Iceland has no proven base metal, precious metal, or mineral fuel reserves. It has some industrial mineral resources, including salt and pumice, but, overall, Iceland depends on imports to meet domestic demand for most mineral commodities. Iceland has abundant hydropower and geothermal resources, which makes the country an economically attractive location for power-intensive smelter operations. In 2014, the country accounted for about 1.6% of global production of primary aluminum and about 1.0% of global production of ferrosilicon (Bray, 2016; Schnebele, 2016).

Minerals in the National Economy

The nation’s real gross domestic product (GDP) increased to $14.86 billion in 2014, or by 1.9% compared with that of 2013. Mineral-related production played a significant role in the national economy. In 2014, the value of basic metals accounted for 30.1% of the total value of production in the country, second only to food products and beverages (51.3%). In 2014, the country exported 844,721 metric tons (t) of aluminum and 112,657 t of ferrosilicon, which accounted for 39.5% of the total value of the country’s exported goods. Imports of aluminum ores and concentrates amounted to 1,583,285 t and accounted for 9.2% of the value of the country’s imported goods. The aluminum and ferrosilicon industries consumed 74.3% of the total electricity generated in the country (International Monetary Fund, 2015, p. 51; Statistics Iceland, 2015a–c).

In early 2014, Statoil ASA of Norway, Eni S.p.A. of Italy, GDF Suez S.A. of France, Det norske oljeselskap ASA of Norway, and Repsol S.A. of Spain began exploration drilling in the Barents Sea, although it was still unclear if the region could become as significant a hydrocarbon-producing region as the North Sea has proved to be. Statoil’s discovery of up to 63 million barrels of recoverable oil equivalent at the Drivis prospect in 2014 may lead to development of the Johan Castberg area. In 2014, China National Offshore Oil Corp. (CNOOC) of China took a 60% stake in license No. 2014/01, which covers the area between Iceland and Norway’s Jan Mayen Island. With this action, CNOOC was positioned to become the first Chinese company to explore for oil in the Arctic region. CNOOC was partnering with Iceland’s Eykon Energy (15%) and Petoro Iceland (25%) (Mainwaring, 2014).

Government Policies and Programs

The laws applicable to the mineral industry include the Act on Survey and Utilization of Ground Resources, No. 57/1998, and the Electricity Act, No. 65/2003. Activities related to the survey and use of land are also subject to the Nature Conservation Act, Planning and Building Act, and other acts. Orkustofnun (the National Energy Authority under the Ministry of Industry and Innovation) is responsible for granting licenses and regulating compliance related to mineral exploration, prospecting, and extraction operations based on relevant laws pertaining to natural resources, the environment, hydrocarbons, and electricity (Orkustofnun, 2014c).

Production

Aluminum was Iceland’s leading mineral commodity, followed by ferrosilicon. In 2014, the estimated production of aluminum increased by 9.2%. The production of cement had likely ceased in 2012 when Sementsverksmidja Rikisins (the only producer in the country) was converted to an importation and distribution company when production ceased at its facility in Akranes. The country’s domestically produced industrial minerals included crushed stone, pumice, salt, sand and gravel, and scoria (tables 1, 2; Cement Ltd., 2014).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Aluminum.—Iceland started aluminum production in 1969. Since then, the production capacity had been gradually increasing owing to the competitive price of electricity in the country. In 2014, three aluminum smelting plants were in operation in Iceland. They were Alcoa Inc. of the United States Fjarooaal smelter at Reydarfjoardur [344,000-metric-ton-per-year (t/yr) capacity]; Century Aluminum Co. of the United States smelter at Grundartangi (260,000-t/yr capacity); and Rio Tinto Alcan of Canada’s Reykjavik [ISAL] smelter at Straumsvik (200,000 t/yr capacity). The aluminum industry had become less profitable in recent years, making the Government eager to attract other industries that could take advantage of its abundant energy resources (Katz, 2013; Association of Aluminum Producers in Iceland, 2014; Alcoa Inc., 2015, p. 12; Century Aluminum, 2015a; Rio Tinto plc, 2015, p. 230).

Silicon.—Elkem was established in 1975. The company had the capacity to produce 120,000 t/yr of ferrosilicon, and it consumed about 945 gigawatt hours per year of energy. About one-third of the ferrosilicon output was used to produce magnesium ferrosilicon products; the plant also produced refined metal with reduced aluminum and carbon content. Elkem reduced production to 90% in February 2014 and planned to idle one of the three furnaces by April owing to the low water levels at the powerplant reservoirs. As a result, the production of ferrosilicon declined in 2014. Two new silicon facilities were in the process of obtaining the required permits in 2013—a 32,000-t/yr-capacity project in Husavik by PCC Group
of Germany and a 16,000-t/yr-capacity project in Grundartangi by Silicor Materials Inc. of the United States. Both facilities were scheduled to come online in 2016 (table 2; PCC Group, 2014; Silicor Materials Inc., 2014).

**Industrial Minerals**

**Pumice.**—Jardefnaidnadur ehf (JEI) mined pumice in the Mount Hekla region about 100 kilometers from Reykjavik. JEI’s main export markets were Belgium, Denmark, the Netherlands, and the United States (Jardefnaidnadur ehf, 2015; Statistics Iceland, 2015a).

**Mineral Fuels and Other Sources of Energy**

**Petroleum.**—In December 2014, the Icelandic National Energy Authority, Orkustofnun, received notification from Faroe Petroleum and its partners Petoro Iceland and Iceland Petroleum that they had relinquished their license No. 2013/01, which was issued on January 4, 2013. The results of Faroe Petroleum’s initial studies of the licensed area suggested that seismic data in the next phase of exploration would be inconclusive owing to the presence of basalts on the eastern edge of the Dreki area, which would complicate the imaging of sediment sequences below. The company stated that alternative exploration methods, excluding drilling, were evaluated by the joint-venture partners and were assessed as not significantly increasing the probability of identifying hydrocarbon-bearing structures in the IS2013/01 license area. Other license holders in the Dreki area appeared to be continuing with explorations as planned (Orkustofnun, 2014b).

**Renewable Energy.**—Iceland was at the forefront in the use of renewable energy resources, and it had one of the largest potential sources of renewable energy in the world. In 2013, the total primary energy used in Iceland was 278 gigawatthours. About 86% of the energy supply was from domestic geothermal and hydropower resources; the rest was from imported coal and oil. The installed power-generation capacity of the country was 2,767 megawatts (MW), of which 1,986 MW was hydropower and 665 MW was geothermal, together accounting for 95.5% of the total. The country had 51 hydropower plants, of which the largest was the Fljotsdalsvirkjun plant (690 MW). The country had seven geothermal powerplants, of which the largest was the Hellisheidi plant (303 MW) (Orkustofnun, 2014a, p. 3–5, 13).

**Outlook**

Aluminum production is expected to remain steady or to increase, depending on the terms of future energy contracts between the aluminum companies and the Government of Iceland—specifically, the tax imposed on large energy consumers. Century Aluminum’s Helguvik smelter project is expected to increase Iceland’s aluminum production capacity by 45% by 2020 if a long-term power supply contract can be secured in 2015. Implementation of new silicon projects in a few years would help the country diversify the use of its hydroelectric and geothermal power. Petroleum exploration is expected to continue offshore of Iceland (Elkem Iceland, 2014; Mainwaring, 2014; Century Aluminum, 2015b).

**References Cited**


International Monetary Fund, 2015, World economic outlook: Washington, DC, International Monetary Fund, April, 238 p.


### TABLE 1
**ICELAND: PRODUCTION OF MINERAL COMMODITIES**<sup>1, 2</sup>  
(Metric tons)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum, metal, primary&lt;sup&gt;3&lt;/sup&gt;</td>
<td>825,803</td>
<td>780,853</td>
<td>802,827</td>
<td>736,429</td>
<td>800,000</td>
</tr>
<tr>
<td>Cement, hydraulic</td>
<td>140,000</td>
<td>142,000</td>
<td>146,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrosilicon</td>
<td>114,231</td>
<td>120,076</td>
<td>115,000</td>
<td>125,204</td>
<td>118,000</td>
</tr>
</tbody>
</table>

<sup>1</sup>Estimated data are rounded to no more than three significant digits.  
<sup>2</sup>Revised.  
<sup>3</sup>Zero.  
<sup>4</sup>Table includes data available through June 24, 2015.  
<sup>5</sup>In addition to the commodities listed, other materials were thought to be produced, including pumice, salt, sand and gravel, scoria, and crushed stone; however, information was inadequate to make reliable estimates of output.  
<sup>6</sup>Ingot and rolling billet production.

### TABLE 2
**ICELAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2014**  
(Thousand metric tons)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Major operating companies and major equity owners</th>
<th>Location of main facilities</th>
<th>Annual capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>Alcoa Inc.</td>
<td>Fjaroal smelter at Reydarfjordur</td>
<td>344</td>
</tr>
<tr>
<td>Do.</td>
<td>Reykjavik [JSAL] (Rio Tinto Alcan, 100%)</td>
<td>Straumsvik</td>
<td>200</td>
</tr>
<tr>
<td>Do.</td>
<td>Century Aluminum Co.</td>
<td>Grundartangi</td>
<td>260</td>
</tr>
<tr>
<td>Cement</td>
<td>Sementsverkamða Rikisins (Government, 100%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Akranes</td>
<td>--</td>
</tr>
<tr>
<td>Ferrosilicon</td>
<td>Elkem Iceland (Elkem A/S)</td>
<td>Plant at Grundartangi</td>
<td>120</td>
</tr>
<tr>
<td>Pumice</td>
<td>Jardefnafndur ehf&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Mount Hekla</td>
<td>285</td>
</tr>
<tr>
<td>Do.</td>
<td>BM Valla Ltd.</td>
<td>do.</td>
<td>32</td>
</tr>
</tbody>
</table>

<sup>1</sup>The company was converted to an importation and distribution business in 2012.

<sup>2</sup>Do., do. Ditto.  
<sup>3</sup>Zero.