Indian Minerals Yearbook 2015

(Part- I)

54th Edition

STATE REVIEWS
(Odisha)

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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ODISHA

Mineral Resources

Odisha is the leading producer of chromite, garnet (abrasive), bauxite, manganese ore, iron ore, sillimanite, quartzite and dolomite. The State hosts the country's sole resources of ruby. It accounts for the country's 96% chromite, 93% nickel ore, 90% PGM metal, 69% cobalt ore, 53% bauxite, 45% manganese, 22% pyrophyllite, 35% iron ore (haematite), 24% fireclay, 20% mica, sillimanite and vanadium ore resources each and 10% dolomite and graphite resources each.

Important minerals that occur in the State are: **bauxite** in Balangir, Kalahandi, Kandhamal, Kendujhar, Koraput, Malkangiri, Rayagada & Sundergarh districts; **china clay** in Bargarh, Boudh, Balangir, Kendujhar, Koraput, Mayurbhanj, Sambalpur & Sundergarh districts and **chromite** in Balasore, Cuttack, Dhenkanal, Jajpur & Kendujhar districts. Chromite deposits of Sukinda and Nuasahi ultramafic belt constitute 95% of the country's chromite resources. Besides, **coal** occurs in Ib river valley and Talcher coalfield, Dhenkanal district; **dolomite** in Bargarh, Kendujhar, Koraput, Sambalpur & Sundergarh districts; **dunite/pyroxenite** in Kendujhar and Sundergarh districts; **fireclay** in Angul, Cuttack, Dhenkanal, Jharsuguda, Khurda, Puri, Sambalpur & Sundergarh districts; **garnet** in Ganjam, Kalahandi & Sambalpur districts; **graphite** in Bargarh, Boudh, Balangir, Kalahandi, Koraput, Nuapada & Rayagada districts; **iron ore (haematite)** in Dhenkanal, Jajpur, Kendujhar, Koraput, Mayurbhanj, Sambalpur & Sundergarh districts; **iron ore (magnetite**) in Mayurbhanj district; **limestone** in Bargarh, Koraput, Malkangiri, Nuapada, Sambalpur & Sundergarh districts; **manganese ore** in Balangir, Kendujhar, Koraput, Rayagada, Sambalpur & Sundergarh districts; **pyrophyllite** in Kendujhar district; **quartz/silica sand** in Boudh, Balangir, Kalahandi, Sambalpur & Sundergarh districts; **quartzite** in Balangir, Dhenkanal, Jajpur, Jharsuguda, Kendujhar, Mayurbhanj, Sambalpur & Sundergarh districts; **sillimanite** in Ganjam & Sambalpur districts; **talc/ steatite/soapstone** in Mayurbhanj, Sundergarh & Sambalpur districts; **titanium minerals** in Dhenkanal, Ganjam, Jajpur & Mayurbhanj districts; and **zircon** in Ganjam district.

Other minerals that occur in the State are **asbestos** in Kendujhar district; **cobalt** in Cuttack & Jajpur districts; **copper** in Mayurbhanj and Sambalpur districts; **granite** in Angul, Boudh, Balangir, Cuttack, Deogarh, Dhenkanal, Ganjam, Kendujhar, Khurda, Koraput, Mayurbhanj, Nuapada, Rayagada & Sambalpur districts; **lead** in Sargipalli area, Sundergarh district; **mica** in Sonepur district and **nickel** in Cuttack, Kendujhar & Mayurbhanj districts. Occurrences of **ruby** and **emerald** are reported from Balangir and Kalahandi districts, respectively. **Platinum Group of Metals** occur in Kendujhar district; **silver** in Sundergarh district; **tin** in Koraput and Malkangiri districts and **vanadiferous magnetite** occurs in Balasore and Mayurbhanj districts (Table - 1). The various coalfields along with their reserves/resources are given in Table - 2.

Exploration & Development

The details of exploration activities conducted by GSI and other agencies during 2014-15 are furnished in Table - 3.

Table – 2 : Reserves/Resources of Coal as on 1.4.2015 : Odisha

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	**30746.81**	**36545.04**	**8507.23**	**75799.08**
Ib-River	11193.68	9324.24	4312.62	24830.54
Talcher	19553.13	27220.80	4194.61	50968.54

Source: *Coal Directory of India, 2014-15.*

Table – 1 : Reserves/Resources of Minerals as on 1.4.2010/1.4.2013* : Odisha

Mineral	Unit	Reserves							Remaining Resources					Total Resources (A+B)
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Asbestos	tonne	-	-	-	-	-	-	-	10000	37200	9500	-	56700	56700
Bauxite*	'000 tonnes	166026	22996	327950	516971	55256	77240	257128	310842	155253	567994	27897	1451611	1968582
China clay#	'000 tonnes	2376	715	811	3901	-	1252	2476	223	35393	236421	1259	277025	280926
Chromite*	'000 tonnes	56559	13615	36222	106397	27683	19907	36711	21184	32265	42313	21922	201985	308381
Cobalt*	Million tonnes	-	-	-	-	-	-	-	30.63	-	0.28	-	30.91	30.91
Copper*														
Ore	'000 tonnes	-	-	-	-	-	-	-	1420	2536	2095	-	6051	6051
Metal	'000 tonnes	-	-	-	-	-	-	-	21.69	21.06	20.69	-	63.44	63.44
Dolomite*	'000 tonnes	136148	34873	19694	190715	30010	24529	80869	40779	43412	323157	76289	619044	809759
Dunite	'000 tonnes	3337	-	-	3337	-	4717	5267	-	384	627	-	10995	14333
Fireclay#	'000 tonnes	581	278	52	911	2135	11280	3774	26185	42747	83045	-	169166	170077
Garnet	tonne	-	3185605	-	3185605	5	-	-	-	-	348000	-	348005	3533610
Granite														
(Dim. stone)	'000 cum	-	80000	-	80000	-	-	-	330328	-	1432492	240	1763060	1843060
Graphite*	tonne	178371	3013	304063	485447	9345730	3312065	1363492	696021	838559	2631478	304628	18491973	18977420
Iron ore*														
(Haematite)	'000 tonnes	2607013	301435	433554	3342003	425591	542769	286368	460342	452876	1601542	71092	3840580	7182582
Iron ore*														
(Magnetite)	'000 tonnes	-	-	-	-	-	83	-	27	-	43	-	153	153
Laterite*#	'000 tonnes	-	-	-	-	-	-	-	-	-	-	1227	1227	1227
Lead-Zinc*														
Ore	'000 tonnes	-	-	-	-	-	961	119	-	-	670	-	1750	1750
Lead metal	'000 tonnes	-	-	-	-	-	34.32	4.25	-	-	38.39	-	76.96	76.96
Limestone	'000 tonnes	280588	466627	126717	873932	3225	49045	241871	133600	44562	386952	49800	909055	1782987
Manganese														
Ore*	'000 tonnes	17959	12802	3625	34386	27904	27511	35583	4433	10503	69413	3410	178756	213142

(Contd.)

Table - 1 (Concld.)

Mineral	Unit	Reserves				Remaining Resources								Total Resources (A+B)
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Mica#	Kilogram	-	-	-	-	-	6216000	52024000	-	20328000	26712000	-	105280000	105280000
Nickel ore*	Million tonnes	-	-	-	-	-	20.84	20.62	30.85	51.06	51.26	-	174.63	174.63
Pt. Group of metals	tonne	-	-	-	-	-	-	7.7	-	-	6.5	-	14.2	14.2
Pyrophyllite#	tonne	3329278	1001802	525100	4856180	1973032	194121	3920129	80	40	1331393	17161	7435955	12292135
Quartzite#	'000 tonnes	3629	1151	1783	6563	4204	9834	3744	681	-	34851	523	53837	60400
Quartz-silica sand#	'000 tonnes	438	69	860	1367	1161	1503	2599	90	63385	3836	-	72574	73941
Ruby	Kg	143	-	93	236	-	-	3165	286	38	1623	-	5113	5349
Sillimanite	tonne	-	1602228	-	1602228	-	-	6557013	-	-	4943600	-	11500613	13102841
Silver*														
Ore	tonne	-	-	-	-	-	960500	119000	-	-	670000	-	1749500	1749500
Metal	tonne	-	-	-	-	-	27.34	3.4	-	-	34.17	-	64.91	64.91
Talc-steatite soapstone#	'000 tonnes	123	178	112	414	31	1	109	-	-	265	-	406	820
Tin*														
Ore	tonne	-	-	-	-	12692	636	-	-	1166	1000	-	15494	15494
Metal	tonne	-	-	-	-	34.63	500.78	-	-	22.2	10	-	567.61	567.61
Titanium** minerals	tonne	-	4274178	-	4274178	-	-	-	950000	-	38280000	-	39230000	43504178
Vanadium*														
Ore	tonne	-	-	-	-	-	1220000	-	-	232000	3412795	-	4864795	4864795
Metal	tonne	-	-	-	-	-	2135	-	-	487.2	10935.74	-	13557.94	13557.94
Zircon	tonne	-	146085	-	146085	-	-	-	-	-	-	-	-	146085

Figures rounded off.

** Reserves/Resources as on 1.4.2013.*

*** Resources of Ilmenite, rutile and zircon as per Department of Atomic Energy are provided in the respective Mineral Reviews.*

 # Declared as minor mineral vide Gazette notification dated 10.2.2015.

Table – 3 : Details of Exploration Activities in Odisha, 2014-15

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Chromite							
Dhenkanal	North Bhuasuni-parbat block	-	-	7	-	-	G4 stage investigation for chromite was taken up with an objective to evaluate possible occurrence of chromite bodies by test drilling. The study area is located in the contact between Eastern Ghat Mobile Belt (EGMB) and Supracrustals of Singhbhum Craton (SC). A number of discontinuously occurring ultramafic bands occur from Chandar to Tangeria–Bhuasuniparbat–Tulasipasi. It is represented by silicified serpentinite, altered peridotite, pyroxenite, gabbroic anorthosite, magnetite and gabbro etc. Chromites are found to be associated with serpentinite and silicified serpentinite in the form of dissemination, stringers, veins and thin bands. Seven boreholes were drilled to study the presence of chromite at depth. On the basis of present work, ultramafic bands extending for 250 m strike length in the eastern part and 200 m strike length in the central part of the block with disseminations of chromite have been identified. A 1.40 m thick chromite band (23.03% Cr_2O_3) was also intersected in borehole no BBH-3 at the depth from 52.95 to 54.35 m. The investigation has been completed.
Coal							
Mahanadi Valley Coalfield	Grindola block	-	-	2	321.1	-	During this period a total of 321.10 m was drilled in Grindola Block in last two boreholes (IBGD-6 & IBGD-7 completed) in which two regional coal seam zones of Barakar Formation i.e., Rampur seam zone (intersected from 626.27 m to 789.69 m in two boreholes) and Ib seam zone (intersected from 761.01 m to 771.63 m in B.H. no. IBGD 7 only) were intersected. A total of 91.95 m coal sample was collected and sent to CIMFR for analysis. Rampur seam zone is the thickest seam zone having maximum cumulative coal thickness of 49.68 m with eight splits intersected at roof depth of 666.32 m in IBGD-6 and Ib seam zone has cumulative coal thickness of 2.83 m with four split sections. Coals are rich in vitrinite and inertinite percentage with moderately high percentage of liptinite in some of the seams. VRo% (random) varies from 0.35 to 0.48 and rank wise the coal can be categorised under 'Sub - Bituminous Coal' type. The grade of coal varies mostly from D to F. Total indicated resource of 839.64 million tonnes has been assessed for the block. (Contd.)

Table – 3 : (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Coal							
Mahanadi Valley Coalfield	Bandbahal block	-	-	5	2687.45	-	A total of 2687.45 m was drilled in five boreholes (three completed and two in progress) in Bandbahal Block along with collection of 504.47 m coal sample. Four regional coal seam zones of Barakar Formation (Belpahar, Parkhani, Lajkura and Rampur from top to bottom) were intersected from 235.86 m to 861.75 m depths. The Lajkura seam zone, having the maximum cumulative thickness of 63.09 m (in BH no IBBA-5), is the most important for its regional persistence and its thickness increases towards the down dip direction. The Belpahar and Parkhani seam zones have maximum cumulative thickness of 15.77 m in IBBA-5 and 35.30 m in IBBA-6, respectively. Four regional coal seams of Raniganj Formation (R-IV to R-I) were intersected within 54.95 m to 230.48 m depths. The R-I seam zone having maximum thickness of 17.58 m, is most important for the shallow depth occurrence. The maximum cumulative coal thickness of R-IV, R-III and R-II is 5.82 m, 14.71 m and 2.26 m, respectively. The exploration in Bandbahal block also indicates promising down dip occurrence of R-I seam in shallow depth and increase in cumulative coal thickness of Lajkura seam zone. The extensions of regional Barakar and Raniganj coal seam zones have been established for about 2 km along the strike and 1.5 km along the dip.
Mahanadi Valley Coalfield	Bartap block	-	-	4	2686.15	-	A total of 2686.15 m was drilled in four boreholes in Bartap Block (3 completed and one in progress) along with collection of 629.88 m coal sample during this period. Three regional coal seam zones of Raniganj Formation (Raniganj: R-III to R-I in descending order) and five regional coal seam zones of Barakar Formation (Belpahar to Ib from top to bottom) were intersected between 13.96 m and 684.47 m depth. Amongst the Raniganj seam zone R-I (2 to 4 splits) was the most important seam intersected at 13.96 m depth in IBBR-1 and it has the maximum thickness of 10.10 m in IBBR-2. The other seam zones R-III (maximum cumulative thickness of 1.72 m with two splits in IBBR-4) and R-II (maximum cumulative thickness 5.37 m with two splits in IBBR-2) have their regional persistency. Amongst the Barakar seam zones, Lajkura (with 4 to 6 splits) was the most (Contd.)

Table – 3 : (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							important seam intersected at 357.72 m depth in IBBR-1 and it had the maximum thickness of 61.58 m in IBBR-3. The other seam zones, Belpahar (maximum cumulative thickness of 19.10 m with ten splits in IBBR-4), Parkhani (maximum cumulative thickness 28.84 m with fourteen splits in IBBR-2), Rampur (maximum cumulative thickness 51.82 m with seven splits in IBBR-2) and Ib (maximum cumulative thickness 4.79 m with four splits in IBBR-1) have their regional persistency and were intersected in all boreholes. CBM desorption study of eighteen coal samples from IBBR-1 indicate the maximum desorbed gas content of 0.12 cc/g at NTP. Extension of Raniganj and Barakar regional coal seams has been established for about 2 km along strike and 2.5 km along dip direction.
Coal							
Talcher	Kantaikoliya area	1:50000	4	3	1331.1	-	A total 1331.10 m was drilled in Kantaikoliya area in 3 boreholes (2 completed and one in progress) and an area of 4 sq km coalfield map was updated on 1:50000 scale. Four regional coal seams (seam nos: IX, IV, III and II) of Barakar Formation have been established for 2 km in strike direction. A total cumulative coal thickness of 15.22 m (during this period only) was intersected from the depth range from 155.50 m to 372.94 m representing parts of seam zones IX (0.54 m-2.04 m), VII (0.75 m), IV (1.04 m-2.44 m), III (0.75 m-2.23 m) and II (1.07 m) in borehole no. TKK-2. In the third borehole TKK-3, total cumulative coal thickness of 17.07 m was intersected from 116.04 m to 363.92 m depth forming part of seam zone IX (0.85 m-2.11 m), IV (0.76 m-1.15 m), III (0.51 m-2.19 m) and II (1.03 m). A total of 955 m geophysical logging was done in two boreholes. The fourth borehole (TKK-4) was progressed upto 342.40 m depth intersecting Barren Measure Formation and Barakar Formation devoid of any coal seam. However, a thin band of coal (0.44 m) was intersected between the depth ranges from 180.74 m to 181.18 m probably representing the part of the degenerated seam zone of III.
Gold							
Kendujhar and Angul	Jamphirposi-Shankarkhol block of Bonai-Kendujhar belt	-	-	-	-	-	G4 stage investigation was carried out in search of gold mineralisation. BRS samples of metabasalt have shown gold

(Contd.)

Table – 3 : (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							values of 200 ppb, 210 ppb and 540 ppb, whereas panned concentrate of SSS yielded upto 300 flakes of visible gold/ nugget from 1st and 2nd order nalas. The sulphides occur in the form of lenses, veinlets and disseminations. The laterites with criss-crossing smoky/white quartz veins and Quartz Pebble Conglomerate (QPC) horizons are sampled for possible gold occurrence. The investigation is completed.
Iron ore							
Sundergarh	Kalamang West block (northern part)	-	-	11	1040.85	-	G3 stage investigation has been taken up with an objective to assess iron ore potential in the eastern continuous area of Ghorhaburhani and Sagasahi east block for augmentation of resource. Eleven boreholes viz. BH SKN-1 to SKN-11 achieving a total drilled metreage of 1040.85 m were drilled at 200 m × 200 m grid interval. Boreholes SKN-1 to SKN-7 intersected the medium to high grade iron ore body (occasionally powdery ore and laminated ore) with a considerable cumulative thickness of 78.0 m, 50.80 m, 43.0 m, 30.30 m, 44.60 m, 93.10 m and 54.0 m with average grade 59.61% Fe, 57.82% Fe, 61.61% Fe, 62.07% Fe, 61.17% Fe, 60.77% Fe and 60.11% Fe, respectively. Boreholes SKN-8 to SKN-11 intersected the medium grade iron ore body with 50-60% Fe as per visual estimation (as analytical results are yet to be received) with a considerable cumulative thickness of 76.30 m, 72.0 m, 104.0 m and 69.25 m, respectively. The contiguous area towards north is found to be encouraging.
Sundergarh	Ghorhaburhani South Block	-	-	7	-	-	Exploration was taken up with an objective to assess the iron ore potential in the southern continuous area of Ghorhaburhani and Sagasahi south block for augmentation of resource. Seven boreholes were drilled and all have intersected the mineralised zone with thickness varying from 14.00 m to 76.00 m. The borehole data indicate that the ore body is closely associated with shale and its thickness varies along strike as well as in the dip direction. The study area comprises ferruginous shale, iron ore and laterite. The work will continue in FS 2015-16.
Manganese							
Angul	Bhagawanpur-Santipur block and Tentalapani block	-	-	-	-	-	G4 stage investigation taken up in the eastern part of Eastern Ghat Granulite Belt with an objective to locate potential zones of manganese ore bands. The study area comprises calc-silicate, khondalite,

(Contd.)

Table - 3 (Concld.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage	(No.)	Reserves/Resources estimated
							quartzite, charnockite, porphyritic granite/granite gneiss belonging to the Eastern Ghat Supergroup. Manganese occurs as E-W trending; 2 m to 3 m wide discontinuous bands within calc-silicate and quartzite for 60 m with low to moderate dip towards north. Most of the ores are hard, compact and fragmented in nature. Pyrolusite and psilomelane are the major ore minerals. It displays botryoidal texture. Five discontinuous manganese ore bands have been exposed in trenches. Its width varies from 2 m to 3 m and its strike continuity has been established for 60 m, 50 m, 50 m, 20 m and 15 m approximately. Analytical results of trench samples show manganese and phosphorous from 5.02 to 21.03% and 0.28 to 2.48% respectively. The investigation will continue in FS 2015-16.
Platinum Group of Elements (PGE)							
Kendujhar and Dhenkanal	Patakhali-Balijori and Ghuturigaon-Mundasahi areas	1:12500		-	-	156	G4 stage investigation was taken up. LSM (1: 12500 scale) was carried out in Patakhali-Balijori Block with the objective of delineating prospective areas for PGE. The area comprises mainly mafic-ultramafic bodies like gabbro, anorthositic gabbro, peridotite-dunite and pyroxenite, intruding into quartzite of Iron Ore Supergroup. A shear zone trending N60°W-S60°E is recorded from north of Kararhabeni to west of Benamunda. No significant surface indication of mineralisation (chromites/ sulphides) for PGE has been observed. Fine disseminations of chromites and/or sulphides were observed in peridotite unit. A total of 105 BRS and 51 PTS have been collected. Analytical results of BRS show no encouraging PGE values. SEM-EDX study revealed several gold grains as discrete phase in pyroxenite and peridotite samples. The investigation will be continued in FS 2015-16.
Indian Rare Earths Ltd (IREL)							
Beach sand/Placer Minerals							
Ganjam	-	-		409	3385	2442	IREL carried out exploration at OSCOM beach placer deposit, Ganjam district, by 3,385 m drilling in 409 boreholes and mineralogical analysis of 2,442 nos. samples. Reserves of beach sand were estimated at 18.59 million tonnes under proved (111) and 16.34 million tonnes under probable (121 & 122) categories.

Production

The value of mineral production (excludes atomic mineral and value for the monthof February and March in respect of 31 minerals declared as minor mineral vide Gazette notification dated 10.02.2015) in Odisha at ₹ 29,119 crore in 2014-15 decreased by 12% as compared to the previous year. Odisha accounted for 10% in the total value of mineral production in the country during the year under review. The important minerals produced in the State were coal, iron ore, chromite, bauxite and manganese ore which together accounted for 99% value of mineral production in 2014-15.

Odisha shared almost entire output of chromite and was also the leading producer of bauxite and iron ore with a share of 42% and 40% of the total production of respective minerals in the country during the year 2014-15.

Of the important minerals in the state, production of sillimanite increased (56%), bauxite (21%) and coal (9%) as compared to that in the previous year. However, the production of limestone decreased by 8%, chromite 25%, iron ore 32%, garnet (abrasive) 37% and manganese ore 51% during the year 2014-15 (Table-4).

The value of production of minor minerals was estimated at ₹ 86 crore for the year 2014-15.

The number of reporting mines in 2014-15 was 172 as against 185 in the previous year.

Table - 4 : Mineral Production in Odisha, 2012-13 to 2014-15 (Excluding Atomic Minerals)

(Value in ₹ '000)

Mineral	Unit	2012-13			2013-14			2014-15 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value
All Minerals		**192**		**236941763**	**185**		**331117211**	**172**		**291186441**
Coal	'000t	28	110100	47256800	27	112900	150160600	27	123600	158984300
Bauxite	t	5	5460037	2693761	5	7635196	3578360	4	9233131	4826823
Chromite	t	21	2827067	22598913	21	2877298	23755309	21	2161468	18175496
Iron Ore	'000t	75	64439	158924967	71	76188	147262824	67	52026	105048130
Manganese Ore	t	39	527966	2485010	38	663710	3339180	35	326117	1748608
Dolomite#	t	4	992470	521436	4	687823	348854	3	413891	253198
Garnet (abrasive)*	t	-	23898	128022	-	19091	106012	-	11999	68153
Graphite (r.o.m.)	t	3	6530	3816	2	10521	5927	1	2083	1302
Iolite	kg	2	-	-	2	-	-	2	-	-
Sillimanite	t	1	12314	98426	1	11722	76252	1	18311	126074
Limestone	'000t	9	3912	1344027	6	3718	1578044	6	3409	1074234
Pyrophyllite#	t	-	-	-	2	10066	4914	2	3388	1743
Quartz#	t	2	7720	3529	2	7142	7870	1	-	-
Quartzite#	t	3	26818	26289	4	43455	36298	2	21863	21613
Minor Minerals@		-	-	856767	-	-	856767	-	-	856767

Note: *The number of mines excludes minor minerals.*
** Associated with Sillimanite.*
@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.
 # Declared as minor mineral vide Gazette notification dated 10.02.2015.

Mineral-based Industry

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

Table – 5 : Principal Mineral-based Industries in Odisha

Industry/plant	Capacity ('000 tpy)
Aluminium/Alumina	
Hindalco Industries Ltd, Hirakud.	217 (aluminium)
Hindalco Industries Ltd, Aditya Aluminium, Lapanga, Distt. Sambalpur.	360 (aluminium)
NALCO, Damanjodi, Distt. Koraput.	2275 (alumina)
NALCO, Angul.	460 (aluminium)
Utkal Alumina International Ltd, Rayagada.	1500 (alumina)
Vedanta Aluminium Ltd, Lanjigarh, Distt. Kalahandi.	1000 (alumina)
Vedanta Aluminium Ltd, Jharsuguda, Distt. Sambalpur.	500 (aluminium)
Jharsuguda Unit - II (trial run)	312.5 (aluminium)
Asbestos Products	
UAL Industries Ltd, Korian, Distt. Dhenkanal.	30
Komark Cement & Asbestos Industries Ltd, Bhubaneshwar.	NA
Cement	
Bargarh Cement Ltd, Bargarh.	2110
Ultra-Tech Cement Ltd, Jharsuguda (G).	1000
OCL India Ltd, Rajgangpur, Distt. Sundergarh.	4000
OCL India Ltd, Kapilas (G).	1350
Toshali Cements Pvt Ltd, Ampavalli, Distt. Koraput.	240
Fertilizer	
IFFCO, Paradeep.	1500 (DAP) 420 (Complex)
Paradeep Phosphates Ltd, Paradeep.	720 (DAP)
SAIL Fertilizer Plant, Rourkela, Distt. Sundergarh.	480 (CAN) (idle) 28.2 (A/S)
Iron & Steel	
SAIL, Rourkela Steel Plant,	5300 (sinter)

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Rourkela, Distt. Sundergarh.	2120 (pig iron) 4400 (crude/liquid steel) 85 (tin plates)
Visa Steel Ltd, Kalinganagar, Distt. Jajpur.	225 (pig iron) 300 (sponge iron) 500 (special steel)
OCL India Ltd, Lamloi, Distt. Sundergarh.	120 (sponge iron) 85 (billets)
Orissa Sponge Iron Ltd, Palaspanga, Distt. Kndujhar.	250 (sponge iron) 100 (steel ingot)
Neelachal Ispat Nigam Ltd, Dubri, Distt. Jajpur.	1711 (sinter) 855 (pellets) 1100 (crude/liquid steel) 13 (A/S)
Bhushan Power & Steel, Sambalpur.	1000 (sinter) 2500 (crude steel)
Bhushan Steel Ltd, Dhenkanal.	5600 (crude Steel)
Jindal Stainless Steel Ltd, Kalinganagar, Jajpur.	1000 (Stainless steel) 250 (ferro alloys)
Jindal Steel & Power Ltd, Barbil.	9000 (pellets)
Arya Iron & Steel Co. Pvt Ltd., Barbil.	1200 (pellets)
Essar Steel Ltd, Paradeep.	6000 (pellets)
Rexon Strips Ltd, Kumakela, Distt. Sundergarh.	300 (pellets) 60 (sponge iron) 25 (M. S. ingots)
Pig Iron	
IDCOL Kalinga Iron Works Ltd, Barbil, Distt. Kndujhar.	180
Sponge Iron	
Action Ispat & Power (P) Ltd, Pandripather, Distt. Jharsuguda.	250
Adhunik Metaliks Ltd, Chandrihariharpur, Distt. Sundergarh.	270
Beekay Steel & Power Ltd, Uliburu, Distt. Barbil.	105
Bhusan Steels & Strips Ltd, Meramandali, Distt. Angul and Dhenkanal.	280
Crackers India (Alloy) Ltd, Gobardhanpur, Distt. Kndujhar.	60
Deepak Steel & Power Ltd, Topadihi, Distt. Kndujhar.	144

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Dinabandhu Steel & Power Ltd, Kalinganagar, Distt. Jajpur.	60
Jay Iron & Steel Ltd, Balanda, Rourkela, Distt. Sundergarh.	60
MGM Steel Ltd, Nimidha, Distt. Dhenkanal.	100
Ganesh Sponge Pvt Ltd, Krushnachandrapur, Distt. Angul.	30
Kusum Powermet Pvt. Ltd, Kutugaon, Distt. Kendujhar.	100
Mayur Electro Ceramics Pvt. Ltd, Pratapgarh, Distt. Mayurbhanj.	15
Neepaz Metaliks Pvt Ltd, Sundergarh.	60
Rungta Mines Ltd, Unit-I, Karakola, Barbil, Distt. Kendujhar Unit-II, Kamando, Distt. Sundergarh.	330
Scan Sponge Iron Ltd, Rambahal, Distt. Sundergarh.	60
Scaw Industries Pvt. Ltd, Gundichapara, Distt. Dhenkanal.	100
Sponge Sales (India) Pvt Ltd, Kutugaon, Distt. Kendujhar.	60
Sree Metallic Ltd, Loidapada, Distt. Kendujhar.	174
Suraj Products Ltd, Barpalli, Distt. Sundergarh.	45
Surya Sponge Iron Ltd, Budhakendua, Distt. Jajpur.	84
Tata Sponge Iron Ltd (Ipitata sponge), Joda, Distt. Kendujhar.	390
Vikram Pvt Ltd, Tumkela, Distt. Sundergarh.	60
Ferro Alloys	
Balasore Alloys Ltd, Balgopalpur, Distt. Balasore.	95 (57 MVA)
FACOR, Charge Chrome Plant, Randia, Distt. Bhadrak.	65
IDCOL Ferro Chrome & Alloys Ltd, Distt. Jajpur.	18
Indian Metal & Ferro alloys Ltd (Indian Charge Chrome Ltd, Choudwar & Indian Metals & Ferro Alloys Ltd, Therubali), Distt. Cuttack.	275 (Total)

(Contd.)

Table - 5 (Concld.)

Industry/plant	Capacity ('000 tpy)
Jindal Stainless Ltd, Kalinganagar, Distt. Jajpur.	250
Nav Bharat Ventures Ltd, Ferro Alloys Plant, Khargprasad, Distt. Dhenkanal.	75
Rohit Ferro-Tech Ltd, Kalinganagar, Distt. Jajpur.	110
Jeypore Sugar Co. Ltd, Rayagada	22.5
Tata Steel Ltd (Ferro alloys and Minerals Div.), Joda, Distt. Kendujhar.	52
Tata Steel Ltd (Ferro alloys and Minerals Div.), Bamnipal, Distt. Kendujhar.	60
Tata Steel Ltd (Ferro alloys and Minerals Div.), Distt. Cuttack	50
T.S.Alloys Ltd, Anantpur, (Rawmet Ferrous Industries Ltd), Distt. Cuttack.	52
Visa Steel, Kalinganagar.	180
Refractory	
IFGL Refractory Ltd, Kalunga, Distt. Sundergarh.	80000 pc (continuous casting refractories)
Orissa Industries Ltd, Lakhikata, Distt. Sundergarh.	125
Orissa Industries Ltd, Barang, Distt. Cuttack.	19 5 (DBM)
TRL Krosaki Refractories Ltd, Belpahar, Distt. Jharsuguda.	247.89 18 (Taphole clay)
Silicon Carbide	
Indian Metals & Carbide Ltd, Therubali.	NA
Synthetic Rutile	
IREL, Orissa Sands Complex, Ganjam (Presently non-operational).	100

(G): *Grinding units.*

Note: Data, not readily available for fertilizer and cement industries on respective websites, hence it has been taken from Indian Fertilizer Scenario, 2015/FAI Statistics, 2014-15 and Survey of Cement Industry & Directory, 2015 respectively.