Diamonds

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Diamonds - 2011 Annual Review and Outlook

HIGHLIGHTS

- Canada's 2011 preliminary rough diamond production is valued at an estimated $2.5 billion, for a production level of 10.8 million carats (Mct). This makes Canada the world's third largest producer by value after Botswana and Russia.

- On a value basis, Canada's diamond production currently accounts for approximately 17.7% of world production, estimated in 2011 at 124.0 Mct valued at US$14.4 billion.

- Compared to 2010, diamond exploration expenditures across Canada diminished by14% to $95.7 million in 2011.

CANADIAN PRODUCTION

Preliminary figures indicate that Canada's 2011 rough diamond production saw an 8.9% decrease in volume and a 5.6% increase in value over 2010. The decrease in volume mostly stemmed from the treatment of lower-grade ore while the increase in value was due to a hike in market prices brought on by tighter supplies following the depletion in inventories recorded during the last recession. Another factor at play in the hike in value was the 4.0% appreciation of the Canadian dollar versus the U.S. dollar (sales are made in U.S. dollars). This explains why the value of Canada's production increased by 10.7% in U.S. dollars, but only by 5.6% in Canadian dollars.

Canada's current diamond production comes from four mines: the Ekati™, Diavik, and Snap Lake mines located about 300 kilometres (km) northeast of Yellowknife in the Northwest Territories (N.W.T.), and the Victor mine located in northern Ontario (Figure 1). The opening of these mines has created some 8000

direct and indirect jobs (including contractors working on projects under construction and jobs in ancillary industries) and contributed to the formation of more than 100 Aboriginal companies.

Ekati™ Mine

Canada's first diamond-producing mine, Ekati™, came into production in 1998. It is owned 80% by BHP Billiton Ltd. (BHP). Chuck Fipke and Stuart Blusson, who discovered the first diamond deposit in 1991, each hold a 10% interest in the mine. In 2011, Ekati achieved a production level of 2.6 Mct, down 27% from 2010. The processed ore graded an average of 0.56 carats per tonne (ct/t). The production decline was reportedly due to lower average ore grades and unseasonably high rainfall in the third quarter of the year. Production was primarily sourced from the Koala and Koala North underground mines and from the Fox open-pit mine. Over the coming years, ore production is expected to continue to be influenced by the variability of ore sources due to the mix of open-pit and underground mining. Completed in early October 2007, the Koala underground mine is expected to supply 25% of Ekati's feed and 40% of the diamond output by value over its 11-year production life. The mine is expected to deliver approximately 9.8 Mct of high-value Koala diamonds.

In May, the company announced it is budgeting expenditures of $323 million to strip mine an older area of the Misery site, which is an open-pit mine it operated between 2001 and 2005. The project consists of a pushback of the existing limits of the pit. Mining is scheduled to start in late 2015 and to last until mid-2017. This would enable the extension of Ekati's mine life by one year to 2018. As of June 30, 2011, total ore reserves in the Ekati core zone stood at 25.1 million tonnes (Mt) grading 0.84 ct/t.

On November 29, BHP announced it was proceeding with a review of its diamond business, indicating that the company may put its interest in Ekati up for sale. The mine represents less than 2% of the company's annual profits and is at odds with the company's main business line, which consists of bulk commodities such as iron ore, coal, and base metals.

BHP Billiton Diamonds Inc. reported employment of 1213 people during the year, including contract workers on site that provide a variety of support services.

Diavik Mine

Canada's second diamond mine, Diavik, began production in early 2003. It is an unincorporated joint venture between Diavik Diamond Mines Inc. (DDMI), which owns 60% of the mine, and Harry Winston Diamond Mines Ltd. (HWDML), which owns 40%. DDMI, the manager of the mine, is a wholly owned subsidiary of Rio Tinto plc, while HWDML is a wholly owned subsidiary of Harry Winston Diamond Corp. of Toronto, Ontario. The two joint-venture participants retain the right to independently market their respective share of the diamonds produced from Diavik.

Production at Diavik reached 6.68 Mct in 2011 for an average grade of 2.99 ct/t. This was 2.7% higher than the volume of carats produced in 2010, but was a 3.8% decrease in the average grade. These results fell short of the company's 6.9-Mct forecast; the shortfall resulted from lower amounts of reprocessed ore and a higher proportion of lower-grade A-418 processed ore. Diavik's production during the year can be broken down as follows: 6% from the A154 South kimberlite with a grade of 4.00 ct/t, 10% from the A154 North kimberlite with a grade of 1.94 ct/t, 81% from the A418 kimberlite with a grade of 3.00 ct/t, and 3% from reprocessed ore.

Open-pit mining of Diavik's A418 orebody continued during 2011 and should run until the second quarter of 2012, at which time all mining operations will be carried out underground. Prefeasibility work is being conducted on the A21 pipe, located south of current mining operations, to determine if it is viable

to mine. If so, it could be developed starting in 2013 with production beginning in 2015. At the end of the year, Diavik's reserves in the A154 South, A154 North, and A418 pipes stood at 18.9 Mt grading 3.1 ct/t, which is close to 1 Mt more than at the end of 2010 as the result of a successful large-diameter reverse circulation drill program. These reserves should allow underground operations at Diavik to extend well beyond 2020.

During 2011, the work force at Diavik's operations averaged 1137, with northern and Aboriginal employment averaging 642 (56%) and 313 (27%), respectively.

Jericho Project

The Jericho mine, Canada's third diamond mine and its first outside the N.W.T., is located in Nunavut about 420 km northeast of Yellowknife and 170 km north of the Diavik mine at Lac de Gras, N.W.T. Initially owned by Tahera Diamond Corp., a Toronto-based firm, the deposit comprised at least six kimberlite lobes hosting about 5.5 Mt grading 0.85 ct/t.

Designed with a production capacity of around 500 000 carats per year (ct/y) and a nine-year life, the mine achieved commercial production on July 1, 2006. However, the company experienced start-up problems related to ore mining and processing that were compounded by higher operational costs due to the early closure of the ice road in 2006, which limited the transport of supplies to the mine site. The company was eventually able to improve its production rate. However, additional financial losses incurred by the company, linked to the appreciation of the Canadian dollar versus the U.S. dollar and higher oil prices, forced the company to seek protection under the *Companies' Creditors Arrangement Act* on January 16, 2008. Mining operations were suspended on February 6 with production limited to only 118 000 ct in 2008.

In July 2010, Shear Minerals Ltd. bought the property and started designing an exploration program to increase the resources of the deposit as only four years of ore remained from the initial assessment. Work in 2011 focused on drilling at depth on the main deposit and on the second kimberlite on the property (JD-02), as well as on an analysis and re-engineering of the recovery plant to enable the processing of the stockpile to assess the potential of the deposit. On October 6, Shear announced the recovery of 200.85 ct from 22.1 wet tonnes of recovery rejects and coarse processed kimberlite. In parallel, efforts were made during the year to have the Type A Water Licence renewed, which was granted by the Nunavut Water Board on December 22.

On December 8, Shear announced the signature of agreements with Antwerp-based Taché Company N.V. The first agreement is a debt financing agreement that includes a $2 million term loan repayable in 12-month instalments once Shear begins receiving proceeds from diamond sales from the existing recovery concentrate stockpile at Jericho. The agreement also includes a $3 million revolving credit facility that can be drawn against once Shear has begun shipping diamonds from the existing recovery stockpiles. The second agreement concerns the purchase of Shear's production of rough diamonds from the Jericho mine and includes provisions that allow Shear to participate in profits on the sales of both rough and polished stones.

Snap Lake Project

The Snap Lake diamond deposit, 100% owned by De Beers Canada Inc. (part of the De Beers Group), is located approximately 220 km northeast of Yellowknife in the N.W.T. The deposit is unique in that the kimberlite is in the form of a dyke, as opposed to the more common carrot-shaped pipe. The dyke is a tabular-shaped structure about 2.7 metres (m) thick that dips at a shallow angle of 15 degrees. Because of its shape, the company is using a modified room and pillar underground method to mine the deposit,

which is estimated to contain 18.3 Mt grading 1.46 ct/t. Although mining operations started in October 2007, Snap Lake achieved commercial production status in the first quarter of 2008 and was officially opened on July 25. At full production, the mine is designed to produce about 1.4 Mct/y and to have a life of just over 20 years.

During 2011, company efforts concentrated on ramping up the operation to meet its design capacity. Intent on reaching that goal by 2014, De Beers initiated recruiting programs to increase its work force. At the end of 2011, the mine had 806 employees, although the average work force during the year was 678 with northern and Aboriginal employment averaging 104 (15%) and 249 (21%), respectively. Snap Lake's production for the year decreased by 4.9% to 881 000 ct compared to 2010, for a recovered grade of 1.08 ct/t.

Victor Project

In northern Ontario, about 90 km west of the coastal community of Attawapiskat on the James Bay coast, the commissioning of the 100%-owned De Beers Victor project was initiated at the end of December 2007 and the mine officially opened on July 26, 2008. Developed at a cost of $991 million, the Victor kimberlite has a surface area of 15 hectares (ha) and consists of two pipes that coalesce at the surface: Victor Main and Victor Southwest. These pipes have mineable reserves estimated at 27.4 Mt averaging 0.23 ct/t. Potential resources exist in other kimberlite pipes located in the area, but have not yet been proven to be economic.

In 2011, ore from Victor Southwest became an important portion of the mine plant feed. While the Victor mine is designed to produce an average of 600 000 ct/y over a 12-year open-pit mine life, it again surpassed this capacity during the year by achieving production of 801 574 ct, which is 0.3% more than in 2010. The average carat value at Victor reached an all-time high for Canada, estimated at $569. Employment at the mine at the end of 2011 stood at 441 workers, 12% less than in 2010.

CANADIAN DEVELOPMENTS

Exploration for diamonds, contrary to some of the other commodities, diminished somewhat in 2011 compared to the previous year, although it remained strong. A discussion of developments achieved for projects at an advanced stage of exploration or at an early stage of mine development follows below.

In the **Northwest Territories**, the **Gahcho Kué project**, owned by De Beers Canada Inc. (51%) and Mountain Province Diamonds Inc. (49%), is located south of Lac de Gras, 90 km southeast of the Snap Lake project and approximately 300 km northeast of Yellowknife. Of the eight diamondiferous kimberlites found to date on the Gahcho Kué property, the larger 5034, Hearne, and Tuzo kimberlite bodies were confirmed to be economically viable by a National Instrument (NI) 43-101-compliant definitive feasibility study of the project that was completed on December 8, 2010. The feasibility study indicated that the Gahcho Kué project has a 33.9% internal rate of return and outlined, in the three main orebodies, probable mineral reserves of about 31.3 Mt grading 1.57 ct/t that could be mined at a rate of 3.0 Mt/y over an 11-year mine life for an average production rate of about 4.5 Mct/y. The base-case model used an average realized diamond price of US$102.48/ct (an updated value established in May 2011 indicated a base-case model value averaging US$122/ct). The later feasibility study was approved by the partners in June 2011.

On July 26, the Mackenzie Valley Environmental Review Panel confirmed that the project's Environmental Impact Statement filed on December 23, 2010, conformed to the Panel's Terms of Reference. Under the work plan and schedule issued by the Panel on the same day, the Environmental Impact Review process is expected to be completed by July 2013. Given that construction is expected to

take about two years, the mine could be in production in early 2015. The project is expected to create close to 690 jobs during the construction phase and some 370 jobs during the operational phase. Construction costs are estimated at between $650 and $750 million.

In **Nunavut**, joint-venture partners Stornoway Diamond Corporation (90%) and Hunter Exploration Group (10%) pursued exploration of the **Aviat project** located on the Melville Peninsula north of Hudson Bay where 12 kimberlite bodies have been discovered to date. These range from small pipe-like intrusions to shallowly dipping (8-20 degrees) stacked sheets or dyke-like intrusions ranging in thickness between 0.9 and 1.7 m. An independent conceptual study of four dykes at Aviat's Eastern Sheet Complex carried out in 2008 estimated their content at 12.4-16.0 Mt of kimberlite material grading 2.35 ct/t plus or minus 0.30 ct/t. Representing about 78% of the estimated total kimberlite volume, Dyke ES 1 was the focus of a more extensive sampling program. A 202-tonne (t) sample, collected to better estimate its grade and size distribution, enabled the recovery of 89.55 ct from a 42.67-t sample for an overall diamond recovery of 2.1 ct/t, plus 213.2 ct from the remaining 148.3 t of material for a diamond content of 1.44 ct/t; the largest diamond recovered weighed 3.99 ct. Caustic fusion results, released in March, from 1146.34 kilograms (kg) of kimberlite collected in 2008 by drilling from AV9 (926.5 kg) and from several of the unnamed kimberlite sheets (219.84 kg) indicated a grade of 0.56 ct/t for AV9 and 1.03 ct/t for the sheets. However, given the small size of the sampling, these results must be interpreted with care.

Also in Nunavut, **Peregrine Diamonds Ltd.** pursued work on its Chidliak property located 150 km northeast of Iqaluit where an additional 9 kimberlites were discovered during 2011 for a total of 59. The $17.7 million exploration program carried out during the year included 8468 m of core drilling, 1530 m of reverse circulation drilling to evaluate exploration targets, airborne and ground geophysical surveys, heavy mineral sampling, and prospecting. Of the total core drilling, 5583 m were done on six of the seven kimberlites with economic potential identified on Chidliak to date, namely CH-6, CH-7, CH-28, CH-31, CH-44, and CH-45. All of these are located within an 8-km radius area (the Southern Focus Area), except for the CH-28 kimberlite, which is located 45 km north of the Southern Focus Area where a 33.5-t mini-bulk sample was also collected from surface.

Preparations for a bulk sampling program began in mid-2011 with the commencement of the modification of the bulk sample reverse circulation drill rig, the procurement and mobilization of support equipment and fuel to Iqaluit, and the submission of applications for the land use permit and water licence amendments. Cooper Drilling LLC was awarded the contract to provide large-diameter reverse circulation drilling services while NUNA Logistics was selected to provide heavy equipment and logistical support for the program.

On December 20, Peregrine announced that it had entered into a binding agreement with BHP to purchase the latter’s 51% interest in the project in exchange for a total payment of $9 million over three years and the granting of a 2% royalty on any future mineral production from Chidliak.

While the end-of-year change to the ownership structure may force Peregrine to review its program, plans for the 2012 exploration program at the end of 2011 included the continuation of work leading to the bulk sampling project, delineation drilling of key kimberlites, and comprehensive exploration to identify more diamondiferous kimberlites. The bulk sampling exercise being contemplated is designed to extract 200-ct parcels per kimberlite to permit an independent diamond valuation to be made to better assess their economic potential.

In the Fort-à-la-Corne region of northern **Saskatchewan**, Shore Gold Inc. pursued its work on advancing the **Star** and **Fort-à-la-Corne** diamond projects to a production decision. The Star-Orion South diamond project includes Shore’s 100%-owned Star diamond project, as well as Star West and the Orion South kimberlite, which fall within the adjacent Fort-à-la-Corne joint venture. Shore Gold has a 67% interest in

the joint venture through its wholly owned subsidiary, Kensington Resources Ltd., while Newmont Mining Corp. of Canada Ltd. has 33%.

On July 14, Shore Gold announced the completion of the NI 43-101-compliant Technical Report documenting the feasibility study and updated mineral reserve for the Star-Orion South diamond project. Based on the feasibility study, development of the Star and Orion South kimberlites would be combined to improve the economics of the project and would entail developing an open pit initially on Star and then another on Orion South. The report indicates a mineral reserve estimate on the Star-Orion South diamond project of 279 Mt at a weighted average grade of 0.123 ct/t. This equates to a total content of 34.4 Mct at a weighted average price of US$242/ct. Construction of the mine is estimated to take just over four years. If development begins in the third quarter of 2012, ore production could start in early 2017 and extend over a 20-year period at an average rate close to 2 Mct/y. Pre-production capital costs are estimated at $1.9 billion with a total capital cost of $2.5 billion (including direct and indirect costs and contingencies) over the life of the mine and an initial capital cost payback period of 5.3 years. Based on these figures, the base-case net present value (NPV) of the project is $2.1 billion (using a 7% discount rate) for an internal rate of return (IRR) of 16% before taxes and royalties, and an after-taxes and royalties NPV of $1.3 billion with an IRR of 14%.

The Environmental Impact Statement for the Star-Orion South diamond project was submitted to the Saskatchewan Ministry of Environment on December 22, 2010. It is undergoing review as part of the Environmental Impact Assessment of the project pursuant to the *Canadian Environmental Assessment Act* and Saskatchewan's *Environmental Assessment Act*. At the end of 2011, the company's plans for 2012 included pursuing the environmental permitting process, performing certain confirmatory work, and pursuing options to finance its portion of the project.

In north-central **Quebec**, Stornoway Diamond Corp. continued to advance exploration and development on its now wholly owned Renard **property** where 14 kimberlite bodies have been identified to date, including an extensive dyke system located west of the Renard Cluster. At the end of 2010, Stornoway had acquired its joint-venture partner's 50% interest in the Renard diamond project in exchange for common voting shares, non-voting convertible shares, and a 2% gross revenue royalty on life-of-mine production from Renard. As a result of this transaction, the joint-venture partner, DIAQUEM Inc., a wholly owned subsidiary of SOQUEM, itself a Quebec state enterprise, finds itself with a 37% interest in Stornoway on a fully diluted basis.

The feasibility study made public by Stornoway on November 16, 2011, indicates probable mineral reserves of 23 Mt with an average grade of 0.78 ct/t and a weighted average diamond valuation of US$180/ct. These reserves were outlined in Renard kimberlites 2, 3, and 4, and would be extracted in a combination open-pit and underground mine over an 11-year mine life with a maximum annual diamond production of 2.1 Mct and an annual average of 1.7 Mct. Initial capital costs to develop the mine are estimated at $802 million while operating costs are estimated at an average $54.71/t, yielding an operating margin of 68%. Using a discount rate of 7%, the base-case estimates of NPV are $672 million before taxes and mining duties for an IRR of 18.7%, and $376 million and 14.9% after taxes and mining duties. Pay-back is estimated, after tax, at 4.8 years.

On December 7, the Quebec Ministère du Développement durable, de l'Environnement et des Parcs issued a certificate of authorization to allow the construction of Route 167, which will provide year-round access to the project site. Stornoway agreed to contribute $44 million to the financing of the road's $332 million construction cost and to contribute to the cost of road maintenance.

On December 28, Stornoway announced the filing of the Renard Environmental and Social Impact Assessment. Hearings were expected to be held in the first half of 2012. Once all regulatory requirements

are met, the project will be eligible to receive both the federal and the provincial Certificates of Authorization, which the company anticipates will occur in the middle of 2012. Stornaway will then be in a position to seek final mine permits from provincial and federal authorities and start the development.

CANADIAN DIAMOND MANUFACTURING

Diamond Cutting and Polishing

Canada maintains a small diamond manufacturing industry. However, due to the impact of the global economic downturn, which forced the closure of some cutting and polishing facilities, there are only four diamond manufacturers still in operation across Canada. Located in Yellowknife (N.W.T.), Vancouver (British Columbia), Prince Albert (Saskatchewan), and Sudbury (Ontario), these cutting and polishing factories provide work for about 55 people. Limited cutting and polishing work is also carried out in Winnipeg (Manitoba), Toronto (Ontario), and Montréal (Quebec).

Yellowknife, N.W.T.

Following the closure, on February 19, 2009, of the Laurelton Diamonds cutting factory and, in mid-December 2010, of Arslanian Cutting Works (NWT) Ltd. and the Polar Diamonds factory, there is only one factory remaining in operation in Yellowknife where, under territorial government policy, all diamond mining companies have made a commitment to provide up to 10% by value of their production to the northern factories at market price. Operated by Crossworks Manufacturing Ltd. (a subsidiary of HRA-SunDiamond Group of Companies), the factory began operating in the first half of 2008 and employs about 11 workers.

Vancouver, British Columbia

In operation since 2001, the Vancouver diamond cutting and polishing factory is owned by HRA-SunDiamond Group of Companies. The factory is fully automated and currently employs about 12 workers. It concentrates on cutting and polishing Canadian diamonds in order to add value to its product through the various branding programs it designs for its clients, such as the Ikuma brand designed for the Ben Bridge jewellery chain. The size of rough diamonds favored at the factory is around 1 ct. The plant is said to be producing at an average rate of 1500-1700 ct per month.

Sudbury, Ontario

The Sudbury-based factory was opened in September 2009 by the HRA-SunDiamond Group of Companies to take advantage of the agreement between the Ontario government and De Beers Canada through which the latter is to provide 10% by value of its production to the northern factory at market price. The Crossworks Manufacturing Ltd. factory currently employs about 30 workers and is reported to be processing about $35 million of rough diamonds annually.

Prince Albert, Saskatchewan

Embee Diamonds, a division of Embee Diamond Technologies Inc., is located in Prince Albert, Saskatchewan, close to the Fort-à-la Corne area where mining companies are actively developing new diamond deposits. Started in April 2010, the factory focuses on cutting and polishing Canadian rough diamonds and branding them under the “Sirius Star” brand. At the end of 2011, the company had six employees.

Diamond Jewellery Manufacturing

The largest mark-up in the pipeline for diamonds is at the jewellery stage. There are approximately 20 major plants located in the Toronto region and a few in Montréal. There are also several smaller plants in Montréal. A recent Diamond Trading Company study identified Canada as the world's sixth leading diamond-buying culture on account of its diamond value market share (1.8%) despite its relatively small population.

Diamond Tools and Equipment Manufacturing

Diamond products manufactured in Canada include drill bits, segments for circular blades, grinding wheels, and specialty tools. The major manufacturing plants in Quebec include Fordia and K&Y Diamond Limited in Ville St-Laurent, Diamond Production and North Star Abrasives in Montréal, Diacan in Québec City, and Diamond Systems in Dorval. Those in Ontario include Tru-Form Diamond Tool Company in Georgetown; JKS Boyle, Longyear, JKS Lamage, and Pilot Diamond Tools, all in North Bay; Diatech Diamond Tools in Toronto; Hammond Diamond Tooling Ltd. in Collingwood; and Northern Super Abrasives in Oakville. Other locations include Dimatec in Winnipeg, Manitoba; Diaset Products Ltd. in Delta, British Columbia; and Hobic Bit Industries Corp. and Hayden Diamond Bit Industries Ltd. in Richmond, British Columbia.

Synthetic Diamond Production

sp3 Ltd. of Calgary, Alberta, produces synthetic diamond films using the Carbon Vapour Deposition method. These are used in the manufacturing of tool inserts for the automotive industry and as semiconductors in electronic devices.

KIMBERLEY PROCESS CERTIFICATION SCHEME UPDATE

In 2011, 254 Kimberley Process (KP) certificates were issued by Canada. These were primarily for exports to the European Community, the United States, India, and Israel. In addition, 282 shipments were imported to Canada under subheadings 7102.10, 7102.21, or 7102.31 of the *Customs Tariff*, thus requiring a KP certificate issued by the exporting country. These shipments came mostly from the United States and the European Community. More information on the implementation of the Kimberley Process in Canada is available on the Internet at www.nrcan-rncan.gc.ca/mms-smm/busi-indu/kpd-pkd-eng.htm.

At the end of the year, there were 49 Participants in the Kimberley Process, including the European Community with 27 member countries. However, two of these Participants, namely Venezuela and Ivory Coast, are listed as having special status as they have temporarily suspended their rough diamond imports and exports. These 49 Participants are believed to represent 99% of the world trade in diamonds. The Democratic Republic of Congo (DRC) chaired the KP in 2011 and was replaced by the United States of America for 2012.

The KP met October 31-November 3, 2011, in Kinshasa, DRC, for its ninth annual plenary. Discussions at the plenary were dominated by the situation in Zimbabwe where credible indications of significant non-compliance with the minimum requirements of the Kimberley Process Certification Scheme were observed during a review visit conducted from June 30 to July 4, 2009. These discussions led to an agreement on the details of a monitoring program to permit the export of diamonds originating in the Marange region of Zimbabwe. On KP reform, Plenary approved the formation of two ad hoc committees: one to develop proposals for an administrative support office for the KP, and a second to address KPCS review issues as they emerge, rather than undertaking one, all-encompassing review.

TRADE

The value of Canada's total primary exports of diamonds in 2011 is estimated at $2.57 billion, roughly at par with 2010, with the higher prices for the goods compensating for the lower volume exported. Canada's most important diamond export item is classified under Harmonized System (HS) code 7102.10, representing unsorted diamonds (Figure 2). Exports under this code, on a value basis ($1.9 billion), were mostly directed towards the United Kingdom (73%), Belgium (21%), and India (6%). The second most important trade item, on a value basis ($570 million), is classified under HS code 7102.31 (diamonds, non-industrial, unworked or simply sawn, cleaved or bruted) and largely represents Canadian mined diamonds that were sorted before export and were specifically destined for cutting and polishing. Diamonds in this category were sent to Antwerp, Belgium (75%), Israel (12%), and India (11%). The third most important export, on a value basis ($75 million), falls under HS code 7102.39, which represents cut gem-quality diamonds. These exports (Figure 3), sent mostly to the United States (68%), Vietnam (14%), Israel (6%), and China (5%) in 2011, have grown significantly over the past decade (Figure 4) and reflect the increase in cutting and polishing capacity and branding efforts in Canada. The rest of Canada's exports, industrial and synthetic diamonds mostly exported to the United States, amounted to a meager $158 000.

On the import side, Canada's total primary imports of diamonds in 2011, estimated to be valued at $716 million, increased by 14% relative to 2010. Its top import item (Figure 5) was cut diamonds, most exceeding 0.5 ct in weight, which were destined for jewellery manufacturing. Imports in 2011 reached $405 million, a 4% decrease from 2010. Shipments (Figure 6) were from the United States, India, and Israel (each accounting for 23%), and Belgium (14%), while re-imports from Canada accounted for 8% and imports from various other countries accounted for 9%. A more detailed view of the provenance of these imports for stones greater than 0.5 ct in size and for those smaller than 0.5 ct is shown in Figure 7. The second item of importance (also represented in Figure 6), uncut gem diamonds (mostly [86%] Canadian goods returned for the Canadian cutting industry's branding programs), corresponding to trade code items 7102.31 and 9813.00.00.41, amounted to $294 million in 2011, a 54% increase in value compared to 2010. This is significant as it follows an increase of 114% experienced over 2009. These increases illustrate the resumption of the cutting capacity at Canada's manufacturing facilities, which had been shuttered during the economic downturn (Figure 8). It is interesting to note, as shown in Figure 9, that imports of cut diamonds greater than 0.5 ct have generally increased over the past decade, indicating either an increase in jewellery manufacturing in Canada and/or branding/marketing activities. However, imports of smaller cut diamonds have diminished since 2007, as shown in Figure 10. The rest of Canada's diamond imports (unsorted diamonds, various industrial grades, natural dust, and synthetic diamonds [Figure 11]) were valued at $18 million. These were mostly imported from South Korea, the United States, Ireland, South Africa, Belgium, and China.

WORLD DEVELOPMENTS

Production

World production of natural rough diamonds in 2011, as publicly reported by the Kimberley Process Certification Scheme (Figure 12 and Table 2), is estimated at 124.0 Mct valued at US$14.4 billion, for an average price of US$116.19/ct. This represents a 3.4% decrease in production on a carat basis and a 26.5% increase on a value basis over that of 2010. Except for Botswana (4%) and Lesotho (106%) where significant increases in volume were seen, most significant rough diamond producers experienced important drops in the quantity produced during the year. Australia, with a drop in production of more than 2 Mct (21.5%), Canada with close to 1 Mct less (-8.55%), and DRC with 900 000 ct less (4.6%) were the most affected, followed by South Africa with 650 000 ct less (-7.4%) and Namibia with

440 000 ct less (-25.8%). The higher carat production in Botswana and Lesotho was due to the resumption of production capacity that had been suspended in response to a drop in demand brought on by the economic recession in 2008 and 2009, while the significant production declines observed in the countries mentioned above result mostly from the depletion of reserves and the transfer to underground operations. The significant increase in value stems essentially from a significant increase in market prices as a result of tighter supplies. Figure 13 and Figure 14 show the relative share of the world's rough diamond production, on a carat and a value basis, respectively, for each of the main producers.

Demand

Pursuing the trend witnessed in 2010, traders and manufacturers continued building up their inventories until the fourth quarter of the year when tightening credit conditions, brought on by European bank liquidity issues, forced a slowdown in the industry. Overall, according to the *Diamond Intelligence Briefs*, worldwide retail sales of diamond jewellery in 2011 increased by 17.7% to an estimated US$70.8 billion compared to 2010, after having increased 2.5% the year before. The value of the diamond content in diamond jewellery retail sales was estimated at US$23.6 billion, or 33% of retail sales.

Retail markets are reported to have been dominated again by the Americas (38%), but to a smaller degree, while demand from India and China remained strong with shares of 12% and 11%, respectively. Japan accounted for 8%; the Gulf area for 7%; Hong Kong, Turkey, and Taiwan for 2% each; and others for 18%. It is interesting to note that in emerging markets such as China and India, demand is expected to grow at an annual rate of 10-15% over the coming decade while the rate in North America is expected to increase by about 3%. Strong competition between manufacturing centres to access rough diamonds played on during the year with the Indian industry pursuing its efforts to better position itself by trying to access rough diamonds directly from producers in countries such as Zimbabwe, Canada, and Russia.

PRICES

There are no internationally set prices for rough diamonds such as there are for precious metals like gold, silver, and platinum, and for base metals such as copper, lead, and zinc. The market prices for rough natural diamonds are almost constantly in a state of flux in response to the supply of, and demand for, each of the many categories of diamonds.

Natural Diamonds

Gem-quality rough diamonds: While there are no internationally set prices for rough gem-quality diamonds, De Beers SA's marketing agency, the Diamond Trading Company (DTC), which controls about 40% of the world's rough diamond supply, holds 10 sales a year, at regular intervals, to market its production. These are called "sights." Other major rough diamond producers also hold similar sights. As a result of efforts to rebuild stocks throughout the diamond pipeline, which exercised pressure on market supplies, DTC prices during 2011 are reported to have increased by about 37% in the first nine months of the year. However, prices are said to have retreated by 7-8% in the last three months of 2011 as demand fell due to tightening credit conditions brought about by European banks burdened by high debt levels. Overall, the prices experienced during the year by the DTC are reported to have increased by 29%. If these prices are compared with the average (all categories aggregated) per-carat value indicated by Kimberley Process production statistics for 2011, the latter increased by 30.9% relative to 2010 for an average per-carat price of US$116.19.

The price of a rough stone depends on its carat weight, shape, clarity, and colour. Prices vary widely, but the following is an indication of the prices paid at cutting and polishing factories for gem-quality rough

stones: a 1-ct stone that sells for around US$20 is very low quality, US$200 is medium quality, US$400 is good quality, and US$1000+ is top quality.

Natural industrial diamonds: Crushing bort sells for about US15¢/ct, casting sells for US$1-$2/ct, industrial stones sell for US$11-$18/ct, flets (e.g., a high-quality thin macle) sell for US$50/ct, and dies (larger diamonds of high quality but with poor [often yellow] colour that makes them unsuitable as gems) sell for up to US$200/ct.

Synthetic Diamonds

Synthetic diamond prices depend on their particle strength, size, and shape, and on whether or not the diamonds are coated with a metal, etc. For this reason, there are several hundred prices for synthetic industrial diamonds. Generally speaking, synthetic diamonds used in grinding and polishing vary in price from US30¢ to US$1/ct. Strong and blocky material for use in sawing and drilling, and known in the trade as SDA and MBS (Saw Diamond Abrasive and Metal Bond Sawing), produced respectively by De Beers and General Electric, sells for up to US$3/ct. Large single crystals with excellent structure for use in specific applications sell for several hundred dollars per carat.

OUTLOOK

Although Canada's status as an important diamond-producing country is recent, its industry already generates mining revenues estimated in 2011 at $2.5 billion and provides an estimated 4000 direct Canadian jobs and an equivalent number of indirect jobs in the service industries. The opening of the Gahcho Kué mine, tentatively set for early 2015, and potential new production capacity from a number of projects currently at an advanced stage of development are expected to compensate for lower production from Diavik and Ekati in the years to come as they gradually rely more on underground operations. This will enable Canada's share of the world's diamond production to hover at between 12% and 20% for the foreseeable future (Figure 15). It will also ensure prosperous times to come for the economy of many Canadian regions, including Aboriginal communities, as well as those major Canadian cities that serve as hubs for the financial markets, equipment manufacturing companies, and allied industries.

In the short term, Canada's 2012 diamond production is forecast to increase by about 15% over 2011 to approximately 12.6 Mct, while Canadian exploration expenditures for diamonds are forecast to stand at about $135 million (source: Natural Resources Canada, based on company information).

At the international level, consumer demand for diamond jewellery is expected to grow as disposable income increases, especially in India and China, and the supply of rough diamonds is expected to decrease as mining reserves are not replenished by significant discoveries. This should force mid- to long-term prices for rough diamonds and for diamond jewellery to increase, albeit at a slower pace than observed in 2011. In the short term, however, rough diamond prices are forecast to hover around current values as a build-up of inventory works its way through the market.

The arrival of Canada on the diamond industry scene has helped change the way business is done, the effects of which will continue for the short-to-medium term. For example, De Beers' share of supplies of rough diamonds has declined from about 95% in the mid-1900s to about 40% by value. As a result, a number of industry players are positioning themselves to be present at various levels of the diamond pipeline from "mines to market," either to ensure their supply of rough diamonds or to maximize their profits. At the same time, mining-based countries such as South Africa, Botswana, Angola, Namibia, and Canada, are encouraging the development of a domestic downstream industry to maximize the benefits accruing from the mining of their resources. This, in turn, is putting pressure on traditional manufacturing countries such as India, that now have to jostle with these newcomers in the industry to source the rough

diamond supplies they require from the limited amount of rough diamonds available on the market. In the polished diamond industry, there has been a movement towards branding and associating the product with purity or high quality of colour, clarity, and cut, or with other known brand names, as seen with the Canadian Arctic Diamond certificate of the Government of the Northwest Territories; the Aurias and Canada Mark diamonds from BHP Billiton, which guarantee the source as Canada and the quality of cut to be up to triple excellent; and the joint marketing agreement between De Beers and LVMH, the European marketer associated with luxury goods. It is expected that the success these brands gain with customers will require significant long-term marketing efforts.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to the document entitled "Definitions and Valuation: Mineral Production, Shipments, and Trade." (2) Information in this review was current as of January 1, 2012. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/minerals-metals/business-market/canadian-minerals-yearbook/4070.

Diamonds - Other Information

BACKGROUND

Canada's current diamond production comes from four mines: the Ekati™, Diavik, and Snap Lake mines located about 300 kilometres (km) northeast of Yellowknife in the Northwest Territories (N.W.T.), and the Victor mine located in northern Ontario (Figure 1). The opening of these mines has created some 8000 direct and indirect jobs (including contractors working on projects under construction and jobs in ancillary industries) and has resulted in the formation of several hundred Aboriginal companies.

Canada also has a small diamond manufacturing industry. At the end of 2011, there were four diamond manufacturers in operation across Canada. They were located in Yellowknife (N.W.T.), Vancouver (British Columbia), Prince Albert (Saskatchewan), and Sudbury (Ontario). These cutting and polishing factories provide work for about 55 people. Limited cutting and polishing work is also performed in Winnipeg (Manitoba), Toronto (Ontario), and Montréal (Quebec).

USES[1]

Diamond is best known as a gemstone, but only 20% of the world's production by weight is used in jewellery. The other 80%, known as bort, is destined for industrial uses and research applications where diamond's unique properties are put to great use. About 170 Mct, or 36 000 kilograms (kg), of diamonds are mined annually worldwide. In addition to mined diamonds, close to 600 million carats (Mct) (or 120 000 kg) of synthetic diamonds are produced annually for industrial use.

Diamond is the hardest known material and has the highest thermal conductivity of any material at room temperature. It is more than twice as hard as its nearest competitors: cubic boron nitride and silicon nitride. Because it is the hardest substance known, diamond has been used for centuries as an abrasive in cutting, drilling, grinding, and polishing. This currently represents the dominant industrial use of diamond. Even though it has a higher unit cost, diamond has proven to be more cost-effective in many industrial processes because it cuts faster and lasts longer than alternative abrasive materials. Diamond

also has chemical, electrical, optical, and thermal characteristics that make it the best material available to industry for wear- and corrosion-resistant coatings, special lenses for laser radiation equipment, heat sinks in electrical circuits, wire drawing, polishing silicon wafers and disk drives in the computer industry, and other advanced technologies.

Most diamond uses in these technologies do not require large diamonds; in fact, most diamonds that are gem-quality except for their small size can find an industrial use. Diamonds are embedded in drill tips or saw blades, or are ground into a powder for use in grinding and polishing applications. Synthetic industrial diamonds are superior to their natural diamonds counterpart because their properties can be tailored to specific applications and they can be produced in large quantities. It is for these reasons that synthetic diamonds account for about 82% of the industrial diamonds used in the world.

Diamond tools have numerous industrial functions. Diamond drilling bits and reaming shells are used principally for gas, mineral, and oil exploration. Other applications of diamond bits and reaming shells include foundation testing, masonry drilling, and inspecting concrete. The primary uses of point diamond tools are for dressing and truing grinding wheels, and for boring, cutting, finishing, and machining applications. Beveling glass for automobile windows is another application. Cutting dimension stone and cutting/grooving concrete in highway reconditioning are the main uses of diamond saws; other applications include cutting composites and forming refractory shapes for furnace linings. Very fine diamond saws are used to slice brittle metals and crystals into thin wafers for electronic and electrical devices. Diamond wire dies are essential for the high-speed drawing of fine wire, especially from hard, high-strength metals and alloys. The primary uses of diamond grinding wheels include edging plate glass, grinding dies, grinding parts for optical instruments, and sharpening and shaping carbide machine tool tips.

Synthetic diamond grit and powder are used in diamond grinding wheels, saws, impregnated bits, and tools, and as a loose abrasive for polishing. Loose powders made with synthetic diamonds for polishing are used primarily to finish cutting tools, gemstones, jewel bearings, optical surfaces, silicon wafers, and wire-drawing dies for computer chips.

The use of polycrystalline diamond shapes (PDSs) and polycrystalline diamond compacts (PDCs) continues to increase for many of the applications cited above, including some of those that use natural diamonds. The use of PDSs, PDCs, and matrix-set synthetic diamond grit for drilling bits and reaming shells has increased in recent years. PDSs and PDCs are used in the manufacture of single- and multiple-point tools, and PDCs are also used in a majority of the diamond wire-drawing dies.

KIMBERLEY PROCESS CERTIFICATION SCHEME

The Kimberley Process (KP) is an international agreement between diamond-producing and trading countries, representatives of civil society, and industry that was negotiated to prevent conflict diamonds from entering into legitimate diamond trade. Conflict diamonds are those diamonds sold by rebel forces to purchase arms for use in conflict against legitimate governments. The KP derives its name from the city in South Africa that is synonymous with diamonds. It came into force on January 1, 2003.

Under the Kimberley Process Certification Scheme, all exports of rough diamonds must be accompanied by a certificate (issued by the government or an agency authorized by the government of the exporting country) confirming that shipments of rough diamonds are free from conflict diamonds. Trade in rough diamonds can only occur between Participants. In order to be a Participant, governments are required to have appropriate legislation in place that allows for adequate enforcement of the terms and conditions of the Scheme.

In order for Canada to meet its obligations as a Participant in the Kimberley Process Certification Scheme, new legislation and regulations needed to be created. On October 12, 2002, Bill C-14, *The Export and Import of Rough Diamonds Act*, was passed into law and permitted Canada to begin implementation of the certification scheme on January 1, 2003.

More information is available on Natural Resources Canada's web site at www.kimberleyprocess.com or at the following web sites:

- Partnership Africa Canada www.pacweb.org
- The World Diamond Council www.worlddiamondcouncil.com
- Global Witness www.globalwitness.org

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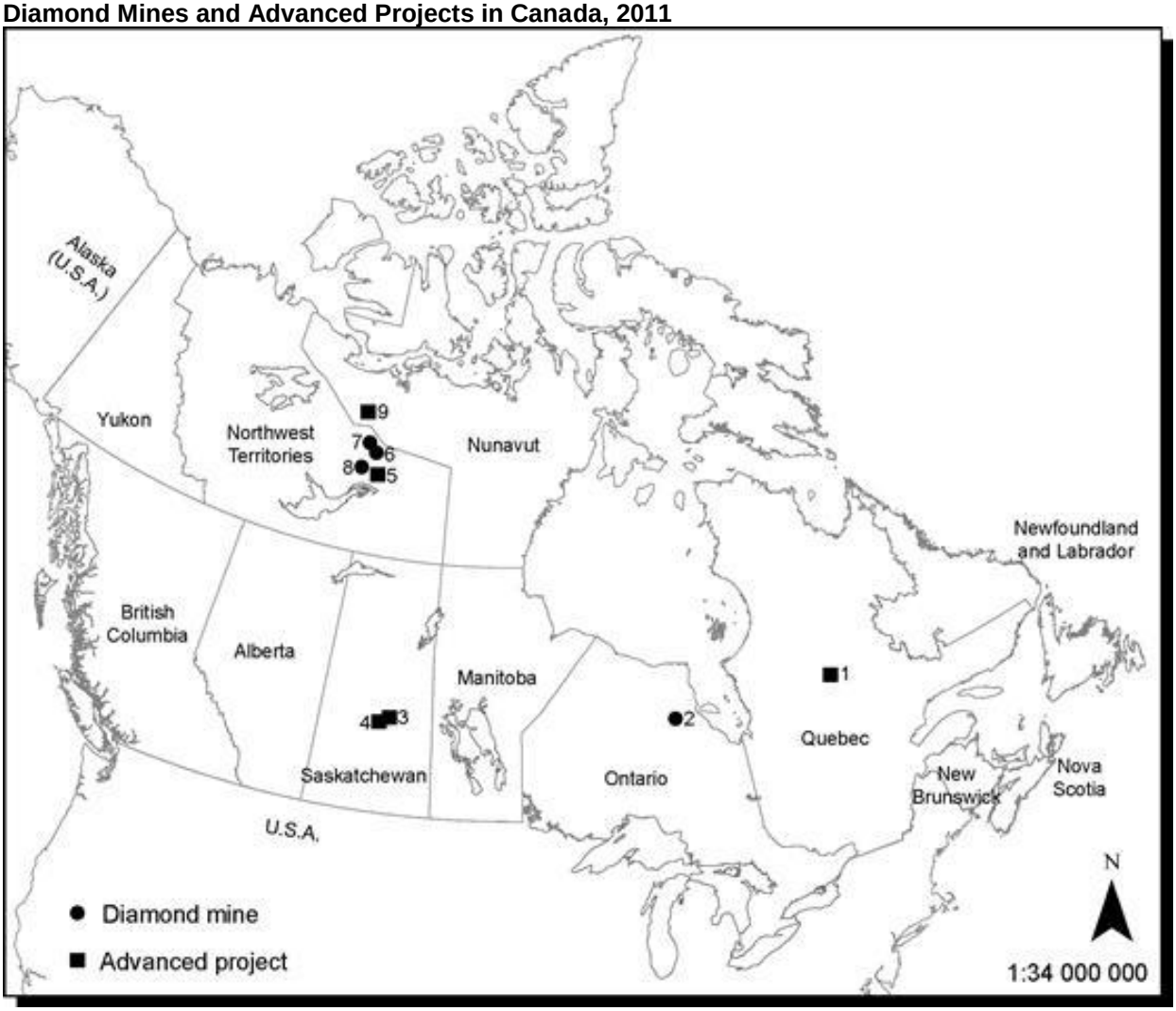
[1] The sources for some information in this section were the U.S. Geological Survey's *2005 Minerals Yearbook* article on Industrial Diamonds (http://minerals.usgs.gov/minerals/pubs/commodity/diamond/diamomyb05.pdf) and Wikipedia (http://en.wikipedia.org/wiki/Diamond).

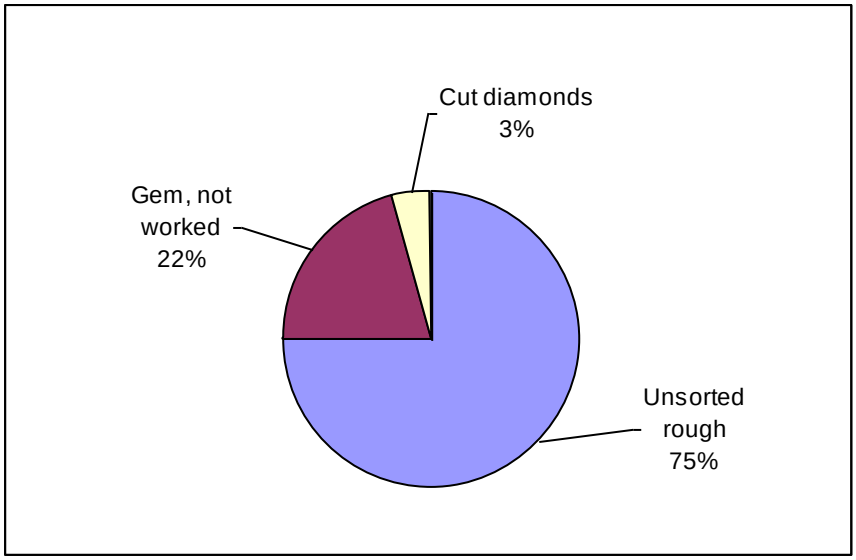
Figure 1
Diamond Mines and Advanced Projects in Canada, 2011



Legend:

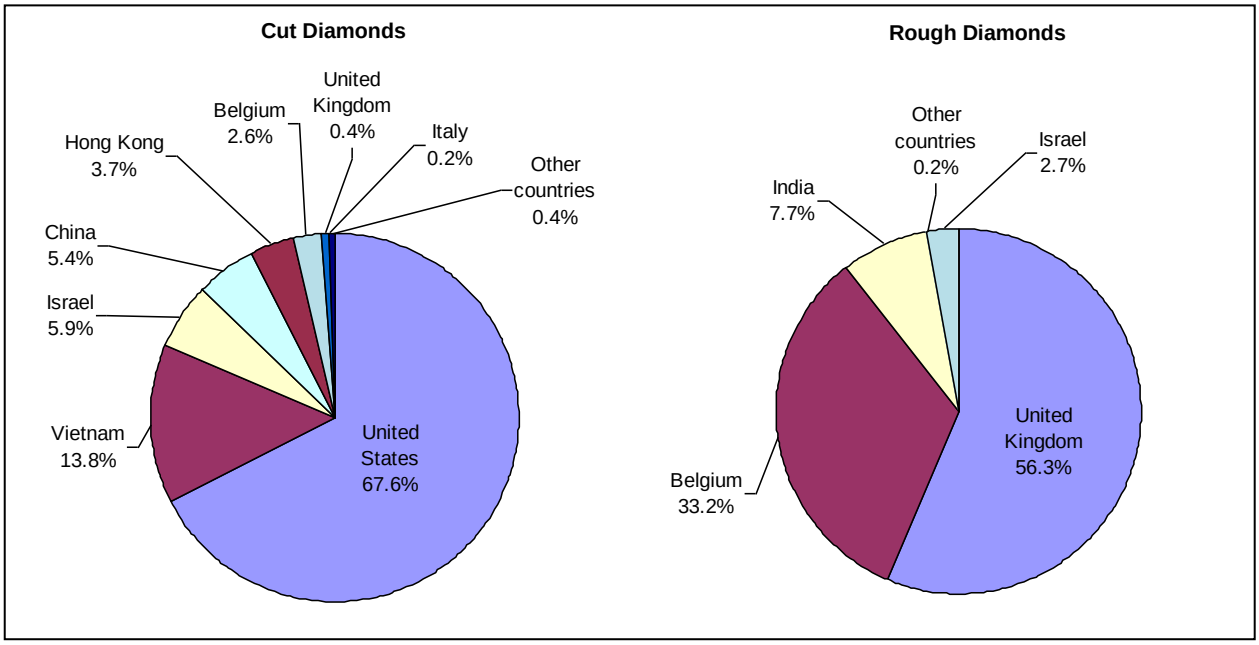
1. Jericho
2. Ekati
3. Diavik
4. Snap Lake
5. Gahcho Kué
6. Foxtrot
7. Victor
8. Star
9. Fort-à-la-Corne

Figure 2
Canadian Diamond Exports, By Product Type, By Value, 2011



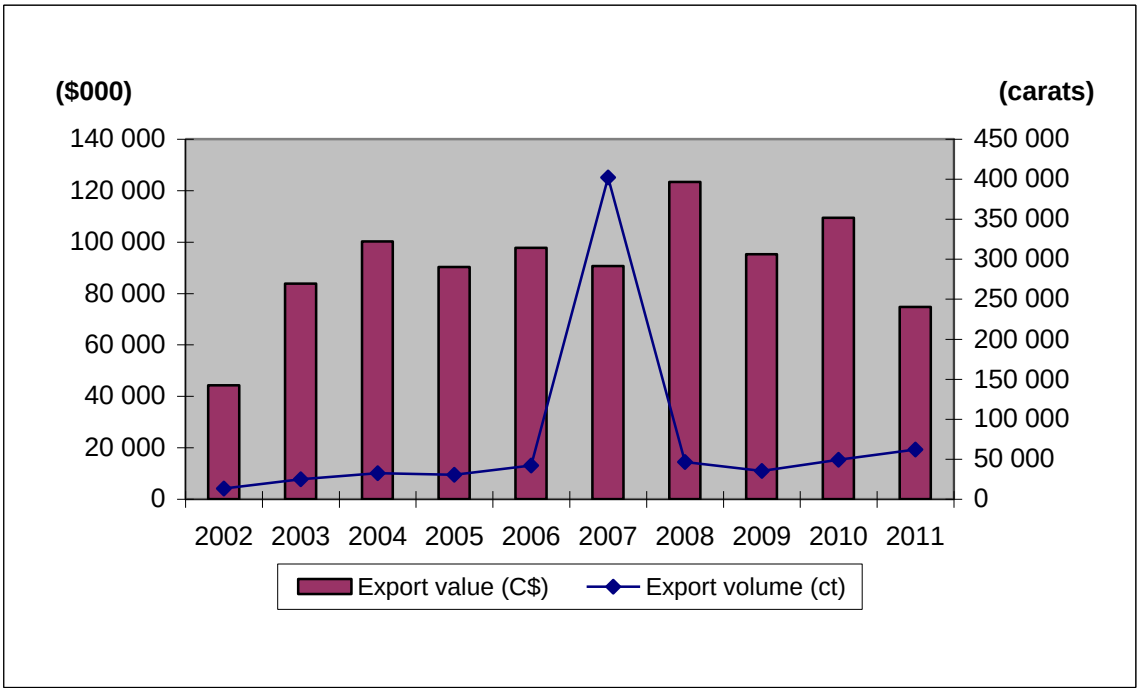
Source: Statistics Canada.

Figure 3
Canadian Diamond Exports, By Country, By Value, 2011



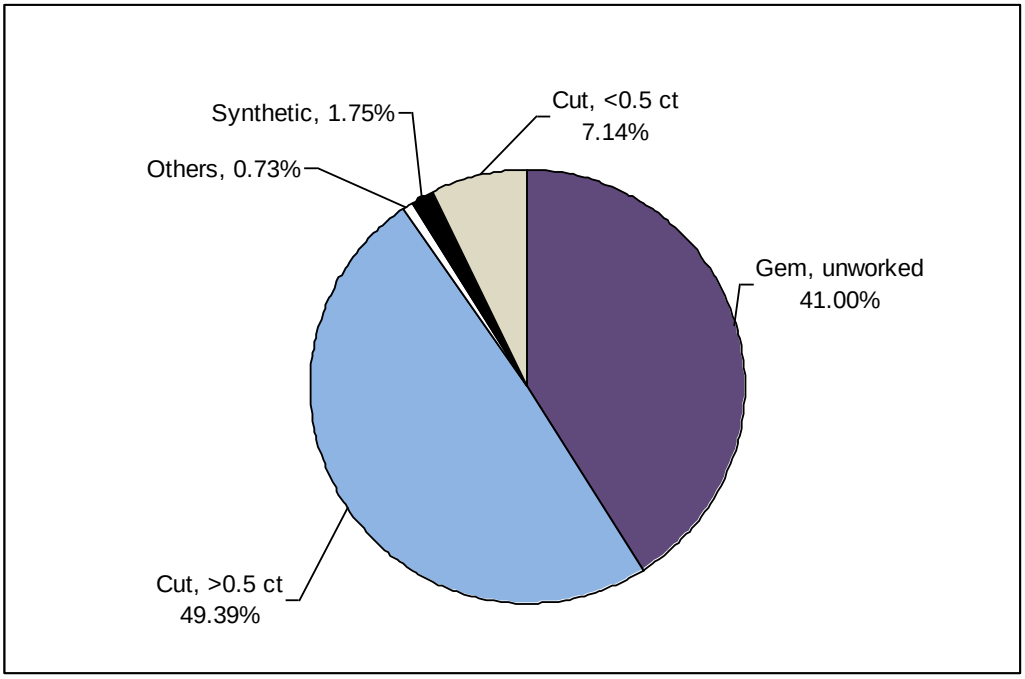
Source: Statistics Canada.

Figure 4
Canadian Cut Diamond Exports, 2002-11



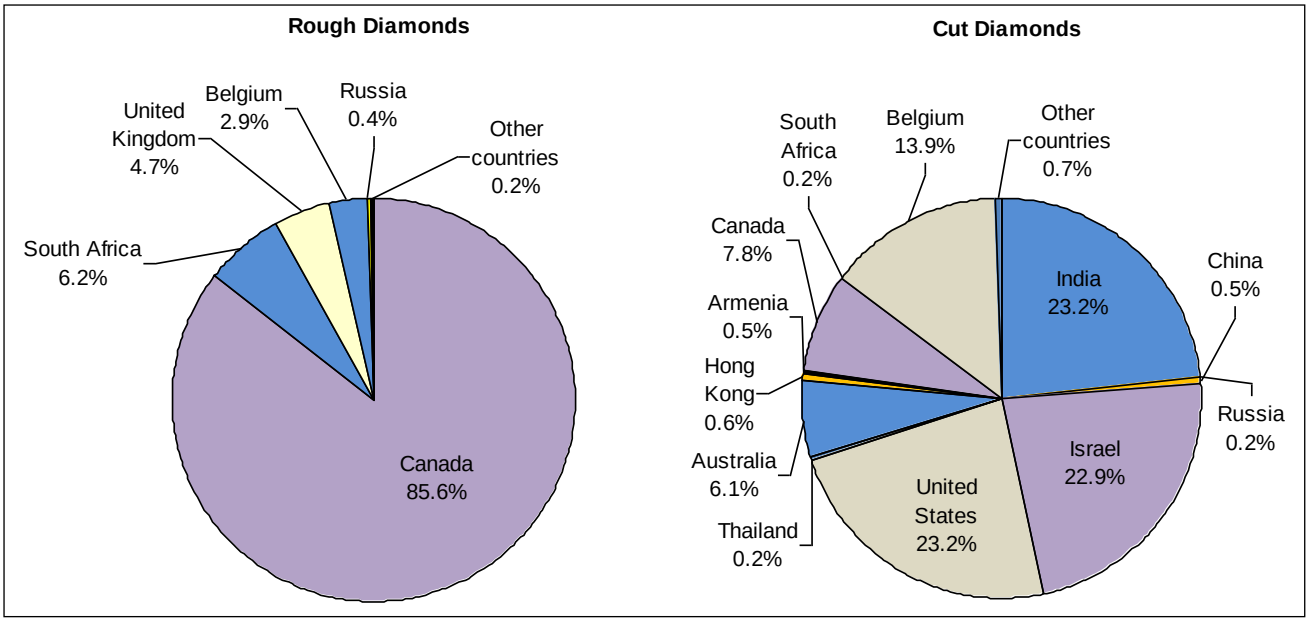
Source: Statistics Canada.

Figure 5
Canadian Diamond Imports, By Product Type, By Value, 2011



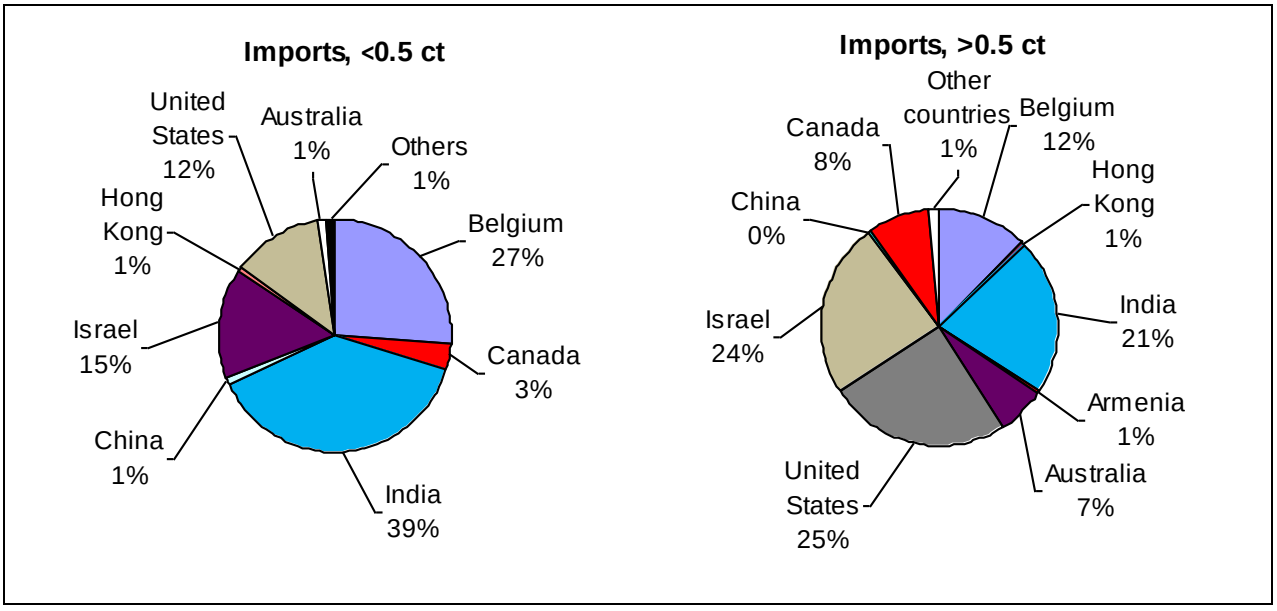
Source: Statistics Canada.

Figure 6
Canadian Diamond Imports, By Country, By Value, 2011



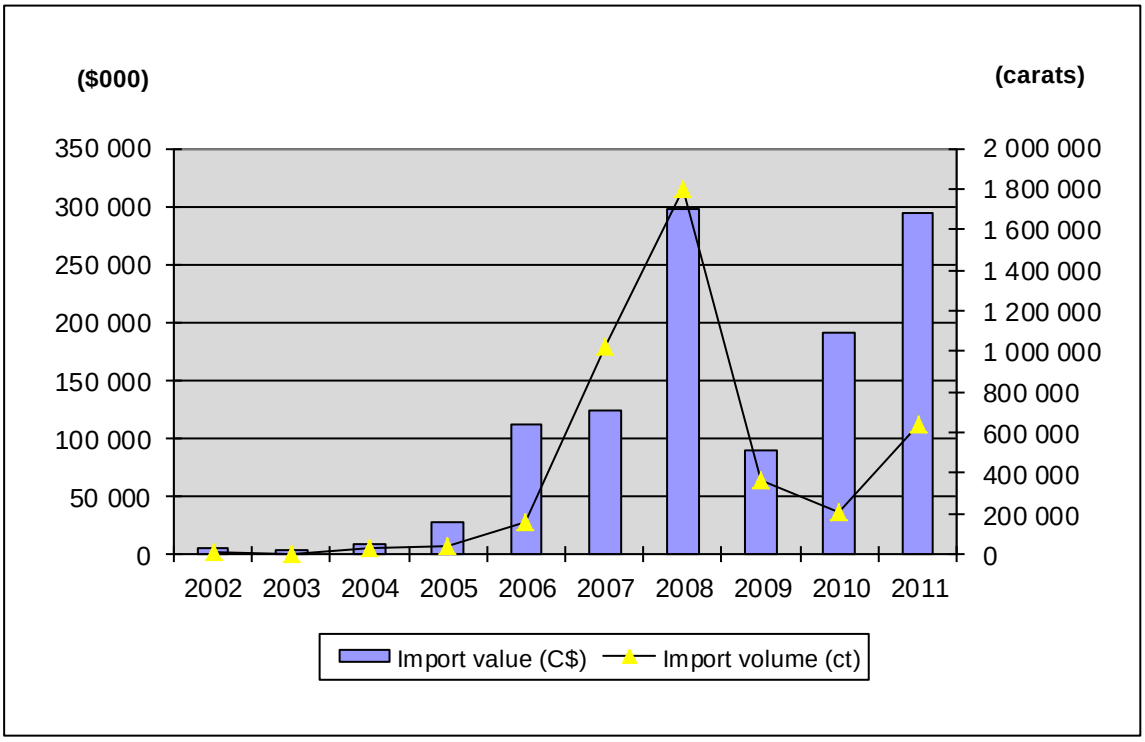
Source: Statistics Canada.

Figure 7
Canadian Cut Diamond Imports, By Country, By Value, 2011



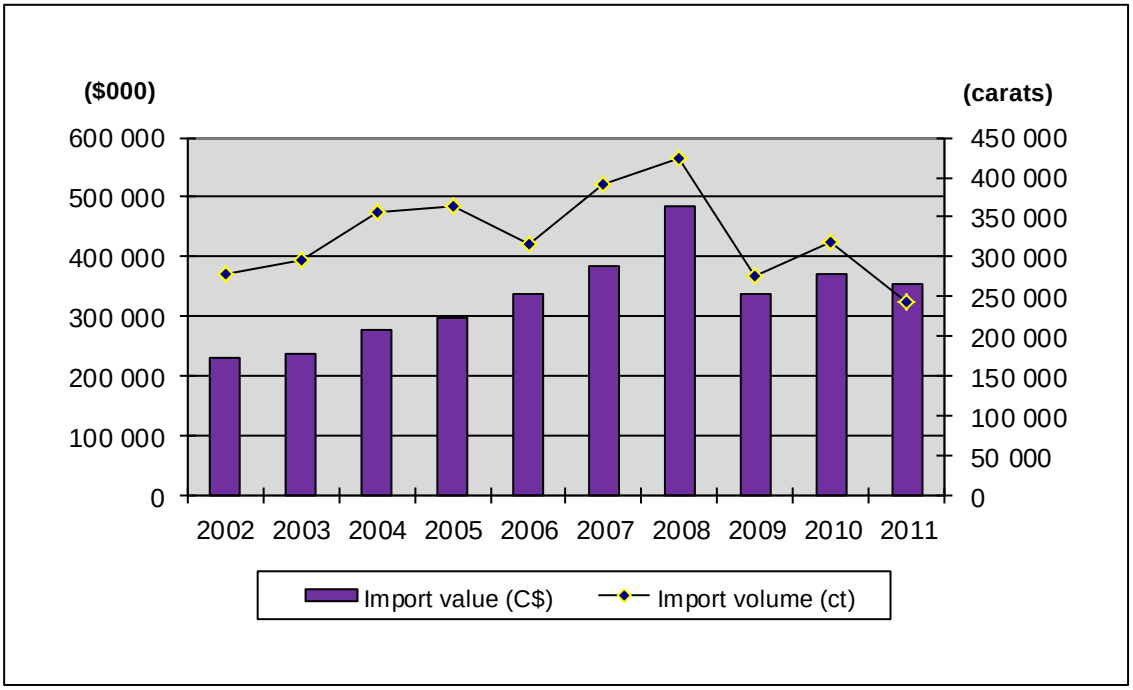
Source: Statistics Canada.

Figure 8
Canadian Gem-Quality Rough Diamond Imports, 2002-11



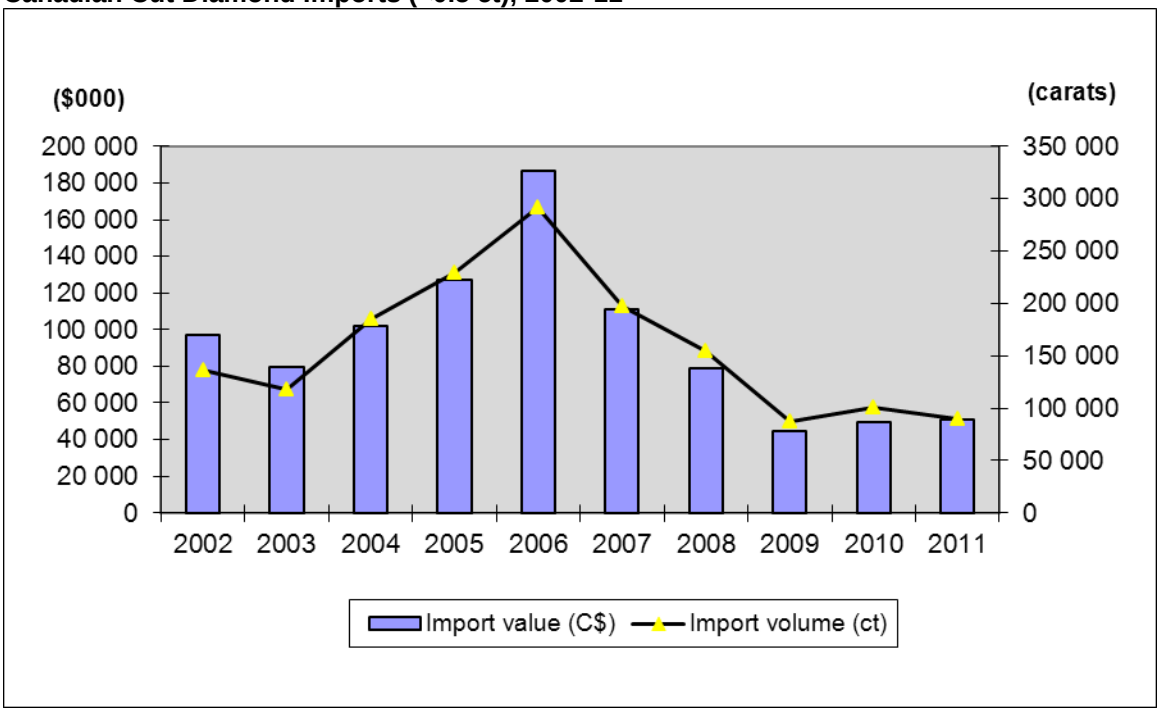
Source: Statistics Canada.

Figure 9
Canadian Cut Diamond Imports (>0.5 ct), 2002-11



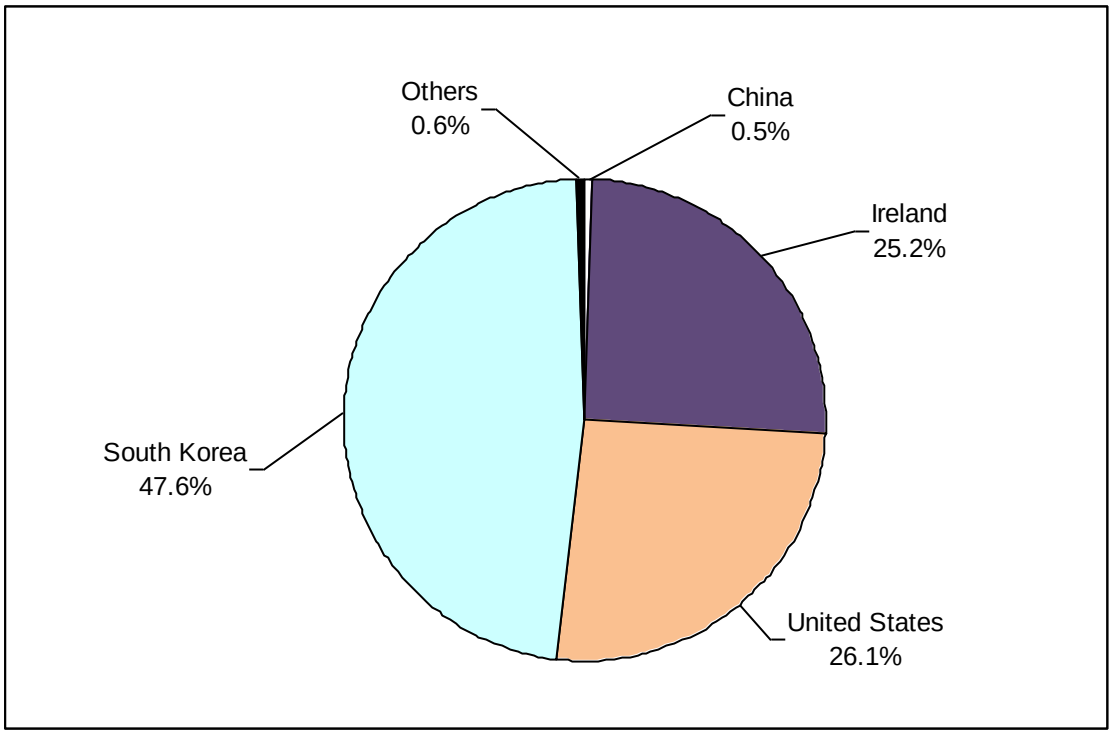
Source: Statistics Canada.

Figure 10
Canadian Cut Diamond Imports (<0.5 ct), 2002-11



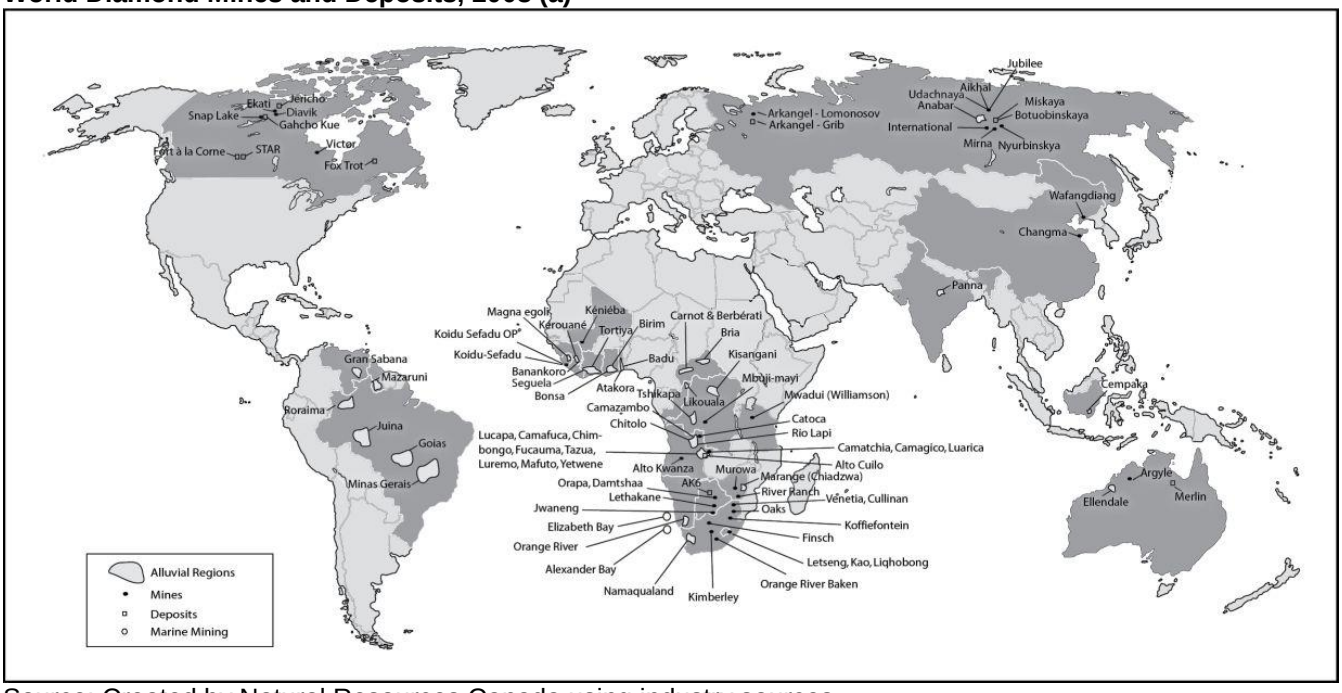
Source: Statistics Canada.

Figure 11
Canadian Synthetic Diamond Imports, By Country, By Value, 2011



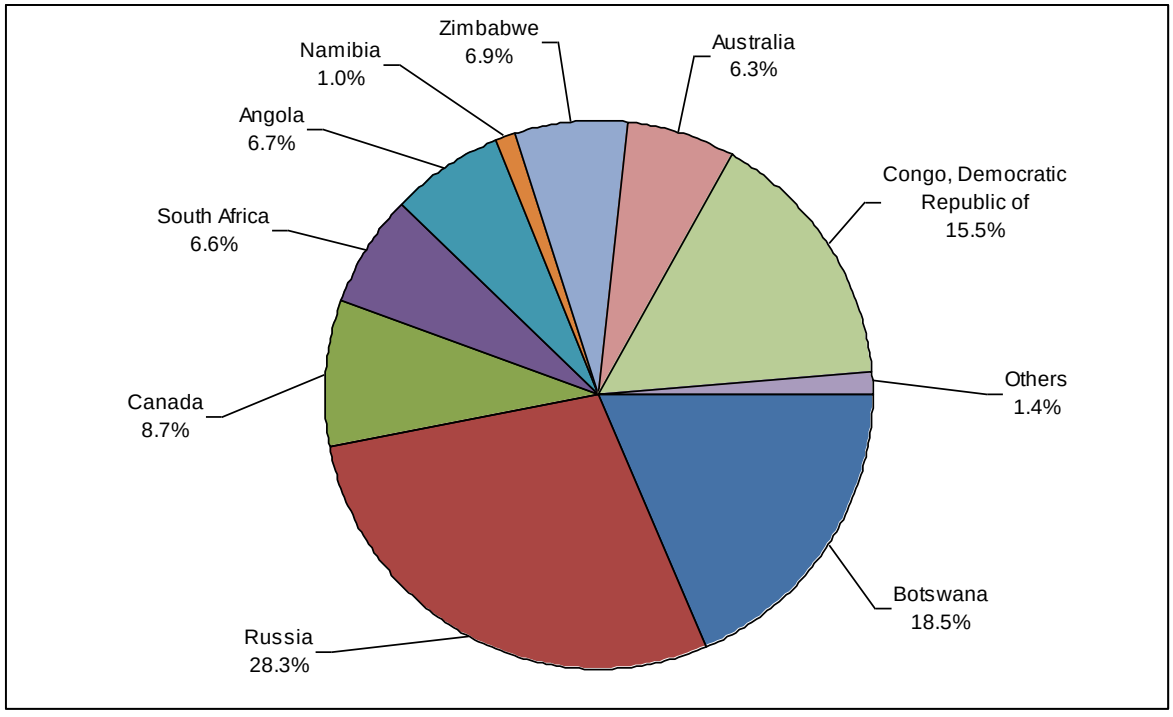
Source: Statistics Canada.

Figure 12
World Diamond Mines and Deposits, 2008 (a)



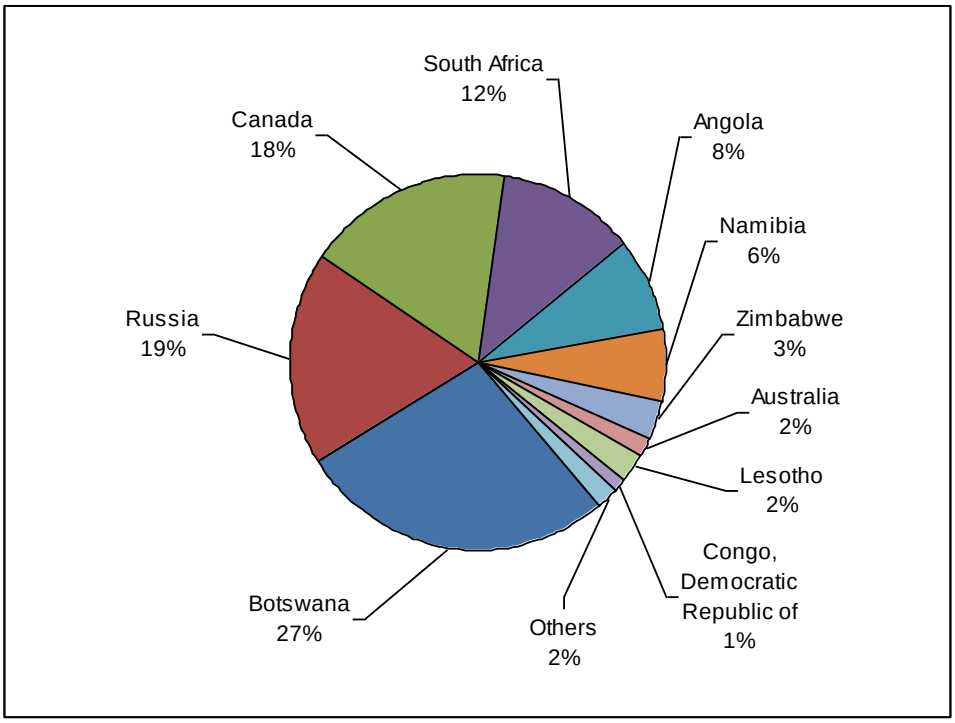
Source: Created by Natural Resources Canada using industry sources.
(a) Date of last update.

Figure 13
Share of World Rough Diamond Production (Carat Basis), 2011



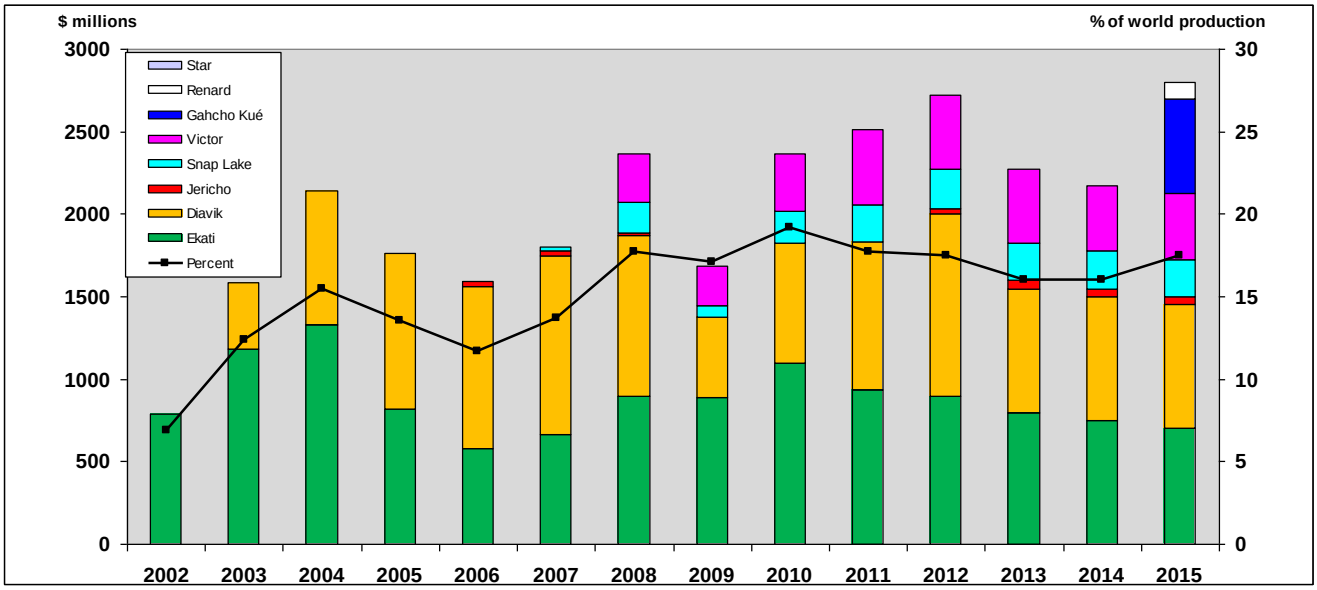
Source: Kimberley Process Certification Scheme.

Figure 14
Share of World Rough Diamond Production (Value Basis), 2011



Source: Kimberley Process Certification Scheme.

Figure 15
Canada's Diamond Production, Projected Gross Revenue, (1) 2002-15



Source: Natural Resources Canada.
(1) As of December 2011.

TARIFFS

Item No.	Description	Canada			United States	European Union	Japan
		MFN	GPT	USA	Canada	Conventional Rate (1)	WTO (2)
7102.10	Diamonds, whether or not worked, but not mounted or set: unsorted	Free	Free	Free	Free	Free	Free
7102.21	Diamonds, whether or not worked, but not mounted or set: industrial: unworked or simply sawn, cleaved or bruted	Free	Free	Free	Free	Free	Free
7102.29	Diamonds, whether or not worked, but not mounted or set: industrial: other	Free	Free	Free	Free	Free	Free
7102.31	Diamonds, whether or not worked, but not mounted or set: non-industrial: unworked or simply sawn, cleaved or bruted	Free	Free	Free	Free	Free	Free
7102.39	Diamonds, whether or not worked, but not mounted or set: non-industrial: other	Free	Free	Free	Free	Free	Free
7105.10	Dust and powder of natural or synthetic precious or semi-precious stones: of diamonds	Free	Free	Free	Free	Free	Free
9813	Goods, including containers or coverings filled or empty, originating in Canada, after having been exported therefrom, if the goods are returened without having been advanced in value or improved in condition by any process of manufacture or other means, or combined with any other article aboard						
9813.00.00.41	Diamonds of sections XIV otherwise classifiable to 71.02: Diamonds otherwise classifiable to 7102.10, 7102.21 or 7102.31	Free	Free	Free	n.a.	n.a.	. .
9813.00.00.49	Diamonds of Sections XIV otherwise classifiable to 71.02: other diamonds otherwise classifiable to 7102.29 or 7102.39	Free	Free	Free	n.a.	n.a.	. .

Sources: Canadian *Customs Tariff*, effective January 2011, Canada Border Services Agency; *Harmonized Tariff Schedule of the United States*, 2011; *Official Journal of the European Union* (Tariff Information), October 29, 2010 edition; *Customs Tariff Schedules of Japan,* 2011.
GPT General Preferential Tariff; MFN Most Favoured Nation; WTO World Trade Organization.
. . Not available; n.a. Not applicable.
(1) The customs duties applicable to imported goods originating in countries that are Contracting Parties to the General Agreement on Tariffs and Trade or with which the European Community has concluded agreements containing the most-favoured-nation tariff clause shall be the conventional duties shown in column 3 of the Schedule of Duties. (2) WTO rate is shown; lower tariff rates may apply circumstantially.

TABLE 1. CANADA, DIAMOND PRODUCTION AND TRADE, 2009-11

		2009		2010		2011 (p)	
		(carats)	($000)	(carats)	($000)	(carats)	($000)
PRODUCTION							
Ontario		696 498	236 364	798 897	347 680	797 134	453 362
Northwest Territories		10 249 600	1 447 940	11 005 199	2 029 468	9 998 125	2 069 630
Total		**10 946 098**	**1 684 304**	**11 804 096**	**2 377 147**	**10 795 259**	**2 522 992**
EXPORTS							
7102.10	Diamonds, unsorted, whether or not worked, but not mounted or set						
	United Kingdom	4 135 350	1 003 234	4 604 818	1 574 846	3 195 926	1 400 438
	Belgium	2 976 404	244 791	3 619 317	330 496	3 562 831	401 022
	India	–	–	45 954	4 907	883 274	126 751
	Other countries	8	87	27	6	1 101	106
	Total	**7 111 762**	**1 248 112**	**8 270 116**	**1 910 255**	**7 643 132**	**1 928 317**

7102.21	Diamonds, industrial, unworked or simply sawn, cleaved or bruted						
	United Kingdom	–	–	–	–	1 393	69
	Hong Kong	–	–	–	–	14	1
	Total	**–**	**–**	**–**	**–**	**1 407**	**70**
7102.29	Diamonds, industrial, other.						
	United States	5	24	1	3	84	45
7102.31	Diamonds, non-industrial, unworked or simply sawn, cleaved or bruted						
	Belgium	2 155 311	286 910	1 640 748	370 337	1 476 532	428 250
	Israel	414	719	26 988	57 792	41 118	67 610
	India	1 212 815	21 878	1 168 185	26 688	1 422 747	64 665
	United Kingdom	1 113 993	165 084	698 315	78 644	45 152	5 687
	Other countries	1 338	1 715	2 920	5 564	5 078	4 099
	Total	**4 483 871**	**476 306**	**3 537 156**	**539 025**	**2 990 627**	**570 311**
7102.39	Diamonds, non-industrial, other						
	United States	25 252	67 100	33 151	78 318	35 133	50 502
	Vietnam	350	1 066	3 904	12 713	3 583	10 278
	Israel	1 342	1 076	899	4 495	2 987	4 429
	China	23	11	790	3 079	776	3 998
	Hong Kong	1 391	1 231	4 335	568	13 933	2 777
	Belgium	2 791	5 122	1 879	3 315	5 093	1 961
	United Kingdom	49	231	112	338	134	309
	Italy	56	102	64	89	96	139
	Other countries	3 768	19 348	3 823	6 552	337	335
	Total	**35 022**	**95 287**	**48 957**	**109 467**	**62 072**	**74 728**
7105.10	Natural or synthetic diamond dust and powder						
	Australia	–	–	–	–	25 000	35
	United States	4 536	4	8 129	5	12 086	5
	Germany	–	–	–	–	6 000	3
	Total	**4 536**	**4**	**8 129**	**5**	**43 086**	**43**
Total exports		**11 635 196**	**1 819 733**	**11 864 359**	**2 558 755**	**10 740 408**	**2 573 514**
IMPORTS							
7102.10	Diamonds, unsorted, whether or not worked, but not mounted or set						
	United States	44	60	11	35	6	54
	Belgium	–	–	1	14	11	16
	India	9	106	24	80	1	14
	Other countries	7	81	267	111	39	17
	Total	**60**	**247**	**303**	**240**	**57**	**101**
7102.21.00.10	Diamonds, industrial, bort and black, diamonds for borers, unworked or simply sawn cleaved or bruted, but not mounted or set						
	South Africa	74 225	724	136 084	1 109	170 656	1 164
	Belgium	36 411	145	78 974	265	134 609	496
	United States	835	16	9	. . .	51 054	263
	Australia	5 744	55	15 034	57	21 496	89
	Ireland	–	–	–	–	267	13
	Other countries	27 675	159	41 893	124	–	–
	Total	**144 890**	**1 099**	**271 994**	**1 555**	**378 082**	**2 025**
7102.21.00.90	Diamonds, industrial, other, unworked or simply sawn, cleaved or bruted, but not mounted or set						
	South Africa	6 213	299	17 954	374	6 375	322
	Australia	4 641	75	873	32	1 221	55
	Botswana	273	10	424	15	535	35
	Ireland	–	–	–	–	251	13
	United States	366	11	2 748	40	671	9
	Congo	–	–	–	–	168	9
	Saudi Arabia	1 602	21	68	3	1 030	5
	United Kingdom	–	–	370	22	91	4
	Gabon	–	–	–	–	49	3
	India	–	–	–	–	62	3
	Other countries	3 241	161	41	3	. .	. . .
	Total	**16 336**	**577**	**22 478**	**489**	**10 453**	**458**

7102.29.00.10	Diamonds, industrial, other, bort and black diamonds, for borers, but not mounted or set						
	United States	188	28	61	14	115	15
	China	7	2	–	–	39	9
	Japan	–	–	. .	. . .	9	2
	France	–	–	–	–	2	1
	Germany	–	–	–	–	2	1
	Other countries	20	5	43	6	–	–
	Total	**215**	**35**	**104**	**20**	**167**	**28**
7102.29.00.90	Diamonds, industrial, other, other than bort and black, for borers, worked but not mounted or set						
	United States	4 430	121	1 018	265	721	216
	Japan	117	41	189	75	1 763	114
	South Africa	180	64	26	8	125	36
	Israel	14	5	111	40	59	24
	Brazil	–	–	–	–	51	18
	Belgium	301	12	690	262	45	14
	South Korea	91	32	20	7	30	10
	Ireland	–	–	5	2	25	9
	Australia	9	3	–	–	12	4
	China	460	2	121	4	209	4
	Other countries	223	69	168	11	16	5
	Total	**5 825**	**349**	**2 348**	**674**	**3 056**	**454**
7102.31	Diamonds, non-industrial, unworked or simply sawn, cleaved or bruted						
	Canada	16 161	20 280	53 205	40 051	29 170	44 835
	South Africa	394	49	2 349	1 568	16 449	18 181
	United Kingdom	1 990	4 019	24 279	38 321	5 530	13 696
	Belgium	2 611	2 575	21 113	12 493	8 772	8 627
	Russia	–	–	–	–	1 379	1 049
	Iceland	–	–	–	–	356	507
	Other countries	196	134	4 894	3 815	173	124
	Total	**21 352**	**27 057**	**105 840**	**96 248**	**61 829**	**87 019**
7102.39.00.10	Diamonds, non-industrial, other, of a weight not exceeding 0.5 carats each						
	India	38 902	12 787	38 824	14 056	43 683	19 707
	Belgium	16 177	10 890	27 535	17 419	17 809	13 383
	Israel	11 311	8 436	15 295	7 739	10 066	7 868
	United States	9 816	6 331	11 403	6 315	11 898	6 386
	Canada	6 393	2 949	358	472	2 018	1 779
	Australia	602	913	1 077	1 539	903	822
	China	1 338	746	3 696	883	1 842	503
	Hong Kong	188	110	1 201	158	988	338
	Other countries	2 231	1 235	780	625	695	353
	Total	**86 958**	**44 397**	**100 169**	**49 206**	**89 902**	**51 139**
7102.39.00.20	Diamonds, non-industrial, other, of a weight exceeding 0.5 carats each						
	United States	33 998	72 651	38 079	81 681	38 802	87 384
	Israel	65 408	88 385	58 334	91 355	48 213	84 703
	India	101 173	68 796	117 906	82 844	78 618	74 287
	Belgium	30 133	46 010	36 047	50 534	26 398	42 973
	Canada	16 755	22 090	28 844	21 251	20 079	29 939
	Australia	19 909	29 833	27 136	30 966	20 025	23 876
	Hong Kong	617	957	1 056	1 283	1 529	2 184
	Armenia	37	76	291	438	1 861	1 955
	China	1 694	2 633	4 833	5 026	2 881	1 532
	Thailand	1 213	570	1 844	929	1 180	968
	South Africa	633	1 674	573	2 912	1 165	859
	Russia	644	1 387	711	1 853	241	680
	United Arab Emirates	2 211	597	2	3	680	487
	France	237	222	641	805	201	353
	Brazil	129	85	347	457	173	228
	Namibia	–	–	21	58	35	214

	Singapore	–	–	36	32	30	191
	Angola	15	87	–	–	65	159
	Italy	22	14	48	24	90	107
	Germany	60	55	105	38	39	105
	Other countries	1 266	1 695	647	494	755	540
	Total	**276 154**	**337 817**	**317 501**	**372 983**	**243 060**	**353 724**
7105.10.00.10	Diamond dust for borers; dust mixed with a carrier in cartridges or in tubes						
	United States	213 935	346	370 750	739	318 992	676
	Ireland	4 182	15	14 506	38	75 666	72
	South Korea	27 000	17	22 000	15	62 567	71
	Australia	–	–	546	2	1 674	7
	Other countries	2 774	10	5 420	19	–	–
	Total	**247 891**	**388**	**413 222**	**813**	**458 899**	**826**
7105.10.00.91	Natural diamond dust and powder						
	United States	197 510	493	202 317	682	191 608	523
	South Korea	27 227	87	111 532	404	124 641	503
	China	–	–	13 329	55	49 732	204
	Ireland	83	**. . .**	32 894	124	10 397	41
	Spain	–	–	–	–	6 645	27
	Ghana	3 200	3	7 322	12	3 946	16
	Brazil	–	–	–	–	3 211	13
	Australia	–	–	879	4	2 438	4
	South Africa	5 317	22	4 572	7	4 000	3
	Other countries	12 197	37	6 225	11	47	**. . .**
	Total	**245 534**	**642**	**379 070**	**1 299**	**396 665**	**1 334**
7105.10.00.92	Synthetic diamond dust or powder						
	South Korea	1 849 251	1 094	6 901 897	3 759	10 848 795	5 948
	United States	2 710 378	1 872	3 947 359	2 459	7 473 398	3 263
	Ireland	2 633 699	1 493	5 754 875	2 528	7 062 778	3 153
	China	85 991	113	340 608	235	409 846	64
	Other countries	102 303	74	91 294	54	176 400	73
	Total	**7 381 622**	**4 646**	**17 036 033**	**9 035**	**25 971 217**	**12 501**
9813.00.00.41	Diamonds of Section XIV otherwise classifiable to 71.02 : diamonds otherwise classifiable to 7102.10, 7102.21 or 7102.31.						
	Canada	340 926	63 084	101 880	94 174	576 775	206 599
	United States	–	–	366	375	–	–
	Total	**340 926**	**63 084**	**102 246**	**94 549**	**576 775**	**206 599**
9813.00.00.49	Diamonds of Section XIV otherwise classifiable to 71.02 : pther diamonds otherwise classifiable to 7102.29 or 7102.39						
	United States	–	–	7	7	1	1
	Canada	34	35	170	227	–	–
	Total	**34**	**35**	**177**	**234**	**1**	**1**
Total imports		**8 767 797**	**480 373**	**18 751 485**	**627 345**	**28 190 163**	**716 209**

Sources: Natural Resources Canada; Statistics Canada.
– Nil; **. .** Not available; **. . .** Amount too small to be expressed; (p) Preliminary.
Note: Numbers may not add to totals due to rounding. Harmonized System (HS) code descriptions in this table may have been abbreviated. For detailed HS code descriptions related to this commodity, please refer to the corresponding tariffs table.

TABLE 2. WORLD PRODUCTION OF NATURAL ROUGH DIAMONDS, 2010 AND 2011

Country	Production 2010		Production 2011			
	Volume	Value	Volume	Variation vs. 2010	Value	Variation vs. 2010
	(carats)	(US$)	(carats)	(%)	(US$)	(%)
Botswana	22 018 000	2 586 396 620	22 904 554	4.03	3 902 115 905	50.87
Russia	34 856 600	2 382 290 100	35 139 800	0.81	2 674 713 800	12.27
Canada	11 804 095	2 305 388 015	10 795 259	-8.55	2 550 875 199	10.65
South Africa	8 862 912	1 194 279 170	8 205 399	-7.42	1 730 323 570	44.88
Angola	8 362 139	976 318 205	8 328 519	-0.40	1 162 625 478	19.08
Namibia	1 692 579	744 004 430	1 255 816	-25.80	872 567 637	17.28
Zimbabwe	8 435 224	339 751 797	8 502 648	0.80	476 218 678	40.17
Lesotho	108 827	197 699 207	224 180	106.00	359 147 279	81.66
Australia	9 976 155	251 722 190	7 829 805	-21.51	220 720 064	-12.32
Congo, Democratic Republic of	20 166 220	174 281 769	19 249 057	-4.55	179 608 541	3.06
Sierra Leone	437 516	106 062 933	357 161	-18.37	124 150 581	17.05
Central African Republic	301 558	48 892 377	323 576	7.30	60 893 287	24.55
Guinea	374 096	27 950 657	303 785	-18.79	33 401 985	19.50
Liberia	26 591	15 954 534	41 932	57.69	16 183 202	1.43
Ghana	333 627	11 535 534	301 937	-9.50	15 259 202	32.28
Tanzania	70 802	13 098 521	40 691	-42.53	11 279 450	-13.89
Guyana	46 378	7 310 680	50 817	9.57	9 581 760	31.07
Brazil	25 394	1 400 000	45 536	79.32	3 150 000	125.00
India	18 084	3 347 187	12 315	-31.90	2 200 000	-34.27
Congo, Republic of	381 242	4 743 155	76 548	-79.92	1 810 894	-61.82
China	17 227	280 000	201	-98.83	50 000	-82.14
Togo	96	10 582	71	-26.04	15 048	42.20
Indonesia	–	–	–	n.a.	–	n.a.
Venezuela	2 099	229 560	–	-100.00	–	-100.00
Total	128 317 462	11 392 947 223	123 989 609	-3.37	14 406 891 558	26.45

Source: Kimberley Process Certification Scheme.
– Nil; n.a. Not applicable.