plant & Lab Equipment Revenues** *(millions CAD)*
Ontario	184	36.8
Quebec	77	15.4
Alberta	52	10.5
British Columbia	51	10.3
Manitoba	16	3.3
Saskatchewan	10	2.0
Nova Scotia	9	1.7
New Brunswick	7	1.3
Newfoundland and Labrador	1	0.1
Total	**407**	**81**

For every $1.00 spent on paint manufacturing at the retail level, there is $0.22 spent on paint accessories and allied products.

Paint Accessories and Allied Products

Orr & Boss estimates that the total sales and employment of Paint Accessories and Allied Products, which includes brushes, rolls and other paint related items like tape and sand paper to be $703 million and 5,552 jobs. This is based on using a ratio of 0.22:1 for paint accessories and allied products to paint sales. For every $1.00 spent on paint manufacturing at the retail level there is $0.22 spent on paint accessories and allied products. The revenues and sales were spread across the provinces based on actual paint company sales, as shown in Table 5.4.

Table 5.4 **Paint Accessories and Allied Product Employment and Revenue**

	Paint & Allied Product Employment	**Paint & Allied Product Revenues** *(millions CAD)*
Ontario	2,404	304
Quebec	988	125
British Columbia	738	93
Alberta	705	89
Manitoba	250	32
Saskatchewan	194	25
Nova Scotia	111	14
New Brunswick	78	10
Newfoundland and Labrador	67	8
Prince Edward Island	17	2
Total	**5,552**	**703**

Orr & Boss estimates that the paint industry in Canada spends $131 million per year on freight, which results directly in 657 jobs.

Freight Companies

The transportation of raw materials, packaging items, paint plant and lab equipment suppliers, paint accessories and allied products, and finished paint also generates economic activity and employment across Canada. Orr & Boss estimates that the paint industry in Canada spends $131 million per year on freight, which results directly in 657 jobs. As with other data presented in this report, the employment and revenue figures are those that are generated from economic activity 'directly' in the paint and coatings industry only. The freight expenditure estimate is based on data collected by CPCA, which provides the average freight spent as a percent of revenue for the paint and coatings industry.

Table 5.5 **Freight Company Employment and Revenue**

	Freight Company Employment	**Freight Company Revenues** *(millions CAD)*
Ontario	297	58.7
Quebec	125	24.5
Alberta	85	16.7
British Columbia	82	16.4
Manitoba	26	5.2
Saskatchewan	16	3.2
Nova Scotia	14	2.7
New Brunswick	11	2.2
Newfoundland and Labrador	1	1.2
Prince Edward Island	1	0.3
Total	**657**	**131**

Paint Retail Stores

There are three types of paint stores. The first is the **corporate owned store**, which are retail stores owned and operated by the paint manufacturers or brand owners with recognizable storefronts across Canada. These can be multinational manufacturers, most of which are publicly traded companies operating worldwide or privately held, Canadian-owned and operated stores. The output and the employment generated by these stores are included in Table 5.1 above (Paint Manufacturers Employment and Revenue). The second type of paint store is the **independently owned and operated paint store** or dealer buying paint from the paint manufacturer and selling to customers such as contractors, home owners and various types of applicators noted herein.

In addition to the stand-alone paint stores there are several other categories of retailers selling paint and coatings. These retailers fall into several categories and include **hardware stores** like ACE and Home Hardware; home centres or **'big box' stores** like Home Depot and Lowes; **mass merchants** like Walmart and Canadian Tire; and various **lumber & building supply stores**. The total number of employees and output generated by paint stores and retailers is 11,022 and the revenue generated is $1.477 billion. The data was generated using third party sources and confirmed through interviews with industry executives.

The total number of employees and output generated by paint stores and retailers is 11,022 and the revenue generated is $1.477 billion.

Table 5.6 **Paint Store and Retailer Employment and Revenue**

	Paint Retailer Employment	**Paint Retailer Related Revenues** *(millions CAD)*
Ontario	4,974	582.4
Quebec	2,652	386.4
British Columbia	1,253	189.1
Alberta	1,126	134.5
Manitoba	276	51.0
Saskatchewan	207	43.4
Nova Scotia	203	29.8
New Brunswick	164	28.0
Newfoundland and Labrador	129	23.6
Prince Edward Island	38	8.6
Total	**11,022**	**1,477**

Painting contractors generated revenue of $1.78 billion and provided employment for 17,750 people.

End Users

There are three sets of major end users: contractors, body shops, and applicators. **Painting contractors** are trades people who buy paint and apply it to a surface or substrate and who are compensated by the owner of the structure. Often the contractors paint individual homes or residences. There are also contractors who apply paint in an industrial setting. For example, chemical companies will often hire contractors to paint or repaint tanks, piping, and other equipment at a chemical plant. Table 5.7 provides the data for contractors with revenue generated at $1.78 billion and employment at 17,750 jobs.

Table 5.7 **Painting Contractors Employment and Revenue**

	Paint Contractors Employment	**Paint Contractors Revenue** *(millions CAD)*
Ontario	6,054	581.3
Quebec	3,062	344.7
Alberta	3,459	343.5
British Columbia	2,446	256.4
Manitoba	1,027	100.1
Nova Scotia	421	47.6
Saskatchewan	477	49.7
New Brunswick	418	39.2
Newfoundland and Labrador	131	12.2
Prince Edward Island	55	4.9
Total	**17,550**	**1,780**

Body shops generate substantial paint-related employment and economic activity in Canada.

Body shops generate substantial paint-related employment and economic activity in Canada. One of the major activities of the body shop industry within Canada is painting or repainting cars that were in collisions or in some cases where owners want to re-paint their car for aesthetic appeal. There are over 7,500 body shops in Canada that consume automotive refinish paint. Each of these body shops employ staff who apply paint. Table 5.8 provides estimates for employment (11,751 jobs) as well as revenue ($972 million) generated by the body shop industry that can be attributed to paint application.

Table 5.8 **Body Shop Employment and Revenue**

	Body Shop Employment: Paint Related	**Body Shop Revenue: Paint Related** *(millions CAD)*
Ontario	3,980	328
Quebec	2,409	190
British Columbia	1,934	159
Alberta	1,474	123
Manitoba	739	61
Saskatchewan	536	43
Nova Scotia	300	24
New Brunswick	230	19
Newfoundland and Labrador	114	9
Prince Edward Island	36	3
Total	**11,751**	**972**

Orr & Boss estimates that there were 4,057 jobs for paint applicators within Canada in OEM applications.

Paint applicators are defined in this report as people applying paint to a structure in an industrial setting, that is, applicators working in an industrial setting painting goods or materials for assembly. An example would include people working in an automotive assembly plant's paint shop. In this report, applicators are different than painting contractors discussed above and shown in Table 5.8. In total, Orr & Boss estimates that there were 4,057 jobs for paint applicators within Canada in OEM applications. Table 5.9 below provides this data. This is based on the amount of paint consumed as noted in Table 2.1 in this report.

Table 5.9 **Paint Applicator Number of Employees**

	Number of Employees
Auto OEM	1,427
General Industrial	693
Wood	466
Coil	465
Other Transportation	327
Powder	319
Packaging	240
Marine	120
Total	**4,057**

The estimated applicator breakdown by province is given in Table 5.10 below.

Table 5.10 **Paint Applicator Employment by Province**

	Paint Applicator Employees
Ontario	1,433
Quebec	945
Alberta	591
British Columbia	510
Manitoba	318
Saskatchewan	97
Nova Scotia	70
New Brunswick	55
Newfoundland and Labrador	29
Prince Edward Island	8
Total	**4,057**

Product Stewardship

In 2016, 27 million kilograms of paint were recovered in Canada for recycling.

Product Stewardship is a very important function within the Canadian paint and coatings industry. In fact, the Canadian paint and coatings industry has been a global leader in this field of product stewardship. Organizations such as Product Care, Eco-Peinture, and Alberta Recycling Management Authority are the designated program operators for paint recycling under provincially mandated paint recycling programs. These organizations are Not-for-Profit organizations representing the paint companies that are the obligated stewards, per provincial legislation, for paint recovery and recycling in all provinces. Program operators recover and recycle leftover paint on behalf of the paint companies with 100 percent of the costs paid for by manufacturers. In 2016, there were 27 million kilograms of paint recovered in Canada.

The paint companies contribute a national average of $0.85 per gallon across all provinces with varied prices depending on container size. There are 69.5 million gallons of architectural paint sold in Canada annually. Thus, the total cost to paint companies or the brand owners or first importer, for these stewardship programs is approximately $50 million per year. The stewardship costs can vary from province to province based on regulations, volume recovered, geography, transportation, collection, processing, density and other required services. The estimated total employment for these organizations is 501 jobs. Table 5.11 provides the number of jobs and related costs per province for these programs.

Table 5.11 **Paint Product Stewardship Number of Employees and Costs**

	Number of Employees	**Product Stewardship Costs** *(millions CAD)*
Ontario	178	16
Quebec	117	12
Alberta	73	6
British Columbia	63	8
Manitoba	39	5
Saskatchewan	12	1
Nova Scotia	9	1
New Brunswick	7	1
Newfoundland and Labrador	4	0
Total	**501**	**50**

Average Wage and Salaries

In addition to the actual number of jobs and the economic output created by the paint and coatings sector, the average wages for certain functions were examined. CPCA collects wage and salary data from the large to very large member companies (over $20 million in annual sales). Orr & Boss compared that data with the 2017 data collected by the federal government department, Statistics Canada.

For those functions where direct comparisons are available, the paint and coatings wages and salaries are 18 per cent higher than the Canadian average.

The data reveals that for those functions where direct comparisons are available, the paint and coatings wages and salaries are 18 per cent higher than the Canadian average. The primary reason is the coatings industry is a productive one with labour content comprising a relatively small portion of the costs to manufacture paint. The trend of higher wages follows the chemical industry as a whole. For all employees in all industries, Statistics Canada data indicate that the average hourly earnings in Canada is $25.93/hour or $51,860 per year. The Chemistry Industry Association of Canada (CIAC) estimates that the average wage and salary paid in the Canadian chemical industry is $72,000 (based on 2015 estimates). Thus, the chemical industry as a whole pays an average wage that is 39 per cent higher than the average Canadian industry sector. The paint and coatings industry is part of the chemical industry and thus it is not surprising that wages are higher for paint and coatings companies, as shown in Table 5.12.

Table 5.12 **Wages and Salaries**

	Canadian Paint & Coatings Wages and Salaries *(1000 CAD per year)*	**Average Canadian Wages and Salaries** *(1000 CAD per year)*
Chemists	74.7	66.3
Brand Manager/ Senior Business Analysis	105.3	85.6
Plant & Warehouse Personnel/ Operators	52.1	44.1
Average Wage	**77.4**	**65.3**

Wages and salaries
18% higher
than the Canadian average

6. ECONOMIC IMPACT OF ADHESIVES & SEALANTS

Many paint and coatings companies also manufacture Adhesives and Sealants (A&S) products. Thus, Orr & Boss investigated the impact of the A&S market in Canada as part of this study. This section is a subset of the previous economic impact analysis presented for CASE, which is specific to adhesives and sealants. Table 6.1 gives the data for the A&S manufacturing companies.

In general, the A&S market follows the trends noted in the paint and coatings market. Ontario and Quebec are the provinces with total revenues at $1.3 billion and employment at 5,155 jobs.

Similar to the paint and coatings industry, the A&S sector also contributes to the Canadian economy through the economic activity created by raw material suppliers, end-users and plant and lab equipment suppliers.

Table 6.1 **Adhesive and Sealant Manufacturers Employment and Income**

	A&S Company Employment	**A&S Company Revenue** *(millions CAD)*
Ontario	2,268	574
Quebec	1,156	292
British Columbia	940	238
Alberta	466	118
Manitoba	129	33
Saskatchewan	103	26
Nova Scotia	52	13
Newfoundland and Labrador	26	7
New Brunswick	16	4
Total	**5,155**	**1,304**

Similar to the paint and coatings industry, the A&S sector also contributes to the Canadian economy through the economic activity created by raw material suppliers, end-users and plant and lab equipment suppliers. The A&S industry segment is smaller than paint and coatings sales in Canada at 41 per cent of the economic output of paint and coatings. It is somewhat more difficult to obtain precise data on suppliers and users in the A&S industry. Also, many companies that supply and use paint and coatings also supply the A&S industry and use A&S products. Therefore, in order to estimate the entire impact of the A&S industry on the Canadian economy, Orr & Boss scaled these indirect benefits to the paint and coatings data provided above in Section 5.

Many of the companies supplying the paint and coatings industry also supply the A&S market.

Table 6.2 below provides a summary of employment and revenues of A&S raw material and packaging suppliers. Many of the companies supplying the paint and coatings industry also supply the A&S market. In fact, many of the raw materials are the same or very similar such as acrylic resins and epoxy resins. The percentage of the raw material 'cost of sales' price is very similar to that of the coatings industry and the values were scaled to the figures in Table 6.2.

Table 6.2 **A&S Raw Material and Packaging Supplier Employment and Revenues**

	A&S Related Employment	**A&S Related Revenues** *(millions CAD)*
Ontario	341	184
Quebec	201	108
British Columbia	119	64
Alberta	92	50
Manitoba	23	13
Saskatchewan	19	10
Nova Scotia	13	7
New Brunswick	13	7
Newfoundland and Labrador	4	2
Total	**826**	**446**

Table 6.3 provides the Freight Company Employment and Revenue generated by the A&S industry. Again, freight expenditure as a percentage of sales in the A&S industry is very similar to that of the paint and coatings market. Thus, the figures provided in Table 6.3 were calculated by scaling the paint and coatings values given in Table 5.5.

Freight expenditure as a percentage of sales in the A&S industry is very similar to that of the paint and coatings market.

Table 6.3 **Freight Company Employment and Revenue**

	Freight Company Employment	**Freight Company Revenue** *(millions CAD)*
Ontario	118	24
Quebec	60	12
British Columbia	49	10
Alberta	24	5
Manitoba	7	1
Nova Scotia	3	1
Saskatchewan	5	1
New Brunswick	1	0.3
Newfoundland and Labrador	1	0.2
Total	**268**	**54**

While DIY use is part of retail sales for adhesives and sealants as noted below, the large majority is used by professionally trained applicators and contractors on large building projects such as high rise building construction and other OEM manufacturing such as automotive and furniture. A&S retail sales for DIY use is detailed separately in Table 6.7.

The main end users for the A&S industry are both applicators and contractors. Employment and revenue of automotive refinishing body shops was not added to the A&S values as in the paint and coatings section. A&S products are not used in body shop applications but the people applying the A&S product and the revenue they generate for the body shops are included in the paint and coatings values. Thus, there are two major industrial end-users in the A&S industry and these include Applicators and Contractors. The definition used for A&S applicators and contractors is similar to that used in the paint and coatings section of the report. Tables 6.4 and 6.5 provide the employment and revenue generated by A&S professionally trained applicators and contractors, respectively.

An **A&S applicator** is someone who applies A&S products in an industrial setting, for example, these would include a person applying A&S products in an automobile assembly plant. A contractor is someone who buys A&S products and applies them to a structure or another application during the course of the project for items like windows and doors. There are **A&S contractors** who only apply A&S products and these A&S contractors

Contractors are an important part of the A&S market.

are normally applying product to commercial architectural structures or a multi-family residential structure like a condominium. In other cases, contractors are buying and applying A&S products as part of another service they are providing. For example, a plumber will buy and apply A&S products. **In either case, the contractor is an important part of the market.** Tables 6.4 and 6.5 provide the employment and revenue generated by A&S applicators and contractors.

Table 6.4 **A&S Applicator Employment by Province**

	A&S Applicator Employees
Ontario	701
Quebec	463
Alberta	289
British Columbia	250
Manitoba	156
Saskatchewan	48
Nova Scotia	34
New Brunswick	27
Newfoundland and Labrador	14
Prince Edward Island	4
Total	**1,986**

Table 6.5 **A&S Contractors Employment and Revenue**

	A&S Contractors Employment	**A&S Contractors Revenue** *(millions CAD)*
Ontario	2,465	237
Quebec	1,247	140
Alberta	1,409	140
British Columbia	996	104
Manitoba	418	41
Nova Scotia	171	19
Saskatchewan	194	20
New Brunswick	170	16
Newfoundland and Labrador	53	5
Prince Edward Island	22	2
Total	**7,147**	**725**

Table 6.6 provides the employment and revenue generated by plant & lab equipment installed in the A&S industry. The amount spent on plant and lab equipment within the A&S industry is similar to that of the paint and coatings industry.

Table 6.6 **A&S Plant and Lab Equipment Suppliers Employment and Revenue**

	Plant & Lab Equipment Employment	**Plant & Lab Equipment Revenues** *(millions CAD)*
Ontario	74	14.7
Quebec	37	7.5
British Columbia	31	6.1
Alberta	15	3.0
Manitoba	4	0.8
Saskatchewan	3	0.7
Nova Scotia	2	0.3
New Brunswick	1	0.2
Newfoundland and Labrador	1	0.1
Total	**168**	**33**

Retailers are also an important part of the Canadian A&S industrial segment. Some of these retailers are establishments like big box retailers or hardware stores. Others are companies that focus on distributing A&S products to contractors and various other end users.

Table 6.7 **A&S Retailer Employment and Revenue**

	Retailer Employment	**A&S Retailer Related Revenues** *(millions CAD)*
Ontario	411	111
Quebec	234	63
British Columbia	109	32
Alberta	94	15
Manitoba	24	7
Saskatchewan	20	4
Nova Scotia	18	4
New Brunswick	15	6
Newfoundland and Labrador	13	5
Prince Edward Island	4	2
Total	**942**	**247**

7. IMPACT ON GDP, TAXES AND INDUCED BENEFITS

This section of the report summarizes the direct and indirect benefits noted in Sections 5 and 6 of this report and its impact on the Gross Domestic Product (GDP), taxes, and induced benefits. **GDP is defined as the total dollar value of all finished goods produced and the services provided in a country during one year.** It is used to determine the health of a country's economy.

Impact on Gross Domestic Product

GDP is the value-added to the economy and is the difference between the value of the output and the value of the inputs.

The tables provided in Sections 5 and 6 provide the output and the employment for each part of the value chain in the paint and coatings industry in Canada. Each step of the value chain impacts a country's GDP. **GDP is the value-added to the economy and is the difference between the value of the output and the value of the inputs.** Thus, it represents the "unduplicated" value of economic activity that has taken place.

There are several approaches that could be used to calculate GDP impact, all of which would result in the same number. In this report, the Expenditure Approach was used to calculate the GDP impact by province and for Canada as a whole. **To do this, we calculated the total expenditure on paint and coatings by consumers, other businesses and government.** Table 7.1 provides this estimate of expenditures, which include all revenue generated in Canada by end users such as DIY consumers, contractors, industrial and commercial buyers, and body shops. It includes all paint, coatings, adhesives and sealants as well as related accessories sold in Canada.

Table 7.1 **Total Expenditure** *(millions CAD)*

	Paint and Coatings Expenditure	Adhesive and Sealant Expenditure	Total Expenditure
Ontario	1,983	801	2,783
Quebec	1,040	430	1,470
Alberta	613	229	842
British Columbia	657	323	980
Manitoba	213	67	281
Saskatchewan	142	43	186
Nova Scotia	107	31	139
New Brunswick	90	22	112
Newfoundland and Labrador	54	15	69
Prince Edward Island	18	3	21
Total	**4,917**	**1,965**	**6,883**

Canada is a net importer of raw materials, paint and coatings, and adhesives and sealants.

Some of the expenditures summarized in Table 7.1 are for imported products. The net trade balance (exports minus imports) are subtracted from the expenditures to arrive at a GDP value. Canada is a net importer of raw materials, paint and coatings, and adhesives and sealants. Table 7.2 provides the Net Trade balance in the product categories that were considered in this report (a negative value indicates that Canada is a net importer). The raw materials trade balance data provided in Table 7.2 assumes that the imports of raw materials used in paint and coatings follows that of the overall chemical industry. **In other words, the paint and coatings industry imports chemical products into Canada at the same rate as do other industries.**

The Net Trade Balance Data presented in Table 7.2 is published nationally by Industry Canada and was allocated to the provinces in proportion to the paint and coatings, adhesives and sealants, accessory, and raw material markets presented in Sections 5 and 6 of this report.

Table 7.2 **Net Trade Balance** *(millions CAD)*

	Paint and Coatings Trade Balance	Adhesive and Sealant Trade Balance	Accessory Trade Balance	Raw Material Trade Balance	Total Trade Balance
Ontario	(412)	(300)	(93)	(176)	**(981)**
Quebec	(172)	(153)	(43)	(104)	**(471)**
Alberta	(118)	(62)	(23)	(48)	**(250)**
British Columbia	(115)	(124)	(31)	(62)	**(333)**
Manitoba	(37)	(17)	(7)	(12)	**(73)**
Saskatchewan	(22)	(14)	(5)	(10)	**(51)**
Nova Scotia	(19)	(7)	(3)	(7)	**(36)**
New Brunswick	(15)	(3)	(2)	(6)	**(27)**
Newfoundland and Labrador	(8)	(2)	(1)	(2)	**(14)**
Prince Edward Island	(2)	<-0.5	<-0.5	<-0.5	**<-0.5**
Total	**(921)**	**(681)**	**(210)**	**(426)**	**(2,236)**

To finalize the GDP estimate, we need to subtract the net imports given in Table 7.2 from the expenditures given in Table 7.1. Table 7.3 below does this and provides GDP by province. The total GDP impact of the paint and coatings industry in Canada is $4.647 billion.

The total GDP impact of the paint and coatings industry in Canada is $4.647 billion.

Table 7.3 **GDP Impact by Province**

	GDP *(millions CAD)*
Ontario	1,802.2
Quebec	999.3
Alberta	592.0
British Columbia	647.3
Manitoba	207.7
Saskatchewan	135.0
Nova Scotia	102.9
New Brunswick	84.6
Newfoundland and Labrador	54.7
Prince Edward Island	21.0
Total	**4,647**

Tax Contributions to Governments

This part of the study documents the current contribution to government revenues resulting from economic activity in the paint and coatings industry or CASE industry. This was for federal and provincial contributions, not municipal. There are two types of taxes generated directly by the paint and coatings industry. **The first are the taxes paid by employees through the wages and salaries they earn via payroll taxes.** These taxes include federal and provincial income tax as well as the Canada Pension Plan (CPP) and Employment Insurance (EI) contributions, both of which are paid in part by the employee and the employer. These payments are made at source through payroll deductions and forwarded directly to governments by the employer. **The second set of taxes paid by companies involved in the coatings industry are corporate income taxes and sales taxes, shared by both the provincial and federal levels of government.** These taxes are generated through the sale of paint and coatings and adhesives and sealants products.

In total, $832 million is paid to the federal and provincial governments from the wages and salaries earned in the paint and coatings industry in Canada.

Table 7.4 provides the estimate for the taxes paid by the employees working in the industry. Total wages paid were multiplied based on the federal and provincial income tax rates as published by the Canada Revenue Agency. The wages were also multiplied by 13.8% to determine both the company and employee contribution to the CPP and EI programs.

Table 7.4 **Taxes Paid by Individuals Employed** *(millions CAD)*

	Federal Income Tax Collected by Province	CPP and EI Tax Collected by Province	Provincial Income Tax	Total Tax Paid on Wages
Ontario	99	156	50	**306**
Quebec	53	83	54	**190**
Alberta	34	54	37	**125**
British Columbia	34	53	17	**104**
Manitoba	11	18	13	**42**
Saskatchewan	7	10	8	**24**
Nova Scotia	5	8	5	**17**
New Brunswick	4	6	4	**15**
Newfoundland and Labrador	2	3	2	**7**
Prince Edward Island	1	1	1	**2**
Total	**250**	**392**	**190**	**832**

In total, $832 million is paid to the federal and provincial governments from the wages and salaries earned in the paint and coatings industry in Canada.

Table 7.5 provides the estimate for the corporate taxes paid. **Again, this includes both the corporate income taxes paid to the federal and provincial governments as well as the sales taxes paid.** Corporate taxes were estimated by multiplying the total output for each province by an average profit before tax rates for the industry of 10.2 per cent. With this value, the federal corporate tax was then multiplied by the profit before rate of 15 per cent and the relevant provincial tax rates. The GST and PST were estimated by using the federal GST rate of 5% and the various PST rates for the combined HST rates. All tax rates used were those published by the Canada Revenue Agency. These were multiplied by the value-added or GDP generated in each province. In total, taxes paid by companies are estimated to be $908 million.

Table 7.5 **Taxes Paid by CASE Companies** *(millions CAD)*

	Federal Corporate Income Tax Collected	Federal GST Collected	Provincial Income Tax Collected	Provincial PST Collected	Total Corporate Tax Collected
Ontario	76	90	58	144	**368**
Quebec	40	50	31	100	**220**
Alberta	24	30	19	-	**73**
British Columbia	27	32	20	45	**124**
Manitoba	8	10	6	17	**41**
Saskatchewan	5	7	4	8	**24**
Nova Scotia	4	5	4	10	**23**
New Brunswick	3	4	3	8	**19**
Newfoundland and Labrador	2	3	2	5	**12**
Prince Edward Island	0	1	1	2	**4**
Total	**188**	**232**	**148**	**340**	**908**

In total, the paint and coatings industry contributes $1.74 billion in taxes to the federal and provincial governments.

Table 7.6 combines the data in Tables 7.4 and 7.5. In total, the industry contributes $1.74 billion in taxes to the federal and provincial governments.

Table 7.6 **Taxes Paid by Individuals and Companies** *(millions CAD)*

	Total Federal Taxes Collected by Province	Total Provincial Taxes Collected by Province	Total Tax Collected by Province
Ontario	421	253	**674**
Quebec	226	184	**411**
Alberta	142	56	**198**
British Columbia	146	82	**228**
Manitoba	47	36	**83**
Saskatchewan	29	20	**48**
Nova Scotia	22	19	**41**
New Brunswick	18	16	**33**
Newfoundland and Labrador	9	9	**18**
Prince Edward Island	3	3	**6**
Total	**1,063**	**677**	**1,740**

Induced economic benefits are the result of wages and salaries paid to the employees in the industry who then spend their money on other goods and services, which further creates economic activity.

Induced Economic Impacts

The direct and indirect economic impacts created by the industry result in 'induced' economic benefits. **These benefits are the result of wages and salaries paid to the employees in the industry who then spend their money on other goods and services, which further creates economic activity.** The induced economic activity creates employment and generates wages and salaries. Table 7.7 below provides the induced number of jobs as well as the wages and salaries earned from those jobs. The number of jobs was calculated by using a multiplier for every direct and indirect job created. The multiplier varies by type of job. In this study, we used a multiplier 1.74 for manufacturing jobs (the direct jobs created in the industry as well as those created by the raw material suppliers); 1.25 for the retail; 1.61 for body shops; and 1.25 for all other jobs created. These multiplier values come from published academic studies that estimate the induced economic impact of various job classes in the economy. The multipliers used in this study were published by Michigan State University. Also, we used the national average wage earned of $25.93/hour (this is the average wage from Statistics Canada). Finally, we assumed 1,703 hours per year worked per employee, which is the average number of hours worked per employee in Canada according to the OECD.

Table 7.7 **Total Induced Employment and Wages and Salaries**

	Induced Employment	**Wages and Salaries** *(millions CAD)*
Ontario	49,615	2,191
Quebec	26,586	1,174
Alberta	17,120	756
British Columbia	17,092	755
Manitoba	5,713	252
Saskatchewan	3,354	148
Nova Scotia	2,495	110
New Brunswick	2,040	90
Newfoundland and Labrador	1,002	44
Prince Edward Island	299	13
Total	**125,316**	**5,534**

8. CONCLUSION

The total economic output of the Canadian CASE Industry (Paint & Coatings industry, including Adhesives & Sealants), is $12.3 billion. The industry creates an estimated 86,301 jobs in Canada. The industry's contribution to GDP is $4.6 billion. Ontario and Quebec are the leading provinces and account for 60% of the employment, 61% of the output and 60% of the GDP. The total taxes generated are estimated to be $1.74 billion. In addition to the values summarized in Table 8.1, there are an estimated 125,316 jobs created as a result of the 'induced' economic activity as shown in table 7.7 above. These additional jobs collectively generate $5.5 billion in wages and salaries.

Table 8.1 **Total Employment and Economic Output**

	Total Direct & Indirect Employment	**Total Economic Output** *(millions CAD)*	**GDP** *(millions CAD)*	**Total Federal & Provincial Taxes Paid by Province** *(millions CAD)*
Ontario	34,001	4,946	1,802	674
Quebec	17,307	2,590	999	411
Alberta	12,259	1,589	592	198
British Columbia	11,903	1,746	647	228
Manitoba	4,162	511	208	83
Saskatchewan	2,384	334	135	48
Nova Scotia	1,804	249	103	41
New Brunswick	1,510	202	85	33
Newfoundland and Labrador	745	109	55	18
Prince Edward Island	226	31	21	6
Total	**86,301**	**12,310**	**4,647**	**1,740**

The jobs created directly in the paint and coatings industry tend to be relatively good paying jobs with average wages and salaries about 18% above the 'national' average of wages in the economy as a whole.

If the per capita paint consumption rate in Canada grew by 15% it would equal that of the United States.

The industry has also enjoyed steady growth over the years. **Since 2008, the Canadian paint and coatings market has grown at a Compounded Annual Growth Rate (CAGR) of 2.0% which is above the Canadian GDP growth rate of 1.5% CAGR over that same time period.** The expectation is that the Canadian paint and coatings industry will continue to grow at that level, which will be driven by construction activities, automotive manufacturing and industrial production. Furthermore, there is room for paint consumption to grow in Canada. The per capita paint consumption in Canada is 13.7 litres per person versus that of the United States of 15.8 litres per person. If the paint consumption rate in Canada grew by 15% it would equal that of the United States.

The Canadian paint and coatings industry has a strong record of sustainability as a global leader in the recovery, recycling and management of post-consumer or leftover paint.

In addition to the above numbers, coatings industry impacts relate directly to the fact that it touches all aspects of the Canadian economy. Construction and automotive applications are important generators of economic activity in the coatings industry. Beyond construction and automotive, CASE products are used in the oil & gas, mining, packaging, and general industrial industries. **There are literally tens of thousands of single stocked units (SKU) for coatings, adhesives and sealants on store shelves in thousands of stores across Canada.**

The Canadian paint and coatings industry has a strong record of sustainability **as a global leader in the recovery, recycling and management of post-consumer or leftover paint.** Organizations have been established across the country to recover and recycle leftover paint with 100% of the costs paid for by manufacturers under provincially mandated government programs. This activity involves collection, storage, processing and transportation of leftover paint in every province. Other countries have considered Canada as a model for their paint recycling programs.

The industry has also been a leader on sustainability in other areas with many innovations in coatings technology, which precipitated the move to more waterborne products in recent years. **Now 95 percent of architectural coatings used in Canada are water-based products.** The industry has been a leader in reducing VOC emissions by more than 75 percent in the past ten years, as confirmed by recent testing of architectural coatings by the federal government.

The industry continues to work with federal government departments and agencies on improving chemicals management in Canada with respect to the paint and coatings industry. This has led to advances in the protection of human health and the environment with new regulations and other risk control measures for industry such as Codes of Practice, pollution prevention plans and compliance agreements. All this is done while ensuring customers have access to a wide range of innovative, highly performing, functional coatings for residential, commercial and industrial application.

Governments and stakeholders view CPCA as an organization that seeks to proactively address environmental issues before they become problems for both industry and government. The association is considered an integral part of the government's regulatory development process as one of the first industry organizations to establish an industry-government sectoral working group on regulatory development. The Association is also viewed as an important ally in promoting compliance and other hazard communication initiatives once regulations or other risk management measures have been introduced. **This aligns with the longstanding approach of the Canadian paint and coatings industry to aggressively pursue innovation in product formulations in an environmentally conscious manner without compromising product performance.**

This report goes 'beyond colour' to explain the impacts of Canada's most visible industry and paints a complete economic picture of the sector.