



# 2013 Minerals Yearbook

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**MALTA**

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# THE MINERAL INDUSTRY OF MALTA

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Malta is a small, densely populated island country located in the central Mediterranean Sea between Italy and North Africa. The Maltese archipelago consists of the three main inhabited islands of Malta, Gozo, and Comino, which contain very few mineral resources and no mineral fuel resources. Geologically, the Maltese islands are composed almost entirely of Tertiary limestones divided into the following five formations: Upper Coralline Limestone, Greensand, Blue Clay Limestone, Globigerina Limestone, and Lower Coralline Limestone (Schembri, 1993, p. 1; Magri, 2006, p. 11). The country produced construction aggregate (soft and hard limestone) in amounts that were not significant on a regional or world scale. Salt production was expected to increase with the completion of salt pan restoration. Offshore hydrocarbon exploration in Malta's territorial waters was scheduled to begin in 2014 by a number of companies that had received offshore petroleum drilling licenses in the past 3 years (Carabott, 2013; Pace and Koppini, 2014, p. 285).

In 2013, the newly elected Government initiated energy sector reforms to tackle Malta's high cost of energy through a program of gradually shifting power generation from fuel oil to natural gas. The new energy policy sought to reduce the country's dependence on imported petroleum and boost its renewable energy output in order to meet its obligation as a European Union (EU) member state, which requires Malta to generate 10% of its energy needs from biomass, solar, and wind sources by 2020 (European Commission, 2013b; Saydon and others, 2013, p. 6; Report, The, 2014).

## Minerals in the National Economy

In 2013, Malta's real gross domestic product (GDP) increased by 2.4% compared with that of 2012, and its economy outperformed most other EU member states. The nominal GDP in 2013 was \$9.6 billion, which was up from \$8.9 billion in the previous year. The country's economic growth accelerated owing to an increase in private consumption and accumulations of inventory, which offset decreased exports and private investment (European Commission, 2014a, p. 80; International Monetary Fund, 2014, p. 54; World Bank, The, 2014).

The mineral sector constituted a minor but a growing component of Malta's economy. In 2013, mining and quarrying made up 0.6% of industrial production. Of the total gross value-added growth of 4.3% by all sectors of the economy in 2013, the mining and utilities sectors combined added 1.1%, and the services sector, which was the predominant sector in the country and the main driver of growth, added 3.5%. The increased value added by mining and utilities was mainly the result of more-efficient energy production, which also led to reduced imports of crude petroleum (Central Bank of Malta, 2014c, p. 40, 41).

## Production

The main mineral commodities produced in Malta in 2013 were limestone and evaporated (solar) salt. Both were used locally, mostly in construction and lime manufacturing, and food consumption, respectively. Production data were reported for various kinds of limestone for 2010 to 2012 and were estimated for the years 2009 and 2013 (table 1). The production of construction aggregate in the form of blocks, chippings, granules, gravel, and pebbles had decreased since 2009, probably owing to the slowdown in construction activity. The rate of decline was particularly pronounced for chippings. Only limesand production increased; the level of salt production was unchanged (National Statistics Office, 2014).

## Structure of the Mineral Industry

As of 2013, there were 28 hard limestone quarries and 66 soft limestone quarries on the islands of Gozo and Malta (European Commission, 2014b, p. 6). These quarries were excavated for various kinds of stone for use by the construction industry; however, available information regarding production from these quarries was inadequate to make reliable estimates of individual quarry output (WasteServ Malta Ltd., 2003). In addition, little information was available regarding the ownership of Malta's quarries or their capacity and locations. The small-scale, private, domestic-ownership structure of quarries reflects the production structure in Malta's broader economy, which contains only a small number of large foreign-owned, export-oriented subsidiaries of multinational companies concentrated in a few sectors. It was estimated that 70% of the hard limestone and 68% of the soft limestone quarries were operating without all the required permits (tables 1, 2; Entec UK Ltd., 2003a, p. 2; European Commission, 2013a, p. 17).

The most recent assessment of limestone reserves on the Maltese islands was made in 2000 using aerial photography of quarries. According to this assessment, licensed reserves were 20,737,000 cubic meters of hard limestone, with an estimated duration of 28 years based on an estimated annual production rate of 740,000 cubic meters, and 11,490,000 cubic meters of soft limestone, with a duration of 29 years based on an estimated annual production rate of 400,000 cubic meters (Entec UK Ltd., 2003b, p. 4–6).

## Mineral Trade

Malta had a very open, export-driven economy, but the bulk of its exports were in services (Dumitru, 2014). The mineral-related sectors of Malta's economy depended almost completely on imports, the reexporting of raw materials and fuels, and the storage of crude petroleum. In terms of value, imports of lubricants, mineral fuels, and related materials accounted

for nearly 40% of imports, although imports of these mineral commodities decreased by 21% compared with those of 2012. Among Malta's exports, lubricants, mineral fuels, and related materials were again the leading category. In terms of value, exports from this category accounted for almost 42% of all merchandise exports but decreased by 20% compared with exports from this category in 2012 (Central Bank of Malta, 2014c, p. 73).

The EU member countries were Malta's principal trading partners, receiving 31.6% of Malta's merchandise exports and supplying 57.3% of its total imports of goods in 2013. Asian countries, especially China, have accounted for an increasing share of Malta's exports and imports since 2011, receiving 27.6% of Malta's exports and supplying 14.8% of its imports in 2013. The United States received 4.3% of Malta's exports and supplied 3.3% of its imports. In 2013, Malta's exports to the United States were valued at \$212 million and included chemical products valued at \$356,000 and steelmaking materials valued at \$69,000. Malta's imports from the United States were valued at \$517 million. These imports included fuel oil valued at \$365 million and petroleum products valued at \$21 million (Central Bank of Malta, 2014a; 2014b; 2014c, p. 73, 74; U.S. Census Bureau, 2014a, b).

## Commodity Review

### *Industrial Minerals*

**Salt.**—Malta produced salt using salt evaporation pans in small coastal salinas on the islands of Gozo and Malta; coastal salinas are found in only a few Mediterranean countries. The harvesting of salt from salinas is achieved by carving out the rock to create storage ponds for seawater, evaporation pools, and crystallization pans (ALAS Newsletter, 2001; Morona, 2012). At their peak, the salinas produced about 4,000 metric tons of salt annually over two harvests. Storms damaged the salt pans in 1979, however, and floods in 1998 and 2003 caused further damage. As a result, salt production in Malta had all but ceased. Since 1979, Malta had imported almost all the salt it consumed. An estimated 40 sites around the islands of Gozo and Malta contain salt pans, but very few of the pans were actively harvested. A project to restore and clean 35 salt pans at Salina Bay on the north of the island of Malta began in December 2011, with 75% of the funding provided by the EU. The project was designed to enhance the production and storage of salt and was scheduled to be completed by November 2013. Malta was expected to resume salt production on a notable scale beginning in 2014 (Entec UK Ltd., 2003a, p. 2; Carabott, 2013; Jung, 2014).

### *Mineral Fuels*

Petroleum was the main energy source for Malta, accounting for almost 99% of its energy supply. All petroleum consumed in the country was imported. Renewable energy sources met only 1.26% of gross final consumption in 2011 (the latest year for which data were available), which was the lowest percentage among all 28 member states of the EU (European Commission, 2013b, p. 15; Riolo, 2013).

**Petroleum.**—In 2013, steps were taken by the Government and energy companies to begin offshore hydrocarbon

exploration in 2014. The Government signed an accord with Italy in July and with Libya in September to delineate economic zones in the Mediterranean Sea and to undertake joint exploration for petroleum and natural gas (Pace and Coppini, 2014, p. 285). In May 2013, Mediterranean Oil and Gas Ltd. (MOG) of the United Kingdom signed a partnership agreement with Genel Energy plc. (an Anglo-Turkish energy exploration company) for Area 4 offshore Malta, which lies in southern Maltese waters to the north of Libya and covers approximately 5,700 square kilometers (km<sup>2</sup>). In September, the two companies reported progress towards drilling an offshore well at the Lower Eocene/Paleocene reservoir at a depth of 2,500 meters in the Hagar Qim prospect, which they expected to spud in the first quarter of 2014. Based on the seabed survey by MOG and Genel Energy, Area 4 was estimated to hold gross resources of 109 million barrels of oil equivalent (SubseaIQ, 2013; Rigzone, 2013b).

In July, MOG reported that it had acquired a 40% interest in Blocks 1, 2, and 3 of Area 3 offshore Malta along with Cairn Energy plc of the United Kingdom, which held the remaining 60% share. The area lies in northern Maltese waters to the south of the Italian island of Sicily and covers approximately 6,400 km<sup>2</sup> (Rigzone, 2013a).

**Natural Gas.**—In 2013, Malta did not produce any natural gas, but the Government's new energy policy envisioned the conversion of powerplants from heavy fuel oil to natural gas as a cleaner and cheaper source of energy and as a way to reduce the country's dependence on imported petroleum. Official steps were taken to construct an onshore regasification unit, a floating gas storage unit in the form of a liquefied natural gas (LNG) tanker next to the Delimara 3 powerplant, and a new gas-fired powerplant (Natural Gas Europe, 2013; Pace and Coppini, 2014, p. 285).

## Outlook

Malta's mineral production is expected to remain modest. Limestone production from quarries is likely to remain as the country's main mineral output. Salt production is expected to increase in the coming years with the restoration of salt pans on the islands of Gozo and Malta. Malta may become a petroleum producer in the long term if hydrocarbon exploration in its territorial waters in the Mediterranean Sea yields commercially viable reserves.

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TABLE 1  
MALTA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

Commodity <sup>2</sup>	(Metric tons)				
	2009 <sup>e</sup>	2010	2011	2012	2013 <sup>e</sup>
<b>Limestone:</b>					
<b>Hardstone:</b>					
Blocks	58,000	57,981	26,573	28,853	28,000
Chippings, gravel, granules, pebbles	1,750,000	1,739,649	1,735,630	1,707,414	1,700,000
<b>Total</b>	<b>1,808,000</b>	<b>1,797,630</b>	<b>1,762,203</b>	<b>1,736,267</b>	<b>1,728,000</b>
<b>Softstone:</b>					
Chippings	14,000	13,447	3,407	239	200
Limesand	1,800	1,832	1,892	2,127	2,200
Stone	117,000	116,716	113,378	102,874	102,000
<b>Total</b>	<b>133,000</b>	<b>131,995</b>	<b>118,677</b>	<b>105,240</b>	<b>104,300</b>
<b>Grand total</b>	<b>1,941,000<sup>r</sup></b>	<b>1,929,625<sup>r</sup></b>	<b>1,880,880<sup>r</sup></b>	<b>1,841,508<sup>r</sup></b>	<b>1,832,300</b>
<b>Salt, solar<sup>c</sup></b>	<b>1,000<sup>r</sup></b>	<b>1,000<sup>r</sup></b>	<b>1,000<sup>r</sup></b>	<b>1,000<sup>r</sup></b>	<b>1,000</b>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised.

<sup>1</sup>Table includes data available through September 22, 2014.

<sup>2</sup>In addition to the commodities listed, small amounts of cement, fertilizer, and plaster are produced, but available information is inadequate to make reliable estimates of output.