

STATE REVIEWS



# Indian Minerals Yearbook 2013

(Part- I)

52<sup>nd</sup> Edition

STATE REVIEWS  
(Chhattisgarh)

(FINAL RELEASE)

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## CHHATTISGARH

### Mineral 'Resources

Chhattisgarh is the sole producer of tin concentrates and is one of the leading producers of coal, dolomite, bauxite and iron ore. The State accounts for about 36% tin ore, 18% iron ore (hematite), 17% coal and 11% dolomite resources of the country. Important mineral occurrences of the State are **bauxite** in Bastar, Bilaspur, Dantewada, Jashpur, Kanker, Kawardha (Kabirdham), Korba, Raigarh & Surguja districts; **china clay** in Durg & Rajnandgaon districts; **coal** in Korba, Korba, Raigarh & Surguja districts; **dolomite** in Bastar, Bilaspur, Durg, Janjgir-Champa, Raigarh & Raipur districts; and **iron ore (hematite)** in Bastar district, Bailadila deposit in Dantewada district, Chhote Dongar deposit in Kanker district, Rowghat, Chargaon, Metabodeli & Hahaladdi deposits in Rajnandgaon district, Boria Tibbu deposits in Dalli-Rajhara area, Durg district. Bailadila-Rowghat hill ranges in the State are considered to be one of the biggest iron ore

fields in India. **Limestone** occurs in Bastar, Bilaspur, Durg, Janjgir-Champa, Kawardha (Kabirdham), Raigarh, Raipur & Rajnandgaon districts; **quartzite** in Durg, Raipur, Rajnandgaon & Raigarh districts; and **talc/soapstone/steatite** in Durg & Kanker districts.

Other minerals found in the State are **corundum** in Dantewada district; **diamond** and other gemstones in Raipur, Mahasamund and Dhamtari districts; **fire clay** in Bilaspur, Raigarh and Rajnandgaon districts; **fluorite** in Rajnandgaon district; **garnet & marble** in Bastar district; **emerald** and **gold** in Raipur district; **granite** in Bastar, Kanker & Raipur districts; **quartz/silica sand** in Durg, Jashpur, Raigarh, Raipur & Rajnandgaon districts; and **tin** in Bastar & Dantewada districts (Table - 1). The reserves of coal are given in Table - 2.

### Exploration & Development

The details of exploration activities conducted by GSI & various agencies during 2012-13 are furnished in Table - 3.

**Table – 2 : Reserves/Resources of Coal as on 1.4.2013 : Chhattisgarh**

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
<b>Total</b>	<b>14779.18</b>	<b>34106.61</b>	<b>3283.25</b>	<b>52169.04</b>
Sohagpur	94.30	10.08	-	104.38
Sonhat	199.49	2463.86	1.89	2665.24
Jhilimili	228.20	38.90	-	267.10
Chirimiri	320.33	10.83	31.00	362.16
Bisrampur	1010.90	603.80	-	1614.70
Bisrampur (East)	-	164.82	-	164.82
Lakhanpur	455.88	3.35	-	459.23
Panchbahini	-	11.00	-	11.00
Hasdeo-Arand	1599.72	3665.40	263.70	5528.82
Sendurgarh	152.89	126.32	-	279.21
Korba	5651.14	5936.50	168.02	11755.66
Mand-Raigarh	5015.90	18484.07	2608.96	26108.93
Tatapani-Ramkola	50.43	2587.68	209.68	2847.79

*Source: Coal Directory of India, 2012-13.*

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

Mineral	Unit	Reserves						Remaining resources						Total resources (A+B)		
		Proved		Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance		Total (B)	
		STD 111	STD121	STD122	STD221			STD222	STD334				STD334			
Bauxite	'000 tonnes	21246	48435	4818	74499	3992	4069	875	33764	11792	23241	18747	96480	170979		
China Clay	'000 tonnes	834	-	344	1178	480	765	1076	-	-	11512	-	13833	15009		
Corundum	tonne	-	310	288	598	-	-	-	-	-	288	-	288	885		
Diamond	carat	-	-	-	-	-	-	-	-	-	1304000	-	1304000	1304000		
Dolomite	'000 tonnes	41628	12984	6225	60836	19289	50384	24355	150795	24837	514235	1950	785845	846682		
Fireclay	'000 tonnes	-	23	12	35	-	27	-	7180	3400	10336	-	20943	20978		
Fluorite	tonne	-	-	-	-	65889	153132	9288	185485	5573	126088	-	545455	545455		
Garnet	tonne	-	-	-	-	-	-	-	-	-	28800	-	28800	28800		
Gold																
Ore (primary)	tonne	-	-	-	-	-	-	-	-	600000	4241033	-	4841033	4841033		
Metal (primary)	tonne	-	-	-	-	-	-	-	-	1.8	3.71	-	5.51	5.51		
Granite (Dim. stone)	'000 cu m	-	-	-	-	-	-	-	-	-	50057	-	50057	50057		
Iron ore (Hematite)	'000 tonnes	636460	-	263650	900110	114382	5080	15610	107625	527563	872739	748715	2391714	3291824		
Limestone	'000 tonnes	856930	10962	30004	897896	46468	742220	80465	1331984	480812	5379600	-	8061549	8959445		
Marble	'000 tonnes	-	-	-	-	-	-	-	-	-	83000	-	83000	83000		
Quartz-silica sand	'000 tonnes	141	-	46	187	385	-	620	56	-	191	7672	8924	9111		
Quartzite	'000 tonnes	1404	-	1267	2671	3086	3926	2195	-	-	14706	-	23913	26584		
Talc/soapstone steatite	'000 tonnes	22	-	8	30	-	-	-	-	70	8	-	78	108		
Tin																
Ore	tonne	4404	1015	1713	7132	-	1690	-	168622	559914	29063345	-	29793571	29800703		
Metal	tonne	925.75	189.76	16.92	1132.43	-	152.11	-	894.91	209.43	13097.75	-	14354.20	15486.63		

Figures rounded off.

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**Table – 3: Details of Exploration Activities in Chhattisgarh, 2012-13**

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
<b>GSI Coal Raigarh</b>	Teram block	1:10,000	4.0	11	5871.75	-	Regional exploration under G-2 stage was continued in Mand – Raigarh coalfield to establish the continuity of the regional Barakar coal seams intersected in already explored adjacent Kurumkela Block and to evaluate additional coal resources in the area. About 999.36 m of GP logging was completed. Nine regional coal seams /zones and few local coal seams ranging in thickness from less than a metre to 13.00 m (cumulative) were intersected within depth range from 162.23 m to 585.3 m. Coal Seam/Zone V (1.77 m to 11.32 m), VI (8.44 m to 13.00 m) & XI (3.41 m to 5.19 m) are important considering their thickness and regional persistence. The regional continuity for coal seams was established for five km along strike and 2.5 km along dip direction. Exploration was completed in December, 2012.
- do -	Samarsingha block	1:10,000	4.0	6	2788.75	-	Regional exploration under G-2 stage in Mand – Raigarh Coalfield was continued in order to establish the continuity of the regional Barakar coal seams which has already been established in the Nawagaon Block in the north and Sithra-Kurekela area in the west. The prime objective of this investigation was to assess coal resource potentiality and to carry out appraisal of CBM content About 1768.25 m of GP logging was completed. Twelve regional Barakar coal seams /zones and few local coal seams ranging in thickness from less than a meter to 11.10 m (cumulative) were intersected within depth range from 16.30 m to 738.06 m. Coal Seam / Zone- I (4.70 m to 6.26 m), IV (3.26 m to 11.10 m), VI (1.01 m to 4.16 m) are important for their thickness and regional persistence. During the period, about 5 km strike extension and 2 km dip extension have been proved. The work is in progress.

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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		
<b>GSI</b>							
<b>Coal</b>							
Raigarh	Amlidhonda block	1:10,000	4.0	7	2673.30	-	Regional exploration for coal was carried out in Mand – Raigarh Coalfield to establish the continuity of the regional Barakar coal seams intersected in adjacent explored Kesarchuan- Lamdand block towards east and Gare area towards north. The prime objective of this investigation is to evaluate additional coal resource in the area and to carry out appraisal of CBM content. About 1902.01 m of GP logging was completed. Seven regional coal seams/zones and few local coal seams varying in thickness from less than a meter to 18.87 m (cumulative thickness) were intersected between 118.00 m and 473.40 m depths. Coal seam/zone X (cumulative thickness 3.21 m to 5.25 m), IX (cumulative thickness 1.85 m to 5.65 m) and combined coal seam zone VI and VII ( cumulative thickness 10.63 m to 18.87 m) are important for their thickness and regional persistence. During the period, about 2km strike extension and 2.5 km dip extension have been proved. The work is in progress
- do - Tatapani - Ramkola field Surguja	Vijaynagar Giddhi block	1: 10,000	3.00	7	3151.80	-	Regional exploration for coal was continued under G-2 stage in Tatapani – Ramkola Coalfield, in order to (a) establish the structural disposition of the Lower Gondwana sequences; (b) establish the continuity of Barakar coal seams beneath the cover of Barren Measures and Raniganj Formation; (c) appraise the resource potentiality of Barakar coal seams and (d) generate CBM baseline data. About 990.65 m of GP logging was completed. The boreholes intersected Barren Measures and Barakar Formation. Thirteen regional Barakar coal seams/ zones ranging in thickness from less than a meter to 18.94 m were intersected in the depth range from 102.05 m to 555.32 m. Seam nos/zones III (cumulative thickness 5.00 m to 18.94 m), IV (maximum cumulative thickness 9.04 m) are important for their thickness and regional persistence. Besides these, few local coal seams were also intersected in Barakar Formation, with thickness varying from less than a meter to 3.81 m, between depths 19.35 m and 508.65 m. The coal contents in Barakar Formation increase from eastern to western part of this block. The continuity of coal seams in Barakar Formation has been established over a strike length of about 6 km and 1.5 km along down dip direction. Quality-wise, seams are mostly of power grade with minor superior grade coal. The work is in progress.

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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		
<b>GSI</b>							
<b>Diamond</b>	Raipur	-	-	-	-	190	Reconnaissance stage investigation (G-4) was taken up to search for kimberlite clan rocks, to locate kimberlite clan rocks in the granitic basement along the high permeable zones characterised by mafic dykes. Reconnaissance survey of 700 sq km was carried out around Dhamtari area. Stream sediment samples, petrological samples, PCS samples were collected for further studies. Regional reconnaissance was conducted in the priority zone within the mafic dyke swarms. The stream sediment samples were processed through HMS and binocular studies and the heavy minerals were separated. The PCS samples were submitted for chemical analysis and further characterisation. A total of 100 grains of garnet, ilmenite, spinel, pyroxenes were analysed at PPOD laboratory, Bengaluru. The garnet grains were identified as almandine garnet. The investigation will be continued in F.S.2013-14.
Dhamtari Kanker & Durg	Kimberlite field						
- do -	Raipur -	-	-	-	-	161	Reconnaissance stage investigation (G-4) was carried out to search for kimberlite clan rocks in the granitic basement along the high permeable zones characterised by mafic dykes. An area of 700 sq km was taken up for reconnaissance mapping and stream sediment survey. PGRS studies of IRS LISS III data for 700 sq km was carried out. Stream sediment sample were collected from the area and processed through the heavy mineral separation procedure (panning, jigging and bromoform separation) and the heavy minerals were subjected to magnetic separation followed by studies under binocular microscope. The heavy minerals identified are garnet, ilmenite and spinel. The other minerals identified were quartz, feldspar, limonite, tourmaline etc. A total of 24 nos. of PS were collected for thin section studies. The contact between the Chhattisgarh sediments and the crystallines was traced & zones of intersecting lineaments were identified
Dhamtari & Kanker	Kimberlite field						

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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		
<b>GSI Diamond Dhamtari &amp; Kanker (Contd.)</b>		-	-	-	-	161	for ground checks. A total of 23 nos. PCS samples were collected and 20 nos. PCS samples were submitted for whole rock and trace element analysis. Fifty grains of garnet, spinel, ilmenite and gem ruby including one thin section was studied by EPMA. The ruby grains are of high chrome bearing ( $\text{Cr}_2\text{O}_3$ upto 8.0%) and is of gem quality. One grain of garnet has analysed 50.10% pyrope with MgO upto 12.94% and is typically a G5 garnet. This garnet may be interesting for search for kimberlite clan rock. One thin section was also studied for mineral phases. The rock contains plagioclase (albite), clino pyroxene (chrome diopside with 0.38% $\text{Cr}_2\text{O}_3$ ), amphiboles, ilmenite and spinels indicating a deep source. The investigation will be continued in F.S.2013-14.
- do -	Raigarh- Bilaspur- Surguja belt	-	-	-	-	220	Reconnaissance stage investigation (G-4) was carried out to search for PGE mineralisation in Raigarh-Bilaspur-Surguja belt. The work components include Large Scale Mapping supplemented by a quantum of 50 cu m of Pitting/Trenching and collection of 30 nos. of SSS, 50 nos. of BRS and 50 nos. of PTS. In addition to these, collection of 30 nos. of PS, 20 nos. of PCS and 40 nos. of samples for PGE analysis were also accomplished. The area exposes Precambrian rocks comprising mica schist, quartzite, talc-chlorite schist, magnetite-quartz schist and actinolite-chlorite schist forming a parts of Raigarh-Bilaspur-Surguja metamorphic belt. These rocks are intruded by basic and ultrabasic rocks. The available PCS data indicates that the MgO content in ultramafics rocks vary between 18.5–37.26%. In AFM diagram, the granites depict Calc-alkaline trend where as the mafic and ultramafic shows Tholeite trend. In R1-R2 plot by Batchelor and Bowden, (1985) granitoids indicates the syn-collisional signature. The partly received analytical results of 105 samples indicates Au content 50 ppb-100 ppb, Ni :4 ppm to 0.22%, Co:<2ppm-385 ppm,and Cr:5 ppm – 0.32% respectively. The investigation has been completed.

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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		
<b>GSI</b>							
<b>Platinum</b>							
group of element Raipur	Chandranagar	1:2,000	1.8	-	-	200	Reconnaissance stage investigation (G-4) was carried out to delineate zones of PGE and nickel mineralisation within Sonakhan-Granite Greenstone belt. Detailed mapping supplemented by 50 cu. meters of pitting/trenching and collection of PTS, BRS, SSS and SS was carried out. The study area covers a part of Sonakhan Granite greenstone belt. The lithounits exposed in Chandranagar block are ultrabasics, gabbro and acid volcanics. Two ultrabasic bodies have been identified in Chandranagar block, namely, Chandranagar east and Chandranagar west. The Lohardadar block is mainly occupied by ultrabasic rock; gabbro, acid volcanic and Chhattisgarh cover sediments. The Chhattisgarh cover sediments cover the ultrabasic rock. The analytical results so far received indicated Cr value up to 435 ppm and Au value less than 50 ppb. The ore microscopic and SEM-EDX study revealed the presence of pentlandite, millerite, chalcopyrite, pyrite, ilmenite and magnetite in peridotite. The investigation has been completed.
	Lohardadar block	1:2,000	1.2				
<b>Iron Ore</b>							
Kabirdham	Bhalapuri,	1:25,000	19.09	-	-		Prospecting stage (G-3) investigation was carried out for assessment of iron ore in this block. This is a sponsored project of M/s Chhattisgarh Mineral Development Corporation for two years duration. The quantum of field achievement includes Large Scale Mapping, Detail Mapping supplemented by pitting/trenching and drilling. The iron ore band occurs discontinuously along NNE-SSW for a strike continuity of approximately 8 km. Iron ore is exposed in the dip slope of the hills in the E to SE direction at different levels. A new iron ore band has been identified in the area, which is exposed over a strike length of 1.2 to 1.5 km with thickness varying from 2 m to 6 m. The extension of iron ore band at CMDC deposit no.30 was also traced further in the NNE direction for a strike length of approximately 700-800 m. The investigation will be continued in F.S. 2013-14.
	Eklama- Chelikama- block	1:2,000	3.20				

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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		
<b>DGM</b>							
<b>Bauxite</b>							
Kabirdham	Darai	1:50,000 1:4,000	95.0 2.16	102	1077.0	475	Bauxite occurs as weathered product of Deccan trap basalt, which is overlain by phyllite and quartzite. Bauxite also occurs as irregular & discontinuous lenses & pockets. It is generally pisolitic, brown, hard & compact. Thickness of bauxite was found to be about 1.5 m - 2 m. About 2,50,000 tonnes of bauxite resources were estimated during the year.
Surguja	Dandkeshra	1:50,000 1:4,000	55.0 1.28	98	1096.0	1577	Bauxite of this area is associated with laterite which was found over Deccan trap basalt. Bauxite deposit occur as pockets & irregular lenses of 100-200 m length and a few cm to 3 m in thickness. About 5 lakh tonnes of metal grade bauxite resources were estimated during the year.
<b>Coal</b>							
Korba	Gotan Birjupali	1:50,000 1:4,000	340.0 1.76	-	-	58	Area is mostly occupied by Chhota Nagpur gneissic complex of Archean & Gondawana rocks. Barakars are main litho-formation consisting of sandstone, shale & coal. Exposures of coal were noticed around Villages Dhodhakesra, Patkura, Gotan & Birjupali Mareya. Coal resources were not estimated. Work under progress.
Surguja	Saiduare	1:50,000	105.0	1	862.25	15	The objective of exploration was to prove the workability of the block. Area is mostly occupied by Chhota Nagpur gneissic complex of Archean & Gondwana rocks. Barakars are main litho-formation consisting of sandstone, shale & coal. About 126 lakh tonnes of coal resources were estimated.
- do -	Saila block Saila Pali area	-	-	4	832.45	58	Coal seams of the area occur in Barakar Formation of Gondawana Supergroup. Coal occurs as cyclic succession of coal, shaly coal, carb shale, grey shale & sandstone. Altogether 14 coal seams were encountered. During the year coal resources were not estimated.

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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		
<b>Dolomite</b>							
Surguja	Pachri- Bhalwahi	1:50,000 1:4,000	100.0 2.20	27	819.70	670	Objective of exploration was to search locations of limestone. Area is occupied by dolomite of Chandi formation of Hirri sub basin of Chhattisgarh supergroup. The dolomite forms inliers with pink stromatolitic limestone with shaly intercalation. Dolomite is grey & sub horizontally bedded. Deposit of dolomite demarcated around Village pachri-Bhalwahi. About 300 lakh tonnes of dolomite resources were estimated.
<b>Granite</b>							
Bastar	Charana, Kanker & Keshkal	1:50,000	280.0	-	-	79	Objective of exploration was to study the suitability of granite & other rocks for cutting & polishing purpose. Area is mostly covered with Dongargarh granite with numerous acid & basic intrusives. Occurrences of black granite (dolerite) have been noticed in various localities as hillocks with a dimension of 500 m x 150 m. Thickness was noticed around 10 m. These rocks seem to be suitable for cutting/polishing purpose. About 28 lakh m <sup>3</sup> black granite block (dolerite) resources were estimated which is suitable for cutting & polishing.
<b>-do-</b>							
Dantewada	Chingavaram - Bhusaras	1:50,000	278.0	-	-	13	Objective of exploration was to study the suitability of granite & other rocks for cutting & polishing purpose. Area is mostly covered with granite & granitic gneisses of Bengal Group of rocks with numerous acid & basic dykes. About 4 lakh m black granite (dolerite) resources were estimated which is suitable for cutting/polishing.
<b>-do-</b>							
Kondagaon/ Kanker	Keshkal, Jagar Pali	1:50,000	165.0	-	-	43	Objective of exploration was to study the suitability of granite & other rocks for cutting & polishing purpose. Area is mostly covered with Dongargarh granite with numerous acid & basic intrusives. Occurrences Black granite (dolerite) have been noticed in various localities.
<b>Iron ore</b>							
Kondagaon	Pavaras- Kachora	1:50,000	39.0	-	-	4	Area is occupied by litho-units of Bengal Group and Bailadila Group with acid & basic intrusives. Outcrop of BHQ & BMQ were noticed which spread over an area of 2 km x 0.2 km with a thickness of 5 m. About 3 lakh tonnes of iron ore resources (31% - 38% Fe) were estimated.

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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		
<b>Limestone</b>							
Bastar	Bastar area	1:50,000	50.0	-	-	15	The main object of exploration was to assess the quality of limestone in the area between already prospected blocks in Bastar region. Limestone occurs as small mounds & is horizontally bedded with local warping. Outcrops were observed in an area 0.90 x 0.30 km with a thickness upto 10 m. About 5 lakh tonnes of cement grade limestone resources were estimated.
<b>-do-</b>							
Raipur	Kesla area	1:50,000 1:4,000	60.0 1.76	24	805.90	874	Object of exploration was to identify blocks suitable for cement grade limestone. About 54.88 million tonnes of limestone resources were estimated. Main litho-units in this area are shale, limestone & laterite. Limestone is mostly horizontally bedded. Depth of limestone is confined upto 34 m. Limestone of this area is grey to pink, hard, compact, massive & stromatolitic.
<b>-do-</b>							
	Tekapar - Kalkasa	1:50,000 1:4,000	90.0 2.0	9	249.0	265	Objective of exploration was to identify blocks suitable for cement grade limestone. The explored area is mostly occupied by residual soil with sporadic outcrops of purple, grey stromatolitic limestone. Occurrences of purple & grey shales were also noticed in boreholes. About 165 lakh tonnes of limestone resources were estimated.
<b>Limestone</b>							
Sukma	Birsatpal Kachora	1:50,000 1:4,000	285.0 2.44	-	-	85	Objective of exploration was to search new locations of limestone. Area is occupied by arenaceous & calcareous rocks of Sabri group. The upper calcareous formation of this group is represented by grey to dark grey laminated limestone. Occurrence of cement grade limestone were demarkated around Village Birsatpal. About 2 lakh tonnes limestone resources were estimated.
<b>Chhattisgarh Mineral Dev. Corp. Ltd. Iron ore</b>							
Kabirdham	Eklama, Chelikama, Bhalapur & Kesda etc.	1:1,250 1:2,000	19.09	28	1449.80	265	Resources yet to be estimated.

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**Production**

The value of mineral production in Chhattisgarh at ₹18,695 crore in 2012-13, increased by 5% as compared to that in the previous year. The state is ranked sixth in the country and accounted for about 7% of the total value of mineral production. The important minerals produced in the state in 2012-13 were coal, bauxite, iron ore, tin (conc.), dolomite, limestone and quartzite which together accounted for about 98% of the entire value of mineral production in the State.

Chhattisgarh was the sole producer of tin concentrate in the country. The State was the leading producer of coal accounting for 21% and dolomite 28% of the total production of respective minerals in the country. It was also second largest producer of iron ore and third leading producer of quartzite with contribution of 21% and 11% to

the national output of respective minerals. The state shared 7% of the total output of limestone during 2012-13. During the year under review, production of quartz increased manifolds and that of quartzite 28%, dolomite 15% and coal 3% whereas it declined for tin concentrates and limestone by 2% each, iron ore 8%, bauxite 24% and fireclay 25% as compared to the previous year. (Table-4).

The production value of minor minerals was estimated at ₹335 crore for the year 2012-13.

The number of reporting mines in Chhattisgarh was 192 each in 2011-12 and 2012-13.

The index of mineral production in Chhattisgarh (base 2004-05=100) was 156.5 in 2012-13 as compared to 155.5 in the previous year.

**Table – 4 : Mineral Production in Chhattisgarh, 2010-11 to 2012-13  
(Excluding Atomic Minerals)**

(Value in ₹ '000)

Mineral	Unit	2010-11			2011-12			2012-13 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
<b>All Minerals</b>		<b>167</b>		<b>136924511</b>	<b>192</b>		<b>178181093</b>	<b>192</b>		<b>186953384</b>
Coal	'000t	62	113824	58256200	61	113958	70740300	60	117830	90750700
Bauxite	t	13	2109949	777273	12	2391837	1444642	12	1818168	1047213
Iron Ore	'000t	10	29320	71712050	11	30457	98741549	11	27941	87674159
Tin Conc.	kg	6	60643	27799	6	48765	26062	6	47776	25920
Clay (others)	t	-	-	-	-	720	86	-	-	-
Dolomite	t	33	1592838	363551	38	1624834	363761	39	1872796	507384
Fireclay	t	-	-	-	1	3423	856	1	2570	643
Graphite (run of mine)	t	-	-	-	1	-	-	-	-	-
Kaolin	t	-	-	-	1	-	-	-	-	-
Limestone	'000t	40	19241	2997759	51	20465	3477724	52	20161	3546988
Quartz	t	1	655	92	3	731	144	4	12100	4826
Quartzite	t	1	60	29	4	32626	36368	6	41861	45913
Talc/soapstone/steatite	t	1	5	2	3	316	95	1	440	132
Minor Minerals@		-	-	2789756	-	-	3349506	-	-	3349506

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

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

## STATE REVIEWS

**Mineral-based Industry**

The important large & medium-scale mineral-based industries in the organised sector in the State are furnished in Table - 5.

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

Industry/plant	Capacity ('000 tpy)
<b>Aluminium</b>	
Bharat Aluminium Co. Ltd, Korba	200 (Alumina) 350* (Aluminium)
*(Korba plant - 1 capacity of 100,000 tonnes per year is non-operational)	
<b>Cement</b>	
ACC Ltd., Jamul, Dist. Durg	1580
Ambuja Cements Ltd, Rawan, Dist. Raipur	1146
CCI Ltd, Akaltara, Dist. Janjgir-Champa	400
CCI Ltd, Mandhar, Dist. Raipur	380
Century Cement, Baikunth, Dist. Raipur	2100
Grasim Cement, Rawan, Dist. Raipur	2500
Lafarge India Pvt. Ltd, Arasmeta, Dist. Janjgir-Champa	2240
Lafarge India Pvt. Ltd, Sonadih, Dist. Raipur	400
Ultra Tech Cement Ltd, Hirmi, Dist. Raipur	2750
<b>Fertilizer</b>	
BEC Fertilizers, Sirgitti, Dist. Bilaspur	66 (SSP)
Dharamsi Morarji Chemical Co. Ltd, Kumhari, Dist. Durg	183 (SSP & H <sub>2</sub> SO <sub>4</sub> )
Jairam Phosphate Ltd, Farahad, Dist. Rajnandgaon	66 (SSP) 49.5 (H <sub>2</sub> SO <sub>4</sub> )
<b>Iron &amp; Steel</b>	
Bhilai Steel Plant, Bhilai	6334 (Sinters) 4700 (Pig iron) 3153 (Saleable steel) 3925 (crude/liquid steel) 30 (Refractory bricks) 45 (H <sub>2</sub> SO <sub>4</sub> ) 53.2 (Amm. sulphate)
Jindal Steel & Power Ltd, Raigarh	1600 (Hot metal) 1370 (Sponge iron) 36 (Ferro chrome) 3000 (Crude/liquid steel)
Jayaswal NECO Industries Ltd, Siltara, Dist. Raipur	750 (Pig iron) 400 (Sponge iron) 800 (Sinter) 400 (Steel)

(Contd.)

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Sarda Energy & Minerals Ltd, (formerly Raipur Alloys & Steel Ltd) Siltara, Dist. Raipur	360 (Sponge iron) 240 (Finished steel) 60 MVA (Ferro Alloys)
Shri Bajrang Power & Ispat Ltd, Urla, Dist. Raipur	210 (Sponge iron) 130 (Steel)
<b>Sponge Iron</b>	
A.P.I. Ispat & Power Tech. Pvt. Ltd, Siltara Billets, Raipur	105
Alliance Integrated Metallics Ltd, Bemta, Dist. Raipur	500
Anjani Steel Ltd, Ujalpur, Dist. Raigarh	36
Arti Sponge & Power Ltd, Siltara, Dist. Raipur	45
Ambika Ispat (I) Pvt Ltd, Tarainal, Dist. Raigarh	30
Baldev Alloys Pvt. Ltd, Siltara, Raipur	30
Bhagavati Power & Steel Pvt Ltd, Siltara, Dist. Raipur	60
B.S. Sponge Pvt Ltd, Taraimal, Raigarh	30
Devi Iron & Power Pvt Ltd, Tandira, Dist. Raipur	30
Drolia Electro Steel Pvt Ltd, Siltara, Raipur	66
Euro Pratik Ispat Pvt Ltd, Charoda, Dist. Raipur	30
Gravity Treksim Pvt Ltd, Siltara, Dist. Raipur	30
Godavari Ispat & Power Ltd, Siltara, Dist. Raipur	495
Gopal Sponge & Power Pvt Ltd, Siltara, Dist. Raipur	30
Gitanjali Ispat & Power Pvt Ltd, Sirgitti, Dist. Bilaspur	30
GR Sponge & Power Ltd, Siltara, Dist. Raipur	37
Hare Krishna Sponge Pvt Ltd, Siltara, Dist. Raipur	30
HEG Ltd, Borai, Dist. Durg	120 (Sponge iron) 100 (Bxillets)
Hi-Tech Power & Steel Ltd, Parsada, Dist. Raipur	30
Ind Synergy Ltd, Kotmar, Dist. Raigarh	300
Indian Ispat & Power, Siltara, Dist. Raipur	30
Kalindi Ispat Pvt. Ltd, Belpan, Dist. Bilaspur	60

(Contd.)

## STATE REVIEWS

Table - 5 (Contd.)

Industry/plant	Capacity ('000 tpy)
Khetan Sponge & Infrastructure Pvt. Ltd, Sarora, Dist. Raipur	30
Maa Kali Alloys (Ind.) Pvt Ltd, Pali, Dist. Raigarh	30
Mangal Sponge & Steel Pvt Ltd, Bilha, Bilaspur	30
Mangala Ispat Pvt Ltd, Natvarpur, Dist. Raigarh	30
Millennium High-Tech Industries Ltd, Parsada, Dist. Raipur	30
MSP Steel & Power Ltd, Raigarh	90
Monnet Ispat Ltd, Hasaud, Raipur	1000
NR Sponge Pvt. Ltd, Raipur	60
Nalwa Sponge Iron Ltd, Taraimal, Raigarh	198
Nakoda Ispat Ltd, Siltara, Raipur	66
Navdurga Fuse Pvt Ltd, Raigarh	60
Nova Iron & Steel Ltd, Dagori, Bilaspur	150
Nutan Ispat & Power Ltd, Jaroda, Raipur	30
PD Industries Pvt Ltd, Siltara, Raipur	30
Prakash Industries Ltd, Hathenewra, Janjgir-Champa.	450
Shree Radhe Industries Ltd, Silpahari, Bilaspur	60
Raigarh Ispat & Power Ltd, Delari, Dist. Raigarh	30
Rameswaram Steel & Power Ltd, Gharghoda, Dist. Raigarh	30
Salasar Sponge & Power Pvt Ltd, Gerwani, Dist. Raigarh	30
Sree Nakoda Ispat Ltd, Siltara, Dist. Raipur	66
Topworth Steel Pvt Ltd, Rosmada, Dist. Durg	60
Shakambri Steel & Power Pvt Ltd, Raigarh	30
Shakun Sponge Iron Pvt Ltd, Shirgitti, Dist. Bilaspur	30
Shivalaya Ispat & Power Pvt Ltd, Guma, Dist. Raipur	30
Sidhi Vinayak Sponge Iron Pvt Ltd, Raigarh	30

(Contd.)

Table - 5 (Concl.)

Industry/plant	Capacity ('000 tpy)
S.K. Sarawagi & Co. Pvt Ltd, Siltara, Dist. Raipur	60
SKS Ispat & Power Ltd, Siltara, Dist. Raipur	270
Shivshakti Steel Pvt. Ltd, Chakradharpur, Dist. Raigarh	30
Shri Sita Ispat & Power Pvt. Ltd, Borjhara, Dist. Raipur	30
Shree Shyam Sponge & Power Ltd, Bachera, Dist. Raipur	30
Singhal Enterprises Pvt Ltd, Taraimal, Dist Raigarh	194
Sunil Sponge Pvt Ltd, Siltara, Dist. Raipur	30
Trimula Sponge Iron Pvt Ltd, Siltara, Raipur	30
Vandana Global Ltd, Siltara, Dist. Raipur	210
Vasvani Industries Ltd, Siltara, Dist. Raipur	30
Vidhyan Minerals India Pvt. Ltd, Bilaspur	30
<b>Ferro Alloys</b>	
Alok Ferro Alloys Ltd, Urla, Raipur	11
Chhattisgarh Electricity Co. Ltd, Siltara Dist. Raipur	36
Deepak Ferro Alloys Ltd, Urla, Dist. Raipur	5
Indsil Energy & Electro Chemical Ltd, Urla, Dist. Raipur	24
Hira Power & Steel Ltd, Urla, Dist. Raipur (Formerly Jain Carbides & Chemicals Ltd)	17
Monnet Ispat Ltd, Hasaud, Raipur	80
Nav-chrome Ltd, Urla, Dist. Raipur	50
Standard Chrome Ltd, Barmuda, Dist. Raigarh	15
Tirumala Balaji Alloys Pvt Ltd, Raigarh	21
<b>Refractory</b>	
Bharat Refractory Ltd, Bhilai, Dist. Durg (Bhilai Refractory Plant)	60
Vishva Vishal Engineering Ltd, Bhilai, Dist. Durg	8.2
<b>Silicon Carbide Crucible</b>	
M.P. Carbon (Pvt) Ltd, Raipur	NA