

STATE REVIEWS



Indian Minerals Yearbook 2017

(Part- I)

56th Edition

**STATE REVIEWS
(West Bengal)**

(FINAL RELEASE)

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

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WEST BENGAL

Mineral Resources

West Bengal is the principal holder of country's apatite resources. It is said to possess 57% apatite and 14% china clay resources of the country. Important minerals that occur in the State are: **apatite** in Purulia district; **coal** in Bardhaman, Bankura, Birbhum, Darjeeling, Jalpaiguri and Purulia districts; **china clay** in 24-Parganas, Bankura, Birbhum, Bardhaman, Hoogly, Midnapur and Purulia districts; and **fireclay** in Bankura, Birbhum, Bardhaman and Purulia districts.

Other minerals that occur in the State are **barytes, copper, gold, kyanite, pyrite** and

titanium minerals in Purulia district; **dolomite** in Jalpaiguri district; **felspar** in Bankura and Purulia districts; **granite** in Bankura, Birbhum and Purulia districts; **lead-zinc** in Darjeeling district; **limestone** in Bankura and Purulia districts; **manganese ore** and **sillimanite** in Midnapur district; **quartz/silica sand** in Bankura, Hoogly and Purulia districts; and **tungsten & vermiculite** in Bankura district Table-1. Reserves/resources of coal and lignite along with details of coalfields/districts are provided in Table-2 & Table -3.

Exploration & Development

Exploration activities were reported by GSI during the year 2016-17 and are provided in Table-4.

Table – 2 : Reserves/Resources of Coal as on 1.4.2017: West Bengal

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	13723.15	12954.46	4989.61	31667.22
Raniganj	13522.36	7210.96	4073.27	24806.59
Barjora	200.79	-	-	200.79
Birbhum	-	5743.50	901.34	6644.84
Darjeeling	-	-	15.00	15.00

Source: Coal Directory of India, 2016-17.

Table –3 : Reserves/Resources of Lignite as on 1.4.2017: West Bengal

(In million tonnes)

District	Proved	Indicated	Inferred	Total
Total	-	1.13	2.80	3.93
Rakshitpur	-	0.29	0.86	1.15
Gourangapur- Bankati	-	-	0.96	
Mahalla	-	0.64	-	0.64
Dhobbanpur	-	0.20	0.78	0.98
Djara	-	-	0.20	0.20

Source: Coal Directory of India, 2016-17.

Table – 1 : Reserves/Resources of Minerals as on 1.4.2015: West Bengal

Mineral	Unit	Reserves					Remaining Resources					Total resources (A+B)		
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333		Reconnaissance	
			STD121	STD122			STD221	STD222					STD334	(B)
Apatite	tonne	-	-	-	1385734	491818	1225345	120000	8845250	852605	666646	13587398	13587398	
Barytes#	tonne	-	-	-	-	-	-	-	433000	-	-	433000	433000	
China clay#	'000 tonnes	1476	727	2957	3617	248	857	38	332236	79923	5793	422712	425669	
Copper	'000 tonnes	-	-	-	-	-	-	-	113	-	-	113	113	
Ore	'000 tonnes	-	-	-	-	-	-	-	2.09	-	-	2.09	2.09	
Metal	'000 tonnes	-	-	-	-	-	-	-	73226	104275	-	238029	238029	
Dolomite#	'000 tonnes	-	-	-	12528	-	48000	-	900000	201250	-	4836889	4962170	
Feldspar#	tonne	70906	54375	0 125281	135639	200000	-	-	3400000	201250	-	4836889	4962170	
Fire clay#	'000 tonnes	981	-	377 1359	201	580	1349	-	419	11114	958	14622	15981	
Gold	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Ore	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
(Primary)	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Metal	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
(Primary)	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Granite##	'000 tonnes	3658	-	3658	-	-	-	19827	1140	8802	-	29769	33427	
(Dim. Stone)	'000 tonnes	-	-	-	-	-	-	-	-	26520	-	26520	26520	
Kyanite	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Lead - Zinc	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Ore	'000 tonnes	-	-	-	-	-	-	-	3371	335	-	3706	3706	
Lead metal	'000 tonnes	-	-	-	-	-	-	-	130.07	10	-	140.07	140.07	
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	130.42	13	-	143.42	143.42	
Limestone	'000 tonnes	-	-	-	-	-	-	7104	15482	22120	-	44706	44706	
Manganese ore	'000 tonnes	-	-	-	-	-	-	-	-	200	-	200	200	
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	2500	-	2500	2500	
Quartzite#	'000 tonnes	-	-	-	24	-	21	-	-	21	-	66	66	
Quartz-	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Silica sand#	'000 tonnes	2853	400	939 4193	310	151	229	-	-	4896	-	5586	9779	
Sillimanite	'000 tonnes	-	-	-	-	-	-	-	-	1653000	-	1653000	1653000	
Tungsten	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
Ore	'000 tonnes	-	-	-	-	-	173063	-	190739	400000	-	763802	763802	
Contained	'000 tonnes	-	-	-	-	-	-	-	-	-	-	-	-	
WO ₃	'000 tonnes	-	-	-	-	-	450	-	80.84	1000	-	1530.84	1530.84	
Vermiculite	'000 tonnes	-	-	-	-	-	-	-	490	5076	-	5566	5566	

Figures rounded off.

Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

Minor Mineral before Gazette Notification dated 10.02.2015

STATE REVIEWS

STATE REVIEWS

Production

During the year 2016-17 production of coal, natural gas (ut.) and sulphur was reported from West Bengal.

The value of minor minerals' production was estimated at ` 146 crore for the year 2016-17. Details are furnished in Table- 5.

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, important mineral-based industries located in the State with their total installed capacities are furnished in Table - 6.

Table – 4: Details of Exploration Activities in West Bengal, 2016-17

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Coal							
Bardhaman	Kherobari block, (Raniganj coalfield)	-	-	7	3158.00	31	G2 stage general exploration for coal was carried out in this block, along with drilling in 7 boreholes. Four Regional coal seam zones viz. R - VIII, R - VII R - VI & R-Basal developed within the depth range of 254.50 to 610.30 m of thickness varying from 0.50 to 2.90 m. One lignite seam of thickness 1.40 m has also been intersected at the depth of 152.00 m.
Birbhum	Buritala block, (Rajmahal-Birbhum coalfield)	1:10000	5.0	5	2426.80	-	G2 stage general exploration for Gondwana coal under the cover of Rajmahal informations in this area. Coal intersected at a depth range of 184.78 to 561.70 m in the Barakar Formation. The total cumulative coal thickness of 4 completed boreholes was 319.41 m.
Gold							
Purulia & Bankura	Rudra Village	-	-	-	-	31	Reconnaissance survey for gold in Singhbhum Group of rocks, in and around Rudra village was taken up to identify presence of auriferous zone (s). Analytical results of 31 soil samples yielded significant values of Au ranging between 0.05 ppm and 0.16 ppm. Besides two BRS samples of metapyroxenite yielded encouraging values of TiO ₂ & V, showing 5.04 & 3.84% of TiO ₂ and 0.045 & 0.044% of V respectively. Another seven BRS samples from different rock yielded TiO ₂ values of 1.21 to 2.01% and V concentrations of 0.015 to 0.0335% respectively.

STATE REVIEWS

**Table – 5 : Mineral Production in West Bengal, 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 ^{\$\$}
All Minerals		118		81612945	76		74710513	76		1455113
Coal	'000t	99	29970	80025800	75	25751	73255400	75	27667	-
Natural										
Gas (ut.) ⁺	m c m	-	228	-	-	392	-	-	564	-
Apatite	t	1	-	-	1	-	-	1	-	-
Felspar [#]	t	*	19137	7840	-	-	-	-	-	-
Fireclay [#]	t	5	60119	11607	-	-	-	-	-	-
Kaolin [#]	t	8	80999	58233	-	-	-	-	-	-
Quartz [#]	t	3	37215	13345	-	-	-	-	-	-
Quartzite [#]	t	1	2560	917	-	-	-	-	-	-
Silica Sand [#]	t	1	89925	40090	-	-	-	-	-	-
Sulphur ^{**}	t	-	49659	-	-	46343	-	-	38580	-
Minor										
Minerals [@]		-	-	1455113	-	-	1455113	-	-	1455113

Note : The number of mines excludes minor minerals.

\$ Excludes the value of Petroleum (crude) & Natural Gas (ut.)

\$\$ Excluding Fuel minerals. + Coal Bed Methane, Includes Jharkhand and MP.

*Associated with Kaolin, Quartz and Silica Sand.

**Recovered as by-product from oil refinery.

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

Declared as Minor Minerals vide Gazette Notification dated 10.02.2015.

STATE REVIEWS

Table – 6 : Principal Mineral-based Industries in West Bengal

Industry/plant	Capacity ('000 tpy)
Asbestos Products	
Everest Building Products Ltd, Kolkata.	NA
Ramco Industries Ltd, Haratara, Distt. Paschim Medinipur.	NA
UAL Industries Ltd, Tungadhowa, Distt. Paschim Medinipur.	150
Abrasives	
Carborandum Universal Ltd, Gopalpur.	NA
K.L.Thirani & Co. Ltd, Kolkata.	NA
Cement	
ACC Ltd (Damodar Cement), Purulia (G).	750
Ambuja Cement Ltd, Sankrail, Distt. Howrah (G).	2400
Ambuja Cement Ltd, Farakka, Distt. Murshidabad (G).	1250
Birla Corporation Ltd (Durgapur Cement Works & Durga Hitech Cement), Durgapur (G).	2300
Burnpur Cement, Asansol, Distt. Burdwan (G).	300
Century Textiles, Sonar Bangala Grinding Unit, Distt. Murshidabad	1500
Lafarge Cement Pvt Ltd, Mejia (G).	1500
Ramco Cement (formerly Madras Cement), Kolaghat, Distt. Purba Medinipur (G).	950
Swasata Cement Ltd, Purulia.	1500
Ultra-Tech Cement Works, Hoogly, West Bengal	1600
Ceramics	
WBCDC Ltd, Kolkata.	0.18
Chemical	
Hindustan Heavy Chemicals Ltd, Khardah, Distt. 24-Parganas.	14.8 (caustic soda) 6 (Cl), 9.8 (HCl) 4.5 (ferric alum) 18.7 (H ₂ SO ₄)
Electrodes	
Graphite India Ltd, Kolkata.	NA
Fertilizer	
Tata Chemicals Ltd, Haldia.	675 (DAP)
Tata Chemicals Ltd (Phosphatic Division), Haldia, Medinipur.	160 (SSP)

(Contd.)

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Teesta Agro Industries Ltd, Rajganj, Jalpaiguri.	165 (SSP)
Jay Shree Chemicals & Fertilizers, Khardah, 24 Parganas.	132 (SSP) 62.70 (H ₂ SO ₄)
The Phosphate Company Ltd, Rishra, Hoogly.	112.8 (SSP)
Sai Fertilizers Pvt. Ltd, Dewanmara, W. Medinipur.	132 (SSP)
Glass	
Hindustan National Glass & Industries Ltd, Rishra.	680 TPD
Iron & Steel	
Durgapur Steel Plant, SAIL, Durgapur.	3009 (sinter) 2088 (pig iron) 1800 (crude/liquid steel)
IISCO Steel Plant, SAIL, Burnpur, Distt. Bardhaman.	550 (pig iron) 2500 (crude/liquid steel) 3800 (sinter)
Alloy Steel Plant, SAIL, Durgapur.	264 (crude/liquid steel)
Rohit Ferrotech Ltd, Bishnupur.	100 (stainless steel) 71.4 (ferro alloys)
Rashmi Metaliks Ltd, Gokulpur, West Midnipore.	1800 (pellets) 580 (sinter)
Pig Iron	
Electrosteel Castings Ltd, Khardah.	400
Kajaria Iron Castings Ltd, Durgapur.	110 326 (sinter)
Tata Metaliks Ltd, Kharagpur.	345 528 (sinter)
Sponge Iron	
Adhunik Corporation Ltd, Angadpur, Durgapur.	60
Aryavrata Steel Pvt. Ltd, Lohamelya Distt. West Medinipur.	36
Howrah Gasses Ltd, Raniganj, Distt. Bardhaman.	60
Jai Balaji Sponge Ltd, Raniganj, Distt. Bardhaman.	105
Rashmi Ispat (Pvt) Ltd, Jhargram Distt. W. Meidnipur.	150
Shyam Sel Ltd, Dewabdighi, Burdwan.	100

(Contd.)

STATE REVIEWS

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Sunil Sponge Iron Ltd, Kolkata.	115
Ferro-alloys	
Kartik Alloys Ltd, Durgapur.	10.7
Bhaskar Shrachi Alloys Ltd, Durgapur.	40
Corporate Ispat Alloys Ltd (Abhijit Group), Durgapur.	74
Dimension Steel and Alloys Pvt Ltd, Bakura.	38
Jai Balaji Industries Ltd, Durgapur (JBIL Group).	106
Maithan Alloys Ltd, Bardhaman.	49 MVA
Modern India Con-Cast Ltd, Bishnupur, Distt. Bankura.	75
Modern India Cone-Cost Ltd, Haldia.	100
Rohit Ferro-Tech Ltd, Haldia.	100.6
Shyam Ferro Alloys Ltd, Burdwan.	100 (50 MVA)
Shyam Ferro Alloys Ltd, Durgapur.	100 (50 MVA)
Shri Vasavi Industries Ltd, Bishnupur, Distt. Bankura.	45
Srinivasa Ferro Alloys Ltd, Durgapur, Distt. Bardhaman.	84.2

(Contd.)

Table - 6 (Concl.)

Industry/plant	Capacity ('000 tpy)
Shri Goyatri Minerals Pvt. Ltd, Bishnupur, Distt. Bankura.	24
Refractory	
Alcoa-ACC Industrial Chemicals Ltd, Kalatalahat.	10
Barakar Refractories (P) Ltd, Barakar, Distt. Bardhaman.	3.6
Kero Rajendra Monolithics Ltd, Banjora.	NA
Saswat International Ltd, Kulti, Distt. Bardhaman.	NA
Vesuvius India Ltd, Kolkata.	96.5
Coke Oven Batteries	
IISCO Burnpur Works, Burnpur, Distt. Bardhaman.	1084
Petroleum Refinery	
IOCL, Haldia.	7500
TiO₂ Pigment	
Kolmak Chemicals Ltd, Kalyani, Distt. Nadia.	4.8

(G): Grinding units.

Note: Data not readily available for fertilizer and cement industries on respective websites, is taken from Indian Fertilizer Scenario, 2015/FAI Statistics, 2015-16 and Survey of Cement Industry & Directory, 2016 respectively.