

STATE REVIEWS



# Indian Minerals Yearbook 2017

(Part- I)

56<sup>th</sup> Edition

**STATE REVIEWS  
(Meghalaya)**

**(FINAL RELEASE)**

**GOVERNMENT OF INDIA  
MINISTRY OF MINES  
INDIAN BUREAU OF MINES**

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**MEGHALAYA****Mineral Resources**

Coal and limestone are the only major minerals mined in the State. **Coal** occurs in Mikir Hills, Khasi Hills, Jaintia Hills and Garo Hills districts. Resources of **limestone** occur in West Garo Hills, East Khasi Hills, West Khasi Hills and Jaintia Hills districts. Other mineral occurrences are **apatite** in Jaintia Hills district; **china clay** in East Garo Hills & West Garo Hills, Jaintia Hills & East Khasi Hills districts; **copper, lead-zinc, silver and titanium minerals** in East Khasi Hills district; **felspar and rock phosphate** in East Garo Hills & Jaintia Hills districts; **fireclay** in East Khasi Hills & West Garo Hills districts; **granite** in West Khasi Hills district; **iron ore (magnetite)** in East Garo Hills district; **quartz and silica sand** in East Garo Hills, West Garo Hills & East Khasi Hills districts; and **sillimanite** in West Khasi Hills district (Table -1). The various coalfields and their reserves/resources in the State are given in Table-2.

**Exploration & Development**

Details of exploration activities conducted by GSI and various agencies during 2016-17 are furnished in Table - 3.

**Production**

Coal and limestone were the important minerals produced in Meghalaya during the year 2016-17. The production of limestone increased by 33% as compared to the previous year.

The value of minor minerals' production was estimated at ` 721 lakh for the year 2016-17.

There were 13 reporting mines in 2016-17 in the state for limestone. (Table-4)

**Mineral-based Industry**

The present status of each mineral-based industry is not readily available. However, the important mineral-based industries in the organised sector in the State are given in Table - 5.

**Table – 2 : Reserves/Resources of Coal as on 1.4.2017 : Meghalaya**

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
<b>Total</b>	<b>89.04</b>	<b>16.51</b>	<b>470.93</b>	<b>576.48</b>
West Darangiri	65.40	-	59.60	125.00
East Darangiri	-	-	34.19	34.19
Balphakram-Pendenguru	-	-	107.03	107.03
Siju	-	-	125.00	125.00
Langrin	10.46	16.51	106.19	133.16
Mawtong Shelia	2.17	-	3.83	6.00
Khasi Hills	-	-	10.10	10.10
Bapung	11.01	-	22.65	33.66
Jaintia Hills	-	-	2.34	2.34

*Source: Coal Directory of India, 2016-17.*

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Table – 1 : Reserves/Resources of Minerals as on 01-04-2015: Meghalaya

Mineral	Unit	Reserves				Remaining Resources				Total resources (A+B)			
		Proved STD111	Probable STD121	Probable STD122	Total (A)	Feasibility STD211	Pre-feasibility STD221	Measured STD331	Indicated STD332		Inferred STD333	Reconnaissance STD334	Total (B)
Apatite	tonne	-	-	-	-	-	-	-	-	1300000	-	1300000	1300000
China clay#	'000 tonnes	-	-	-	-	-	-	1200	6266	76242	5167	88875	88875
Copper													
Ore	'000 tonnes	-	-	-	-	-	-	-	880	-	-	880	880
Metal	'000 tonnes	-	-	-	-	-	-	-	9	-	-	9	9
Felspar#	tonne	-	-	-	-	-	-	-	-	37449	-	37449	37449
Fireclay#	'000 tonnes	-	-	-	-	-	-	-	-	10999	-	10999	10999
Granite##													
(Dimension Stone)	'000 cum	-	-	-	-	-	-	-	-	-	286467	286467	286467
Iron ore													
(Haematite)	'000 tonnes	-	-	-	-	-	-	-	-	225	-	225	225
Iron ore													
(Magnetite)	'000 tonnes	-	-	-	-	-	-	-	-	3380	-	3380	3380
Lead-Zinc													
Ore	'000 tonnes	-	-	-	-	-	-	-	880	-	-	880	880
Lead metal	'000 tonnes	-	-	-	-	-	-	-	16.5	-	-	16.5	16.5
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	14	-	-	14	14
Limestone	'000 tonnes	135836	87904	1822	225562	68457	39289	46200	2811179	14048758	-	17478553	17704116
Quartz-													
Silica sand#	'000 tonnes	-	-	-	-	-	-	-	177	6906	-	7083	7083
Rock													
Phosphate	tonne	-	-	-	-	-	-	-	-	1311035	-	1311035	1311035
Sillimanite	tonne	-	-	-	-	-	-	-	-	55807	-	55807	55807
Silver													
Ore	tonne	-	-	-	-	-	-	-	880000	-	-	880000	880000
Metal	tonne	-	-	-	-	-	-	-	19.8	-	-	19.8	19.8

Figures rounded off.

# Declared as Minor Minerals vide Gazette notification dated 10.02.2015.

## Minor Mineral before Gazette Notification dated 10.02.2015.

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**Table – 3 : Details of Exploration Activities in Meghalaya, 2016-17**

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
<b>GSI</b>							
<b>REE</b>							
Jaintia Hills & Ri-Bhoi	Bhoilymbong and area between Mynsynghat – Nartiang	1: 12500	26.0	-	-	-	G4 stage evaluation of potentiality of REE was taken up in the area around Bhoilymbong and area between Mynsynghat – Nartiang, by large-scale mapping in parts of Nartiang. Nonglatem, Sohphoh, Mookabeng and Bankamar area.
	Jirang and area between Umsophria- Warmawsaw						G4 level survey of REE was taken up in the area around Jirang and area between Umsophria-Warmawsaw by large-scale mapping. The cordierite gneiss is light to dark grey in colour, medium grained poorly foliated metamorphic rock dominated by cordierite, plagioclase, quartz, garnet, biotite, silimanite and opaque with accessory minerals zircon, apatite & monazite, constituting the possible REE hosts.
<b>Limestone</b>							
East Khasi Hills	West of Ishamati	-	-	8	800	-	G2 stage general exploration drilling for limestone resources, shows presence of micro fossils and algal matters. The thickness of Prang limestone varies from 51.20 to 78.0 m with average thickness of 66 m. Resource estimation will be done after the receipt of analytical data.
East Jaintia Hills	Mynthning block Litang valley	-	-	11	719.80	-	G2 stage general exploration for limestone has been carried out. The thickness of Prang limestone in Litang valley varies from 33 to 132 m. The limestone is mostly cement grade (Portland & blendable) with minor amount of SMS (OH) grade. Resources will be estimated after the receipt of analytical data.
	Samasi-Pala block Litang Valley	-	-	8	783.05	184	G3 stage preliminary exploration for limestone was carried out by drilling in this area. The Prang limestone thickness varies from 52.15 to 198.70 m. The average CaO% in core samples is about 45.52%. Out of the total 184 samples analysed, so far, 41% is cement (Portland) grade, 21% is cement (beneficial) grade, 16% is SMS(OH) grade, 2% is SMS (LD)

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Table – 3 (contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							grade, 1% is chemical grade and rest is others/unclassified category. However, SMS(LD) and Chemical grade are exclusively in calcite vein encountered in boreholes at a depth of 22.60 to 42.10 m. Resources will be estimated after the receipt of all analytical results.
East Jaintia Hills	East of Laphet area, Litang Valley	1:4000	3	-	-	43	G4 stage reconnaissance survey for limestone was carried out by detailed mapping in Pala area, east of Laphet. Analytical results of 43 bedrock samples of limestone show CaO vary from 29.81 to 51.28%, Al <sub>2</sub> O <sub>3</sub> - 0.79 to 6.02%, MgO - 0.34 to 2.39%, Fe <sub>2</sub> O <sub>3</sub> - 0.87 to 26.92% and SiO <sub>2</sub> - 1.84 to 10.57%. Majority of sample result indicates cement grade limestone in the area. About 70% of the samples fall in cement (portland) grade & 19% fall in cement (blendable) grade.
Jaintia Hills	North of Larket block, west of Litang River	-	-	-	804.9	-	G2 level general exploration for limestone has been carried out in this area. All boreholes have intersected Kopilli shale with intercalation of fossiliferous marl of 25 m followed by light grey nummulitic limestone (blendable cement grade), up to a depth followed by light grey to greyish fossiliferous limestone followed by solution rich off-white limestone. This limestone analysed CaO > 50% and SiO <sub>2</sub> > 2%. Estimation of resources will be carried out after the receipt of analytical results.
Jaintia Hills	Tongseng-Shnongrim block, Litang Valley	-	-	-	793	-	G2 level general exploration has been carried out along with drilling in Tongseng-Shnongrim block indicated the presence of very thick i.e. 113.00 to 126.25 m (avg. 119.91 m) grey highly fossiliferous limestone. Resources estimation will be done after the receipt of all analytical results.
Jaintia Hills	Shnongrim-Molasngi block, Litang Valley	-	-	-	815.50	-	G2 level general exploration has been carried out along with drilling for limestone in Shnongrim-Molasngi block indicate presence of very

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Table – 3 (contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							thick, grey, medium grained, highly fossiliferous limestone band. Limestone thickness in boreholes varies from 109.0 to 123.75 m (avg. 117.97 m). Available analytical result shows that CaO content varies from 44.30 to 51.96 wt%, MgO - 1.92 to 2.01 wt% & SiO <sub>2</sub> - 5.70 to 6.49% wt%. Resources will be estimated after the receipt of all analytical data.
Jaintia hills	Lumshorton block	1:4000	3.54	6	645.20	315	Estimated 622.994 million tonnes of resources with CaO 50.65%, MgO 1.68%, SiO <sub>2</sub> 2.80%, Al <sub>2</sub> O <sub>3</sub> 0.27%, Fe <sub>2</sub> O <sub>3</sub> 0.31%, & LOI 41.27% under 332/333 categories. The resources include earlier estimation made by different agencies.

**Table - 4 : Mineral Production in Meghalaya, 2014-15 to 2016-17  
(Excluding Atomic Minerals)**

(Value in ` '000)

Mineral	Unit	2014-15			2015-16			2016-17 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value <sup>\$</sup>
<b>All Minerals</b>		<b>17</b>		<b>15142157</b>	<b>16</b>		<b>21328533</b>	<b>16</b>		<b>3078879</b>
Coal	'000t	3	2524	12670500	3	3712	18634200	3	3712	-
Limestone	'000t	14	3691	2399582	13	3834	2622258	13	5103	3006804
Minor Minerals <sup>@</sup>		-	-	72075	-	-	72075	-	-	72075

*Note: The number of mines excludes minor minerals.*

<sup>\$</sup> Excluding Fuel minerals.

<sup>@</sup> Figures for earlier years have been repeated as estimates because of non-receipt of data.

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**Table – 5 : Principal Mineral-based Industries in Meghalaya**

Industry/plant	Capacity (‘000 tpy)
<b>Cement</b>	
Adhunik Cement (Subsidiary of Dalmia Cement), Distt. Jaintia Hills.	1500
Amrit Cement Industries Ltd, Khleriat, Distt. Jaintia Hills.	3000
Cement Manufacture Co. Ltd, Lumshnong, Distt. Jaintia Hills.	600
Green Valley Industries, Nongsning, Distt. Jaintia Hills.	1000
JUD Cement Ltd, Norpuh, Distt. Jaintia Hills.	500
Mawmluh Cherra Cements Ltd, Cherrapunjee, Distt. East Khasi Hills.	210
Meghalaya Cements Ltd, Thangskai, Distt. Jaintia Hills.	530
Megha Technical & Engineering (P) (Subsidiary of CMCL), Lumshnong, Distt. Jaintia Hills.	700
Hills Cement, Jaintia Hills	
RNB Cement, East Khasi	400
<b>Ferro-alloys</b>	
Jaintia Ferro Alloys Pvt. Ltd, Byrnihat.	6
Maithan Alloys Ltd, Ribhoi.	15 MVA
Nalari Ferro alloys Pvt Ltd, Norbhog.	11
Khasi alloys Pvt Ltd, EPIP Meghalaya.	4.1
<b>Iron &amp; Steel</b>	
Jai Kamakhya Alloy Pvt Ltd	815 tpd

*Source: Data from respective websites of cement industries as well as Survey of Cement Industry & Directory, 2016.*