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## BHP Billiton: Mining Potash

Potash mining, for many years a sleepy commodity business, was unexpectedly on the front pages of the world's business press in late 2010. In August BHP, the largest mining company in the world, made a hostile takeover bid for the Potash Corporation of Saskatchewan (PCS), the largest potash producer in the world and a firm with strong historical ties with the province's government and people. BHP made this bid despite the fact that the company had no experience mining potash, and had no significant ventures in Canada outside of a diamond mine in the far north of the country.

Analysts disagreed with respect to the wisdom and underlying strategic logic behind BHP's bid. One stated, "It's all about [PCS's] relationship with China, which needs fertilizer for food production." Another claimed that the deal "makes sense" because PCS "would provide BHP with technical and marketing expertise" to help develop a potash mine that BHP was considering developing. Others questioned the move, wondering whether an acquisition that diversified BHP outside of mining would be a better strategy.<sup>1</sup>

BHP's move created a large amount of uncertainty not only at PCS but also for other producers and customers in the industry because it threatened to fundamentally change how this highly concentrated industry operated. It also raised red flags within the Saskatchewan government, which received hundreds of millions of dollars annually in royalties from potash producers. Would BHP ultimately take over PCS, and, if so, how would this affect the industry's competitive dynamics? As the takeover battle continued, industry participants struggled with how to shape the answer to this question in their respective interests.

### Potash

Potash is a general term for various potassium compounds. Along with nitrogen and phosphate, potassium is an essential nutrient for all plants and is a key ingredient in the fertilizers that farmers use to improve soil quality, and therefore crop production. Although farmers can

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<sup>1</sup> Bill Lindsay, "BHP Bid for Potash Makes Sense, Analysts Say," *Wall Street Journal*, August 18, 2010.

choose the extent to which they use fertilizers to increase crop production, there exist no substitutes for potash or either of the other essential nutrients.<sup>2</sup>

Although potassium is a common element in the earth's crust and is found in fertile topsoil, it is only economically feasible to mine potash in areas where potassium deposits are highly concentrated. Created from the evaporation of inland salt lakes, most large potassium deposits are buried well below the earth's surface.

As of 2010, potash reserves tended not to be located in countries with the greatest demand for fertilizers. Consequently, most potash was produced for export. **Exhibit 1** shows potash reserves by country. About 50 percent of the world's potash reserves were in Canada, 20 percent were in Russia, 8 to 9 percent were in Belarus and Germany, and most of the remainder were in Brazil, China, and the United States.<sup>3</sup>

Developing a potash mine is time consuming and costly. In addition to several years of exploratory work, the development itself takes at least four to five years, with the development costs estimated in 2009 to be \$2.5 billion for every 2.2 million tons per year of capacity.<sup>4</sup> Potash is mined through two primary methods. In conventional potash mining, firms bore mine shafts about 1,000 meters below the earth's surface and cut rooms with a series of pillars to support the top of the mine. Large machines extract the material, which is then lifted to the earth's surface and processed. In solution mining, firms bore holes into the earth, pump hot water into the holes, pump up the resulting solution, and extract and refine the potash from this solution. Solution mines can be more than 50 percent deeper than conventional mines.<sup>5</sup> Conventional mining, which has higher fixed costs but lower marginal costs, is generally the preferred technology when potash deposits are not too deep; both of Canada's solution mines were originally designed for conventional mining, but were converted to solution mines because of seepage problems.<sup>6</sup>

Once developed, potash mines have very long lives, often lasting for decades.

As of 2010, the global demand for potash, as well as for other agricultural nutrients, had increased over time and was expected to continue to do so for a variety of reasons. Population growth, income growth in developing countries, shifts in diets, and increased use of biofuels had all contributed to the greater demand for agricultural products that the world's farmers faced. This in turn increased the demand for fertilizer.

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<sup>2</sup> "Maximum crop production frequently requires the regular addition of soluble potash, even on relatively rich and virgin soils." Robert C. Fite, "Origin and Occurrence of Commercial Potash Deposits," Proceedings of the Oklahoma Academy of Science for 1951, p. 123, [http://digital.library.okstate.edu/OAS/oas\\_pdf/v32/p123\\_125.pdf](http://digital.library.okstate.edu/OAS/oas_pdf/v32/p123_125.pdf).

<sup>3</sup> U.S. Geological Survey, Mineral Commodity Summaries, January 2010.

<sup>4</sup> "BHP Plans a Potash Mine in Canada," *Reuters*, March 23, 2009, <http://www.chinamining.org/News/2009-03-23/1237791229d22818.html>.

<sup>5</sup> See Mosaic 2010 10-K for a discussion of solution mining.

<sup>6</sup> The Canadian Encyclopedia, "Potash," <http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0006428>.

Potash prices and world production of potash generally increased through much of the 2000s. The U.S. Geological Survey estimated that the real price of potash increased by 45 percent between 2002 and 2007, while world production of potash increased by 28 percent.<sup>7</sup>

Between 2007 and 2010, potash prices and quantities fluctuated wildly. After remaining roughly constant at just under \$200 per metric ton during 2006 and early 2007, prices increased to nearly \$1,000 per metric ton in late summer 2008. Production levels were roughly constant during this time. Prices then decreased steadily; by early 2010, they had decreased to just under \$400 per ton, somewhat below the previous year's average.<sup>8</sup> World production levels, however, dropped precipitously; the U.S. Geological Survey estimated that production levels were nearly 30 percent lower in 2009 than 2008. Many observers attributed this to decreased demand for fertilizer during the global recession, and they expected demand to return to previous levels when the economy rebounded.

## The Potash Industry in Canada

Large-scale potash mining in Canada started with the discovery of large deposits in Saskatchewan during the 1950s.<sup>9</sup> Mining these deposits was delayed because they lay beneath an aqueous layer of earth that would seep through mine shafts and flood mines. Engineers solved this problem by freezing this layer near the shaft's drill site, thus making the shaft itself impervious to water. Mines were developed throughout the 1960s, with ten mines initiating production by 1970. By 1971, Saskatchewan potash mines had the largest production capacity in the world.<sup>10</sup>

The Saskatchewan government, concerned that the mines' large capacity would lead to low potash prices and, possibly, accusations of dumping by the U.S. government, intervened in the industry, passing legislation in 1969 that allowed it to "control the level of production and establish a minimum price level."<sup>11</sup> The government limited and rationed production across firms by issuing quotas. These quotas had the intended effect, limiting the production of Saskatchewan mines to about 50 percent of capacity and driving potash prices higher.

Controversies over the allocation of these quotas across firms and the government's taxation of firms' reserves resulted in several legal challenges to the government's policies. In response, the government began to invest directly in the industry, establishing the state-owned Potash Corporation of Saskatchewan and using it to buy several mines during the late 1970s.<sup>12</sup> PCS remained a state-owned company through the 1980s, but was privatized starting in 1989. The Saskatchewan government fully divested its holdings in PCS by the end of 1993.

<sup>7</sup> U.S Geological Survey, potash statistics in Thomas D. Kelly and Grecia R. Matos, "Historical Statistics for Mineral and Material Commodities in the United States," U.S. Geological Survey Data Series 140, <http://minerals.usgs.gov/ds/2005/140/potash.pdf> (last modified November 9, 2010).

<sup>8</sup> Agrium 2009 Annual Report, p. 38.

<sup>9</sup> There are also relatively small deposits in the province of New Brunswick.

<sup>10</sup> Kevin Karazin, "The Potash Corporation of Saskatchewan: A Case Study of Public Ownership Concerning the Policies of Successive Saskatchewan Governments from 1944 to Present," masters thesis, University of Regina, March 1997, p. 62–66.

<sup>11</sup> Ibid., p. 75.

<sup>12</sup> Ibid., p. 81–98.

As of mid-2010, the Canadian potash industry consisted of three firms: PCS, Mosaic, and Agrium.

### ***Potash Corporation of Saskatchewan***

PCS claimed to be the “world’s largest integrated fertilizer and related industrial and feed products company.”<sup>13</sup> In 2009 its operating income was \$1.2 billion on sales of \$4 billion, figures that were roughly similar to much of the recent past.<sup>14</sup> It employed just over 5,000 people. In recent years, about one-third of PCS’s revenues came from potash production, with the rest from its production of phosphates and nitrogen.

PCS operated six potash mines: five in Saskatchewan and one in New Brunswick. It used conventional mining at five of these sites, and solution mining at the sixth (its Patience Lake mine).<sup>15</sup> **Exhibit 2** shows the capacity and production from these mines between 2007 and 2009. The proven and probable reserves of these mines were large; PCS estimated that at current extraction rates, its five conventional mines each had at least sixty-five years of remaining life.<sup>16</sup> In addition, PCS had mining rights on lands estimated to contain billions of metric tons of potash.

**Exhibit 3** shows PCS’s sales, margins, and average selling price between 2007 and 2009. The exhibit shows a large increase in PCS’s average selling price and margins between 2007 and 2008, and a sharp decrease in its sales between 2008 and 2009.

### ***Mosaic***

The Mosaic Company was formed in 2004 through the merger of Cargill’s fertilizer business and IMC Global, Inc.; as of 2010 Cargill continued to own the majority of shares in the firm.<sup>17</sup> Mosaic produced potash and phosphates, two of the three essential nutrients in fertilizer. In 2010 potash made up 29 percent of Mosaic’s \$6.8 billion in sales, but 73 percent of its \$1.3 billion in operating earnings. Mosaic employed about 7,500 individuals.

Mosaic operated three potash mines in Canada, all in Saskatchewan.<sup>18</sup> It used solution mining at Belle Plaine and conventional mining at its other two mines. **Exhibit 4** shows capacity and production of potash from these mines in recent years. As was the case for PCS, Mosaic’s existing mines had a large amount of reserves, estimated to be at least 1.5 billion metric tons—more than one hundred years of production at 2010 rates. In addition, Mosaic had potash mineral rights on a large amount of land in Saskatchewan.

**Exhibit 5** reports Mosaic’s potash sales, margins, and average selling price for fiscal years 2008–2010. Mosaic’s fiscal year ends on May 31 rather than December 31, so the years in this

<sup>13</sup> The material in this subsection draws primarily from PCS’s 2009 Annual Report and 10-K.

<sup>14</sup> The exception was in 2008, when its operating income and sales were \$4.6 million and \$9.4 million, respectively.

<sup>15</sup> Carlos F. Perucca, “Potash Processing in Saskatchewan: A Review of Process Technologies,” *CIM Bulletin* 96, no. 1070 (2003).

<sup>16</sup> It is not possible to derive similar estimates for the Patience Lake mine, which was mined using the solution method.

<sup>17</sup> The material in this subsection comes from Mosaic’s 2010 10-K. Mosaic’s fiscal year ends on May 31.

<sup>18</sup> This includes the Esterhazy mine, which it operated as part of a partnership with PCS. In addition, Mosaic operated two small mines in the southwestern United States.

table do not coincide with Exhibit 3's report of analogous figures for PCS. However, this exhibit shows that, as for PCS, prices increased then decreased for Mosaic during this period as well.

### **Agrium**

Agrium, Inc. was a large producer, distributor, and retailer of fertilizer products.<sup>19</sup> It garnered \$9 billion in net sales during 2009. Its potash business, however, made up only a small part of the company, accounting for \$333 million (4 percent) of its net sales and \$174 million of its gross profits.

Agrium operated one potash mine in Saskatchewan with a capacity of about 2 million metric tons per year. The firm produced 875,000 metric tons from this mine during 2009. **Exhibit 6** shows Agrium's potash sales, average selling price, and margins from 2007–2009. Agrium estimated that its mine had at least forty remaining years of production at current extraction rates.

### **Canadian Export Markets and Canpotex**

In 2009 95 percent of the Canadian potash industry's production was for export.<sup>20</sup> While the majority of Canadian potash exports had been to the United States, an increasing share (about 45 percent) was shipped overseas.

Exports of Canadian potash to countries outside of North America were marketed and distributed through Canpotex, which was jointly and equally owned by Agrium, Mosaic, and PCS and operated under an exemption from Canadian competition laws. About 8 million metric tons of potash were forecast to be sold through Canpotex in 2010, approximately 25 percent of world production. About 70 percent of Canpotex sales were to China, Brazil, India, Malaysia, and Indonesia.<sup>21</sup> See **Exhibit 7** for the distribution of Canpotex sales across countries between 2007 and 2009.

Canpotex generally marketed potash to representatives of offshore countries, who negotiated prices on behalf of their constituent customers. Its largest customers, including China and India, bought potash through Canpotex on price and volume contracts that lasted six months to one year. In contrast, other countries bought through Canpotex on spot markets.<sup>22</sup> Sales and distribution through Canpotex differed considerably from sales and distribution to North American customers, to whom potash was sold largely on a spot basis and distributed through standard wholesale and retail outlets.

A central role of Canpotex was to coordinate sales and allocate production among its members. Canpotex's reported strategy was to "match supply to demand," though to some observers this generally meant in practice that it limited supply.<sup>23</sup> Following this strategy, the

<sup>19</sup> The material in this subsection comes from Agrium's 2009 Annual Report.

<sup>20</sup> Canadian Minerals Yearbook 2009, <http://www.nrcan.gc.ca/minerals-metals/business-market/canadian-minerals-yearbook/4033> (last modified June 30, 2011).

<sup>21</sup> Canpotex Company Profile, June 2011, [http://canpqlx.sasktelwebhosting.com/company\\_profile.pdf](http://canpqlx.sasktelwebhosting.com/company_profile.pdf).

<sup>22</sup> PCS 2009 Financial Review, p. 17.

<sup>23</sup> Phred Dvorak and Scott Kilman, "BHP Roils Potash Cartel," *Wall Street Journal*, August 24, 2010.

three Canpotex members published plans to expand capacity over the next decade to meet expected demand increases. PCS forecasted that it would add 8 million tons of capacity by 2015, Mosaic 5.1 million tons by 2020, and Agrium 750,000 tons by 2015.<sup>24</sup> These capacity additions would have led the collective operational capacity of Canpotex members to reach over 28 million tons per year by 2015 and nearly 34 million tons per year by 2020.

As of 2009, production for sale through Canpotex was allocated across its members according to their respective production capacities; if a member could not fill its Canpotex allocation, the remaining members were allocated the unfilled production according to their capacities.<sup>25</sup> In 2009 Canpotex production shares were 54 percent for PCS, 37 percent for Mosaic, and 9 percent for Agrium.<sup>26</sup>

Historically, when Canpotex did not control supply as much as it did in the 2000s, prices were lower. During much of the 1980s, production levels were high, leading some observers to question whether Canpotex and its members—including the then-government-owned PCS—were pursuing profitable strategies. During the late 1980s, however, an antidumping suit filed by the U.S. International Trade Commission provided Canadian potash producers incentives to raise prices on potash sales to the United States. Potash prices increased sharply both to the United States and through Canpotex. This increase, combined with changes in management at PCS (and possibly also its eventual privatization), appears to some to have strengthened Canpotex.<sup>27</sup>

In addition to coordinating and marketing production, Canpotex also managed many of the logistical and transportation functions associated with potash exports. In a partnership with Canadian and U.S. railroads, it used dedicated trains to transport potash in bulk from Saskatchewan. About 70 percent of shipments went through Vancouver, British Columbia, with most of the rest through Portland, Oregon. These ports could handle about 14 million tons of potash per year and had the capacity to store up to 345,000 metric tons of potash at any given point in time. Potash was then shipped from these ports via bulk ocean carriers. The development of Portland's terminal in 1997 cost \$50 million; subsequent capital investments cost approximately that much as well.

Though Canpotex was the largest seller on the global market as of 2010, it faced several large global competitors, including Belaruskali, ICL, Slivinit, Uralkali, and K + S. Belaruskali was a state-owned enterprise in Belarus that marketed its potash for export jointly with Uralkali, a Russian producer, and reportedly invited Slivinit into the arrangement as well.<sup>28</sup> The addition of Slivinit would create a combination of firms with a greater capacity than the three Canpotex members.

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<sup>24</sup> PCS 2009 Annual Report; Mosaic Company press release, "The Mosaic Company Announces Additional Potash Expansions," April 4, 2008; Agrium Corporation press release, "Agrium Advances Vanscoy Potash Expansion," December 17, 2009.

<sup>25</sup> PCS 2009 10-K.

<sup>26</sup> Ibid.; Agrium 2009 Annual Report.

<sup>27</sup> Bruce W. Wilkinson, "The Saskatchewan Potash Industry and the 1987 U.S. Antidumping Action," *Canadian Public Policy* 15, no. 2 (June 1989): 145–161.

<sup>28</sup> Yuriy Humber and Maria Kolesnikova, "Belarus Keeps Door Open for Slivinit in Potash Trader," *Businessweek*, September 7, 2010.

## Potash Production Taxes

The Saskatchewan government levied taxes on potash production. The basic structure of potash taxes included a base tax per ton sold, plus a royalty on profits of either 15 or 35 percent depending on profit levels. In general, the structure of the tax system was such that the amount of taxes the province collected was more tied to potash producers' profits than production volumes. Potash tax collections fluctuated during the years leading up to 2010 and were as high as \$1.4 billion in the 2008–2009 fiscal year, when potash prices were extremely high. The government forecasted that it would collect \$205 million during the 2010–2011 fiscal year, which would represent about 2 percent of the total revenue the province collected.<sup>29</sup>

## BHP Billiton

BHP Billiton was the largest mining company in the world as of mid-2010, and was also the largest company in Australia by market capitalization. It had operations throughout the world and approximately 40,000 employees. BHP had over \$50 billion in revenues and \$12 billion in operating profits in fiscal year 2009.<sup>30</sup> Its main lines of business were in mining iron ore and coal, as well as producing petroleum. Historically it did not mine potash.

BHP's recent ventures into potash began in 2006, when it formed a joint venture with the firm Anglo-Potash to explore potash development in Saskatchewan. Anglo-Potash had acquired permits for potash exploration covering 1.8 million acres, much of which was near Saskatoon, Saskatchewan, in areas close to existing Saskatchewan potash mines. Two years later in 2008, BHP acquired Anglo-Potash outright and with it, 100 percent of its potash exploration rights.<sup>31</sup> In March 2010 BHP acquired the firm Athabasca Potash, which gave BHP additional potash exploration rights in Saskatchewan.<sup>32</sup>

The majority of BHP potash mine development, however, explored areas near Jansen, Saskatchewan ("the Jansen project"). By 2010, BHP had spent more than two years exploring the economic feasibility of building a potash mine in this area, including conducting seismic tests and drilling exploratory holes. In January 2010 the company announced that it had approved \$240 million in capital investment for preliminary development of the mine. BHP stated that this investment would be used to continue engineering and begin ground freezing "that will allow the shaft sinking to begin once full environmental permits are in place, anticipated in mid-2011." This investment would initiate the final stage of exploration, called a "definition study." BHP expected to decide whether to proceed fully on mine development in late 2011.<sup>33</sup> An analyst at Sanford C. Bernstein estimated the full cost of building the Jansen mine to be \$11.2 billion.<sup>34</sup>

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<sup>29</sup> Richard Blackwell, "Saskatchewan's Potash Royalty," *The Globe and Mail*, September 2, 2010.

<sup>30</sup> BHP Billiton 2009 Annual Report.

<sup>31</sup> "BHP Billiton Completes Acquisition of Anglo Potash Ltd.," press release, July 10, 2008.

<sup>32</sup> "BHP Billiton Completes the Acquisition of Athabasca Potash Inc.," press release, March 23, 2010.

<sup>33</sup> "Update on Jansen Potash Project," press release, January 20, 2010.

<sup>34</sup> Jesse Riseborough and Maria Kolesnikova, "BHP May Delay Jansen Project in Canada If It Buys Potash, Fertecon Says," *Bloomberg*, September 14, 2010, <http://www.bloomberg.com/news/2010-09-14/bhp-may-delay-jansen-project-in-canada-if-it-buys-potash-fertecon-says.html>.

BHP forecasted that if it decided to move forward in 2011, production at the Jansen mine would begin in 2015. The mine's capacity would be 8 million metric tons per year once it was fully built out—the largest potash mine in the world.<sup>35</sup> It would be the world's first new potash mine in over twenty years, and the first developed in Canada since the 1960s. BHP was also in the process of developing its own export facility, and had signed a letter of intent with the Port of Vancouver USA (on the Columbia River in Washington state) in early August 2010 to begin lease negotiations for land at one of the port's terminals.<sup>36</sup>

## The Takeover Bid

On August 12, 2010, BHP made an unsolicited offer to PCS's board of directors to buy the company for \$38.6 billion, or \$130 per share.<sup>37</sup> Once this offer became public a few days later, PCS's stock price jumped by nearly 30 percent from its previous day's closing price of \$112, closing at \$143. PCS's competitors' stock prices increased as well: Agrium's by 5 percent and Mosaic's by 9 percent. In contrast, BHP's stock price was essentially unchanged.

PCS's board turned down the offer. CEO Bill Doyle stated that while the board would consider selling the company, BHP's offer was too low.<sup>38</sup> BHP responded that it would take its offer for PCS shares directly to shareholders—thereby bypassing PCS's board of directors—and expressed confidence that the premium it was offering would be attractive to them.<sup>39</sup>

In the takeover bid's immediate aftermath, BHP's leadership indicated that its strategy might be different than PCS's traditional strategy. BHP said that it would honor existing Canpotex contracts, but eventually "hope[d] to sell through its own international channels."<sup>40</sup> In addition, the head of BHP's potash business, Graham Kerr, was quoted as saying, "We believe in running our assets 100 percent of the time and selling our products at market price."<sup>41</sup>

BHP's bid for PCS attracted the attention of various government officials, particularly in Saskatchewan. Premier Brad Wall expressed concerns about the impact a takeover would have on the future of Canpotex, worrying that if Canpotex fell apart it would lead to fiercer price competition among potash producers and lower tax revenues for the Saskatchewan government. He urged Investment Canada—a national agency with the jurisdiction to disapprove foreign takeovers of Canadian companies that it deems as outside Canada's national interest—to review the deal, and suggested that Investment Canada require Canpotex membership as a condition of

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<sup>35</sup> BHP Billiton, "The Jansen Project," <http://www.midsaskmunicipalalliance.ca/JansenProjectInfo.pdf>.

<sup>36</sup> Erik Siemers, "Port of Vancouver Lands Huge Tenant," *Portland Business Journal*, August 12, 2010, <http://portland.bizjournals.com/portland/stories/2010/08/09/daily37.html>.

<sup>37</sup> Jac Nasser (Chairman, BHP Billiton) to Dallas J. Howe (Board Chair, Potash Corporation of Saskatchewan), August 13, 2010, <http://online.wsj.com/public/resources/documents/POTLetterfromBHPChairman817.pdf>.

<sup>38</sup> Anupreeta Das, Scott Kilman, and Liam Pleven, "A \$39 Billion Food Fight," *Wall Street Journal*, August 17, 2010.

<sup>39</sup> Robert Guy Matthews and Anupreeta Das, "BHP Billiton Goes Hostile With Potash Bid," *Wall Street Journal*, August 19, 2010.

<sup>40</sup> Dvorak and Kilman, "BHP Roils Potash Cartel."

<sup>41</sup> Ibid.

approval.<sup>42</sup> Investment Canada's stance on a BHP takeover was unclear, however, particularly because it had rarely actually intervened in takeovers.<sup>43</sup>

In response, BHP changed the tone of its earlier statements somewhat. CEO Marius Kloppers allowed for a greater possibility that BHP would join Canpotex while also reiterating that BHP preferred independently marketing its products. In addition, Kloppers was quoted as saying, "Without all the [Canpotex] shareholders coming to a mutual understanding . . . it's not going to happen . . . Partners are partners. They're different from competitors." Other Canpotex members encouraged BHP to join if the takeover succeeded. Agrium's CEO reportedly told Canada's Business News Network that BHP would be "crazy to leave" Canpotex.<sup>44</sup>

BHP's bid also attracted the attention of customers in potash-importing countries such as China. For example, the firm Sinochem—one of Canpotex's largest customers—was reported to be exploring a competing bid for PCS. This bid would potentially include financing from Temasek, the Singapore government's sovereign investment company.

However, one month after the BHP's initial offer, there were still no competing offers for PCS.

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<sup>42</sup> "Sask. Premier Fears for Potash Consortium," *CBC Canada*, August 27, 2010, <http://www.cbc.ca/canada/saskatchewan/story/2010/08/27/sk-canpotex-wall-1008.html>.

<sup>43</sup> Jeremy Torobin and Andy Hoffman, "Potash Bid Tests Canada's Takeover Rules," *The Globe and Mail*, August 17, 2010.

<sup>44</sup> Brenda Bouw, "BHP Backtracks on Canpotex Stance," *The Globe and Mail*, August 25, 2010.

**Exhibit 1: Share of Potash Reserves by Country (%)**

	Percentage
Canada	52.0
Russia	21.3
Belarus	8.9
Germany	8.4
Brazil	3.5
China	2.4
United States	1.1
Israel	0.5
Jordan	0.5
Ukraine	0.3
United Kingdom	0.3
Spain	0.2
Chile	0.1
Other	0.6

Source: U.S. Geological Survey, Mineral Commodity Summaries, January 2010.

**Exhibit 2: PCS Capacity and Production of Potash, 2007–2009 (in millions of metric tons)**

	Nameplate Capacity	Operational Capacity	Production (in KCl)		
			2007	2008	2009
Lanigan	3.83	3.00	1.91	2.14	0.70
Rocanville	3.04	2.80	2.65	2.83	0.95
Allan	1.89	1.80	1.74	1.09	0.69
Cory	1.36	0.80	0.77	0.42	0.42
Patience Lake	1.03	0.45	0.26	0.28	0.10
New Brunswick	0.80	0.80	0.79	0.80	0.28
<i>Total</i>	<i>11.95</i>	<i>9.65</i>	<i>8.12</i>	<i>7.57</i>	<i>3.13</i>

Source: PCS 2009 10-K.

*Notes:* Nameplate capacity includes previously idled capacity that could be brought into operation with capital investment. Operational capacity is estimated annual achievable production. Table does not include production at the Esterhazy mine, which is owned by PCS but is mined by Mosaic under a partnership arrangement. The Esterhazy mine has an operational capacity of 1.13 million metric tons, and its production totaled 1.0, 1.13, and 0.28 million metric tons in 2007, 2008, and 2009, respectively.

**Exhibit 3: PCS Potash Sales, 2007–2009 (in millions of dollars)**

	2007	2008	2009
All sales			
Net sales	1,567	3,834	1,206
Cost of product sold	659	784	466
Gross margin	908	3,051	739
Volume (thousand tons)	9,400	8,574	2,988
Average selling price/ton	167	449	404
Margin/ton	97	357	247
North American sales only			
Net sales	657	1,308	507
Volume (thousand tons)	3,471	2,962	1,093
Average selling price/ton	187	441	463
Offshore sales only			
Net sales	910	2,527	698
Volume (thousand tons)	5,929	5,585	1,895
Average selling price/ton	153	452	369

Source: PCS 2009 Financial Review.

**Exhibit 4: Mosaic Capacity and Production for Potash, FY2008–2010 (in millions of metric tons)**

	Proven Peaking Capacity	Operational Capacity	Production (in KCl)		
			2008	2009	2010
Belle Plaine	2.80	2.30	2.10	1.80	1.50
Colonsay	1.80	1.50	1.40	1.00	0.80
Esterhazy	5.30	4.80	4.10	3.00	2.30
<i>Total</i>	<i>9.90</i>	<i>8.60</i>	<i>7.60</i>	<i>5.80</i>	<i>4.60</i>

Source: Mosaic 10-K.

Notes: Mosaic's fiscal year ends on May 31. Proven peaking capacity represents full capacity assuming no turnaround or maintenance time. Operational capacity is estimated annual achievable production. Esterhazy includes both production as part of a partnership with PCS and production outside this partnership.

**Exhibit 5:** Mosaic Potash Sales, FY2008–2010 (in millions of dollars)

	2008	2009	2010
Net sales			
North America	1,301	1,388	1,310
International	950	1,429	864
Total	2,251	2,817	2,174
Cost of goods sold	1,398	1,311	1,140
Gross margin	853	1,506	1,035
Volume (thousand tons)	8,563	5,050	5,537
Average selling price/ton	226	521	352
Gross margin/ton	100	298	187

Source: Mosaic 2010 10-K.

Note: Mosaic fiscal year ends May 31.

**Exhibit 6:** Agrium Potash Sales, 2007–2009 (in millions of dollars)

	2007	2008	2009
All sales			
Net sales	305	816	333
Cost of product sold	138	184	159
Gross margin	167	632	174
Volume (thousand tons)	1,684	1,686	763
Average selling price/ton	181	484	436
Margin/ton	99	375	228
Domestic sales only			
Net sales	185	476	213
Cost of product sold	84	112	112
Gross margin	101	364	101
Volume (thousand tons)	865	907	467
Average selling price/ton	214	525	457
Margin/ton	117	401	217
International sales only			
Net sales	120	340	120
Cost of product sold	54	72	47
Gross margin	66	268	73
Volume (thousand tons)	819	779	296
Average selling price/ton	146	437	404
Margin/ton	81	345	247

Source: Agrium 2009 Annual Report.

**Exhibit 7: Distribution of Canpotex Sales, 2007–2009 (%)**

	2007	2008	2009
China	26	13	6
India	10	16	32
Other Asian countries	33	39	43
Latin America	26	25	13
Other countries	5	7	6
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>

Source: PCS 2009 10-K.