Indian Mineral Industry at a Glance

2017-18

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PREFACE

"Indian Mineral Industry at a Glance 2017-18" is the thirty-ninth edition in its series. The publication has been divided into eight sections viz., General, Mineral Production, Production of Metals & Alloys, Foreign Trade, Employment in Mines, Consumption of Minerals, Production of Mineral-based Products and Mining Machinery for ease of reference. The salient features of the data presented in each section are highlighted at the beginning of the section. The Indian Mineral Industry at a Glance is a handy pocketbook and a ready reckoner with important features of the Mining Sector. It is stated that some of the figures of GDP/GVA, consumption, foreign trade, employment, mineral-based product etc. pertaining to previous years are updated based on latest data.

The publication has been brought out by the Mining and Mineral Statistics Division of the Bureau. This Division, in addition to the extensive data available with it, has also utilised the data furnished by the Mineral Development and Regulation Division on Afforestation for Section-1 and Mining Machinery for Section-8. Similarly, Mineral Economics Division has furnished data on Mineral Resources and Mining Leases for Section-1 and on Consumption of Minerals for Section-6.

The foreign trade data on minerals, metals and selected mineral-based products is received from the Director General of Commercial Intelligence & Statistics (DGCI&S), Kolkata. The export data may include re-exports for the years

2008-09 to 2017-18. Country-wise break-up of some of the minerals and metals at 8-digit customs tariff / ITC (HS) code level is not available for a few items. The entire data of such minerals and metals have been grouped under country-item 'unspecified', which has been clubbed with 'others'. The data for the remaining countries in respect of tables of such minerals have limitations to that extent.

The Bureau is thankful to the Ministry of Petroleum and Natural Gas, New Delhi; Office of the Coal Controller, Kolkata; Joint Plant Committee, Kolkata; The Director General of Commercial Intelligence and Statistics, Kolkata; The Department of Industrial Policy & Promotion, Office of the Economic Advisor, Ministry of Commerce & Industry; Ministry of Chemical and Fertilizer and Central Statistical Office for providing the valuable information for this publication.

During the year 2014-15, 31 non-metallic minerals were notified as minor minerals by the Central Government w.e.f. 10.02.2015. The figures of such minerals for the year 2014-15 were available for the period from April 2014 to January 2015. Therefore, the figures of these minerals are of the period of 10 months (April 2014 to January 2015) and not comparable with those of previous years.

This publication is compiled as a reference material on mining and minerals related information to all those who are directly or indirectly associated with the Mineral Sector.

Nagpur
Dated: 10th July, 2020

Controller General
Indian Bureau of Mines

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Note: *(i) Figures for the previous year have been revised wherever necessary. Figures for the latest year are provisional and subject to revision*

(ii) In certain cases sum of individual items may not tally with the total of the table due to rounding off figures

Symbols and Abbreviations

(e)	Estimated
N.A.	Not Available
(R)	Revised
++	Negligible
-	Nil
(P)	Provisional
%	Percentage
kg	Kilogram
t	Tonne
’000 t	Thousand Tonne
m.t.	Million Tonne
m.cu.m.	Million Cubic Metres
R.O.M.	Run-of-mine
Av.	Average
m.m.	Millimetre
h.p.	Horsepower

Section – 1

General

Section-1

General

The value of mineral production in India covering metallic, non-metallic and minor minerals touched the level of Rs. 1,12,632 crore in 2017-18 from last 7 decades since 1947.

During 2017-18, production of principal minerals like coal, lignite, petroleum (crude), bauxite, chromite, copper ore & concentrates, iron ore, lead & zinc concentrates, manganese ore, silver, diamond, limestone, phosphorite, sillimanite etc. has gone up whereas it declined in case of gold, kyanite etc. as compared with that of 1947.

The index of mineral production (base 2011-12=100) has increased from 102.5 in 2016-17 to 104.9 in 2017-18 showing an increase of 2.3% as compared to the previous year.

In 2017-18, the value of production of metallic minerals was Rs. 50,440 crore or about 86% while that of non-metallic minerals it was Rs. 8,197 crore or 14% of the total value of MCDR minerals. Of the total value of MCDR minerals in India during 2017-18, Public Sector accounted for around 33% whereas Private Sector contributed 67% of the

total value. The total number of reporting mines in 2017-18 (excluding atomic, fuel and minor minerals) was 1,430. Of these, 638 mines belonged to metallic minerals and 792 to non-metallic minerals.

Growth during 1947 to 2017-18

The Mining Sector has shown significant growth since 1947. The value of mineral production (excluding atomic and fuel minerals) reached the level of Rs. 1,12,632 crore in 2017-18 from Rs. 13 crore in 1947. This is due to significant achievements made in the production of almost all metallic, non-metallic minerals and minor minerals. The value of metallic minerals rose from Rs. 7 crore and that of non-metallic minerals (including minor minerals) from Rs. 6 crore in 1947 to Rs. 50,440 crore and to Rs. 62,192 crore respectively in the year 2017-18.

The performance of some important minerals, such as, fuel, metallic and non-metallic minerals in the last 70 years is shown under Appendix-I at the end of this publication.

Fuel Minerals: The production of coal at 675 million tonne in 2017-18 was more than 22 times of its production at 31 million tonne 1947. The production of lignite at 46 million tonne was substantially higher than that of 63 thousand tonne in 1947. The production of petroleum (crude) at 36 million tonne during 2017-18 also rose manifold than that of the

252 thousand tonne in 1947. Natural gas (utilised), which had no production in 1947, recorded a production of 32,649 m.cu.m. in 2017-18.

Metallic Minerals: The production of all metallic minerals, except gold, registered a spectacular growth during the last 70 years. The production of iron ore increased from 2.5 million tonne in 1947 to 201 million tonne in 2017-18. The production of bauxite increased from 20 thousand tonne in 1947 to 22 million tonne in 2017-18, chromite from 35 thousand tonne to 3.4 million tonne, manganese ore from 465 thousand tonne to 2,589 thousand tonne, lead concentrates from one thousand tonne to 306 thousand tonne and zinc concentrates from no production in 1947 to 1,540 thousand tonne. The production of silver, mostly recovered as by-product was at 5,57,691 kg in 2017-18 as compared to 386 kg in 1947. However, the production of primary gold decreased from 5,341 kilogram in 1947 to 1,648 kilogram in 2017-18.

Non-Metallic Minerals: In the non-metallic minerals, the production of limestone at 339 million tonne in 2017-18 was about 100 times of the output in 1947. The production of apatite & phosphorite rose from one thousand tonne in 1947 to 1,534 thousand tonne during 2017-18, magnesite from 52 thousand tonne to 1,959 thousand tonne in the same period of 70 years.

Mineral Reserves and Resources				
Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Andalusite	'000 t	-	28201	28201
Antimony				
Ore	tonne	-	10588	10588
Metal	tonne	-	174	174
Apatite	'000 t	29	24016	24045
Asbestos	'000 t	24	22923	22947
Ball Clay	'000 t	49493	85250	134743
Barytes	'000 t	51347	35324	86671
Bauxite	'000 t	656422	3240442	3896864
Bentonite	'000 t	14585	568303	582888
Borax	tonne	-	74204	74204
Calcite	'000 t	3449	19555	23004
Chalk	'000 t	5064	1687	6751
Chromite	'000 t	102210	241806	344016
Cobalt (Ore)	m. tonne	-	45	45
Copper	'000 t			
Ore		207767	1303730	1511498
Metal		2734.62	9423.53	12158.15
Corundum	tonne	200	293497	293697
Diamond	th. carats	960	30876	31836

Mineral Reserves and Resources (Contd…)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Diaspore	’000 t	7882	2311	10193
Diatomite	’000 t	-	2885	2885
Dolomite	’000 t	677884	7737007	8414891
Dunite	’000 t	12768	175049	187818
Emerald	kg.	-	55869	55869
Felspar	’000 t	319841	313726	633567
Fireclay	’000 t	27037	695791	722828
Fluorite	’000 t	289	17893	18182
Fullers Earth	’000 t	3941	257438	261379
Garnet	’000 t	12784	43377	56161
Gold				
Ore (Primary)	’000 t	17228	484612	501840
Metal (Primary)	tonne	70.09	584.65	654.74
Ore (Placer)	’000 t	-	26121	26121
Metal (Placer)	tonne	-	5.86	5.86
Granite (Dimension stone)	’000 cu.m	263692	46056098	46319790
Graphite	’000 t	7961	186926	194887
Gypsum	’000 t	36621	1292892	1329513

Mineral Reserves and Resources (Contd…)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Iron Ore & Conc.	'000 t			
Hematite		5421751	17065214	22486965
Magnetite		52699	10736455	10789154
Kaolin/China Clay	'000 t	229469	2711777	2941247
Kyanite	'000 t	688	104294	104982
Laterite	'000 t	124733	581819	706552
Lead & Zinc	'000 t			
Ore		106116	643343	749459
Lead Metal		2482.34	10521.36	13003.7
Zinc Metal		9999.52	26363.24	36362.76
Lead & Zinc Metal		-	143.13	143.13
Limestone	m.t.	16336	186889	203225
Magnesite	'000 t	82276	311711	393987
Manganese Ore	'000 t	93475	402399	495874
Marble	'000 t	4551	1941341	1945892
Marl	'000 t	123856	11705	135561
Mica	tonne	114433	520869	635302

Mineral Reserves and Resources (Contd…)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Molybdenum				
Ore	tonne	-	19371698	19371698
Contained MOS_2	tonne	-	12668.37	12668.37
Nickel (Ore)	m.t.	-	189	189
Ochre	'000 t	36934	130859	167793
Perlite	'000 t	-	2406	2406
PGM (Metals)	Tonne of Metal Content	-	15.71	15.71
Phosphorite/Rock Phosphate	'000 t	45808	266871	312679
Potash	m.t.	-	22508	22508
Pyrites	'000 t	-	1674401	1674401
Pyrophyllite	'000 t	24933	34683	59616
Quartz/ Silica Sand	'000 t	647522	3260298	3907819
Quartzite	'000 t	83472	1575325	1658798
Rare Earth Elements	tonne	-	25493	25493
Ruby	kg.	-	5349	5349
Salt (Rock)	'000 t	-	16025	16025
Sapphire	kg	-	450	450
Shale	'000 t	15472	3781	19253

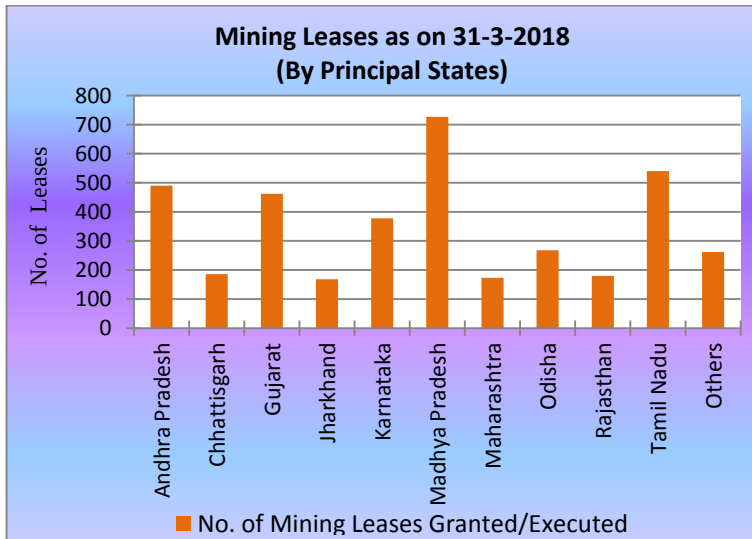
Mineral Reserves and Resources (Concld…)				
Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Sillimanite	'000 t	6502	63702	70204
Silver				
Ore	'000 t	150444	361511	511955
Metal	tonne	7171.94	22809.88	29981.82
Slate	'000 t	20286	2586	22872
Sulphur (Native)	'000 t	-	210	210
Talc/Steatite/Soap Stone	'000 t	106490	209434	315924
Tin				
Ore	'000 t	4	83721	83725
Metal	tonne	154.2	102259.16	102413.36
Titanium Minerals	'000 t	14421	399205	413626
Tungstun				
Ore	tonne	-	87387464	87387464
Contained WO_3	tonne	-	142094.35	142094.35
Vanadium				
Ore	tonne	-	24633855	24633855
Contained V_2O_5	tonne	-	64594.01	64594.01
Vermiculite	tonne	1632885	719582	2352467
Wollastonite	tonne	2241462	14227824	16469286
Zircon	tonne	1158290	2264913	3423203

Mining Leases as on 31-3-2018[@] (P) (By Principal Minerals)				
Mineral	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	**3834**	**100**	**326**	**100**
Limestone	2046	53	165	51
Iron ore	488	13	74	23
Bauxite	387	10	28	9
Manganese ore	291	8	15	4
Garnet	109	3	2	1
Others	513	13	42	13

Source: *Data as received from respective State Government Departments*
@ Excluding fuel, atomic & minor minerals
(P): Provisional

Mining Leases as on 31-3-2018[@](P) (By Principal States)				
State	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
All States	**3834**	**100**	**326**	**100**
Andhra Pradesh	490	13	28	9
Chhattisgarh	186	5	26	8
Gujarat	462	12	26	8
Jharkhand	168	4	24	7
Karnataka	378	10	40	12
Madhya Pradesh	727	19	38	12
Maharashtra	173	5	14	4
Odisha	268	7	61	19
Rajasthan	180	5	33	10
Tamil Nadu	540	14	10	3
Others	262	7	26	8

Source: *Data as received from respective State Government Departments*
@ Excluding fuel, atomic & minor minerals
(P): Provisional


Mining Leases as on 31-3-2018
(By Principal States)
No. of Leases
800
700
600
500
400
300
200
100
0
Andhra Pradesh
Chhattisgarh
Gujarat
Jharkhand
Karnataka
Madhya Pradesh
Maharashtra
Odisha
Rajasthan
Tamil Nadu
Others
No. of Mining Leases Granted/Executed

Concentration of Mining Leases as on 31-3-2018@ (P) (By Potential)					
Potential Bearing Districts	No. of Districts	No. of Mining Leases Granted/ Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	**199**	**3834**	**100**	**326**	**100**
Low	183	1965	51	203	62
Medium	10	830	22	84	26
High	6	1039	27	39	12

Source: *Data as received from respective State Government Departments*
@ Excluding fuel, atomic & minor minerals
High : > 100 mining leases in a district
Medium: 51 – 100 mining leases in a district
Low : 1– 50 mining leases in a district
(P): Provisional

Distribution of Mining Leases as on 31-3-2018[@] (P) (By Sectors)				
Sector	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	**3834**	**100**	**326**	**100**
Public	292	8	93	29
Private	3542	92	233	71

Distribution of Mining Leases as on 31-3-2018[@] (P) (By Lease Groups)					
Frequency Groups (No. of Leases)	Minerals Covered	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	**42**	**3834**	**100**	**326**	**100**
1 to 50	35	365	10	40	12
51 to 100	2	148	4	4	1
101 to 200	1	109	3	2	1
201 to 300	1	291	8	14	4
301 to 500	2	875	23	102	31
501 to 1000	-	-	-	-	-
Above 1000	1	2046	53	164	50

Source: *Data as received from respective State Government Departments*
@ Excluding fuel, atomic & minor minerals
(P): Provisional

Distribution of Mining Leases as on 31-3-2018@ (P) (By Area Groups)				
Frequency Groups (Area in ha.)	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	**3834**	**100**	**326**	**100**
1 to 10	1905	50	8	2
10 to 20	460	12	7	2
20 to 50	521	14	17	5
50 to 100	309	8	22	7
100 to 200	235	6	34	10
200 to 500	220	6	72	22
Above 500	184	5	166	51

Source: *Data as received from respective State Government Departments*
@ Excluding fuel, atomic & minor minerals
(P): Provisional

Number of Reporting Mines, 2008-09 to 2017-18 (By Mineral Groups)				
Year	Total*	Coal & Lignite	Metallic Minerals	Non-Metallic Minerals
2008-09	3150	574	719	1857
2009-10	3055	573	701	1781
2010-11	3118	573	719	1826
2011-12	3473	573	668	2232
2012-13	3978	575	708	2695
2013-14	3979	552	711	2716
2014-15$	2117	558	693	866
2015-16	2131	512	715	904
2016-17$ (P)	1616	NA	686	930
2017-18$ (P)	1430	NA	638	792

** Excluding Petroleum (crude), Natural Gas (ut.), Atomic and Minor Minerals*

***Reporting Mine**: A mine reporting production or reporting 'Nil' production during a year but engaged in developmental work such as, overburden removal; underground driving, winzing, sinking work; exploration by pitting, trenching or drilling as evident from the MCDR returns*

$: *Total number of mines excluding Coal & Lignite*

(P): Provisional

Number of Underground Mines, 2017-18[@] (By Principal Minerals)			
Mineral	Total	'A' Category	'B' Category
Total	**45**	**34**	**11**
Apatite	1	-	1
Chromite	6	6	-
Copper Ore	6	6	-
Gold	6	5	1
Lead & Zinc	9	8	1
Manganese Ore	16	9	7
Salt (Rock)	1	-	1

@ Excluding fuel, atomic & minor minerals
'A' Mechanised Mines: > 150 labours in all
> 75 labours in workings below ground
'B' Other than 'A'

Decennial Growth in the Value of Mineral Production, 1947 to 2017-18[@] (By Groups)

(Rs. Crore)

Year	Total	Fuels	Metallic Minerals	Non-Metallic and Minor Minerals
1947	58	45	7	6
1957	127	85	30	12
1967	370	260	47	63
1977	1479	1076	192	211
1987	12221	10539	731	951
1997-98	44193	36498	3284	4411
2007-08	159658	102119	29182	28357
2017-18[$] (P)	112632	N.A.	50440	62192

@ Excluding atomic minerals

$: Excludes the value of fuel minerals for 2017-18

Value of Mineral Production, 2008-09 to 2017-18[@]
(By Mineral Groups)

(Rs Crore)

Year	All Minerals	Fuels[$]	Metallic Minerals	Non-Metallic and Minor Minerals
2008-09	174133	114717	35076	24340
2009-10	192115	133658	31734	26723
2010-11	267032	168581	47639	50812
2011-12	284149	178922	47025	58202
2012-13	280006	182689	43164	54153
2013-14	277360	186467	42390	48503
2014-15[#]	194665	97450	37909	59306
2015-16 *$*	95188	N.A.	33622	61566
2016-17 (R)*$*	101783	N.A.	39760	62023
2017-18 (P)*$*	112632	N.A.	50440	62192

@ Excluding atomic minerals

#: Excludes the data of 31 minerals for February and March 2015, declared as Minor Minerals vide Notification dated 10th February 2015

$: Excludes the value of fuel minerals

Value of Mineral Production[@] (By Minerals)		(Rs Crore)
Minerals	2008-09	2017-18[$](P)
All Minerals	**174133**	**112632**
Coal	45537	--
Petroleum (crude)	53385	--
Natural Gas (utilised)	12107	--
Iron Ore	28544	34263
Lignite	3688	--
Limestone	2922	7441
Lead & Zinc Concentrates	1083	6123
Chromite	2263	3211
Silver	215	2118
Bauxite	470	1502
Manganese Ore	1774	1972
Copper Concentrates	409	774
Apatite &Phosphorite	310	377
Gold	315	476
Others	21109	54375

@ Excluding atomic minerals

$: Excludes the value of fuel minerals for the year

Value of Mineral Production[@] (By States)

(Rs Crore)

State	2008-09	2017-18[$](P)
India	**174133**	**112632**
Andhra Pradesh	16498	10465
Assam	8702	78
Bihar	134	4274
Chhattisgarh	13270	9818
Gujarat	12608	6452
Jharkhand	10811	2111
Karnataka	6696	9501
Kerala	954	2262
Madhya Pradesh	10850	3238
Maharashtra	6173	5401
Meghalaya	1318	286
Odisha	17728	20177
Rajasthan	6909	20887
Tamil Nadu	4070	1004
Telangana	*	8282
Uttar Pradesh	3634	5674
West Bengal	3432	146
Off-Shore	44297	--
Others	5718	2576

@ Excluding atomic minerals

$: Excludes the value of fuel minerals

** State came into existence w.e.f. 2nd June 2014*

Value of Mineral Production,[@] 2008-09 to 2017-18
(By Sectors)

(Rs Crore)

Year	Total	Public Sector	Private Sector
2008-09	174133	115240	58893
2009-10	192115	121794	70321
2010-11	267032	141000	126032
2011-12	284149	152452	131697
2012-13	280006	156695	123311
2013-14	277360	167886	109474
2014-15[#$]	194665	106446	86800
2015-16[$$]	95188	13357	81831
2016-17[$$]	101783	15119	86664
2017-18[$$] (P)	112632	19155	93476

@ Excluding atomic minerals

#: Excludes the data of 31 minerals for February and March 2015, declared as Minor Minerals vide Notification dated 10th February 2015

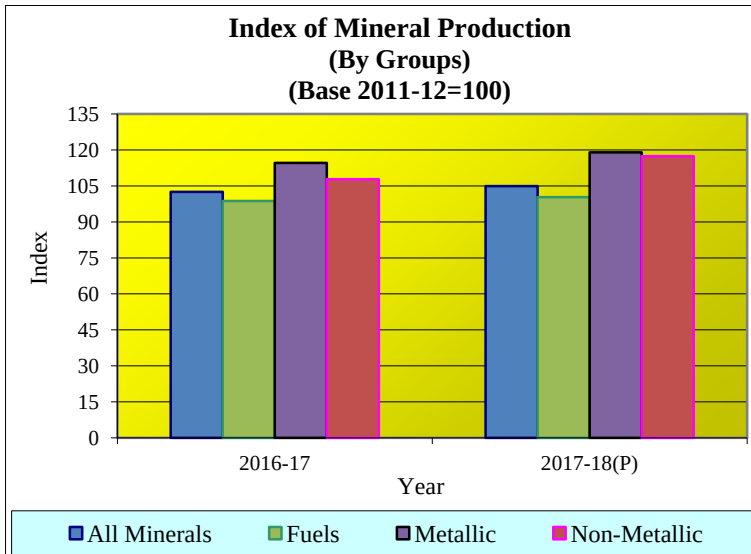
$: Excludes the value of Petroleum (crude) & Natural Gas (utilised)

$$: Excludes the value of fuel minerals

Value of Mineral Production & Number of Mines, 2017-18(P) (By Sectors)			
	Total *	Public Sector	Private Sector
No. of Mines	**1430**	146	1284
Total Value #	**58638**	19156	39482
Metallic #	**50440**	18237	32203
Non-metallic #	**8197**	918	7279

** Excluding fuel, atomic & minor minerals*

#: Value in Rs crore


Index of Mineral Production
(By Groups)
(Base 2011-12=100)
135
120
105
90
75
60
45
30
15
0
Index
2016-17
2017-18(P)
Year
All Minerals
Fuels
Metallic
Non-Metallic

Index of Mineral Production, 2008-09 to 2017-18
(By Mineral Groups)

(Base 1993-94 = 100)

	All Minerals	Fuels	Metallic Minerals	Non-Metallic Minerals
Year/Weight	1000.000	857.180	80.765	42.327
2008-09	175.96	162.80	302.26	215.48
2009-10	193.36	183.00	291.38	239.14
2010-11	204.95	194.98	298.57	256.87

(Base 2004-05 = 100)

Year/Weight	1000.000	812.328	103.983	27.414
2011-12	128.5	129.4	115.4	150.6
2012-13	125.5	127.7	98.1	158.4
2013-14	124.7	125.5	106.7	162.1
2014-15	126.5	129.1	92.1	175.4

(Base 2011-12 = 100)

2015-16	97.3	98.1	94.0	106.5
2016-17	102.5	98.7	114.6	107.8
2017-18 (P)	104.9	100.3	119.0	117.4

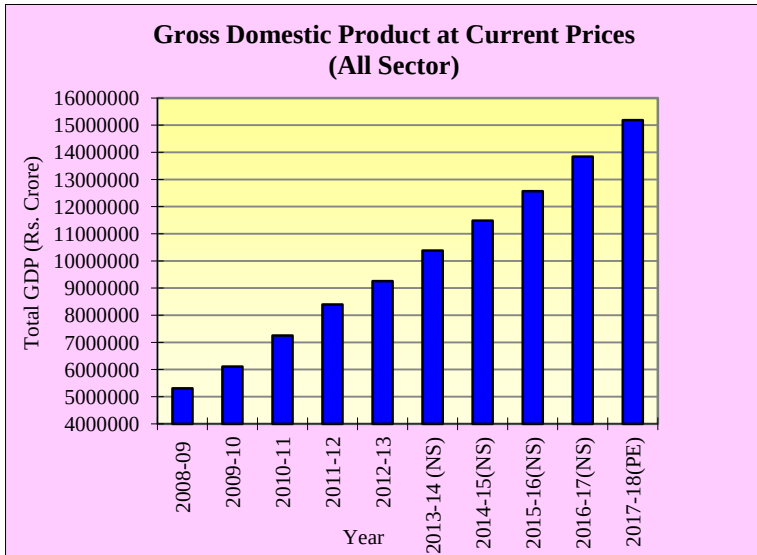
***Note**: (i) Weight of minor minerals production in the index of mineral is 19.728 for base year 1993-94 = 100 and it is 56.275 for base year 2004-05=100*

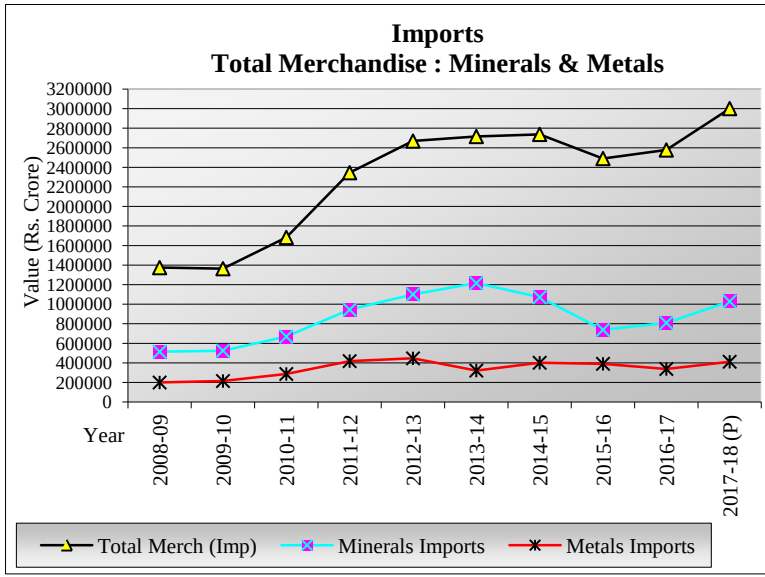
(ii) Minor Minerals are excluded from Item Basket for Base Year 2011-12

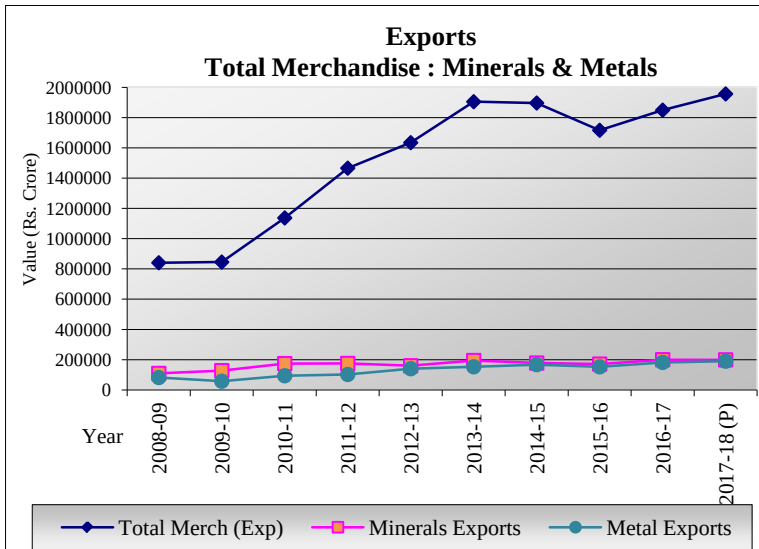
Wholesale Price Index, 2008-09 to 2017-18 (By Groups) (Base 2004-05 = 100)					
Year	All Commodities	Minerals	Metallic Minerals	Other Minerals	Mineral Oils
2008-09	126.02	186.52	266.15	144.19	141.84
2009-10	130.81	202.92	258.32	145.98	135.75
2010-11	143.32	253.28	373.78	153.37	157.47
2011-12	156.13	320.65	411.52	165.88	184.02
					(Base 2011-12=100)
2012-13	106.9	118.2	112.1	139.5	110.9
2013-14	112.5	114.4	105.2	146.8	121.6
2014-15	113.9	118.6	112.2	140.7	108.7
2015-16	109.7	105.6	91.7	154.1	73.9
2016-17	111.6	113.1	98.4	164.4	73.3
2017-18 (P)	114.9	122.5	109.1	169.3	82.5

Gross Domestic Product (GDP) at Current Prices (Rs Crore)			
Year	Total GDP	Mining & Quarrying	Percentage
2008-09	5303566	139828	2.6
2009-10	6108903	159304	2.6
2010-11	7248860	204866	2.8
2011-12	8391691	222716	2.7
2012-13	9252051	284771	3.1
Gross Value Added (GVA) at Current Prices (Rs Crore)			
Year	Total GVA	Mining & Quarrying	Percentage
2013-14 (NS)	10380813	295978	2.9
2014-15(NS)	11481794	314177	2.7
2015-16(NS)	12566646	301230	2.4
2016-17(NS)	13841591	332947	2.4
2017-18(PE)	15182317	374689	2.5

(NS): New series
(PE): Provisional estimates


Gross Domestic Product at Current Prices
(All Sector)
Total GDP (Rs. Crore)
16000000
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14 (NS)
2014-15(NS)
2015-16(NS)
2016-17(NS)
2017-18(PE)
Year


Imports
Total Merchandise : Minerals & Metals
Value (Rs. Crore)
3200000
3000000
2800000
2600000
2400000
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18 (P)
Total Merch (Imp)
Minerals Imports
Metals Imports


Exports
Total Merchandise : Minerals & Metals
Value (Rs. Crore)
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18 (P)
Total Merch (Exp)
Minerals Exports
Metal Exports

Exports Total Merchandise: Minerals & Metals (Rs Crore)					
Year	Total Merchandise	Minerals	% Share	Metals	% Share
2008-09	840755	109296	13	82239	10
2009-10	845534	127831	15	57975	7
2010-11	1136964	174370	15	94052	8
2011-12	1465959	175310	12	102500	7
2012-13	1634318	160101	10	140614	9
2013-14	1905011	194784	10	153156	8
2014-15	1896445	178019	9	167296	9
2015-16	1716384	170946	10	152913	9
2016-17	1849434	200131	11	182186	10
2017-18 (P)	1956515	199120	10	190294	10

Imports Total Merchandise: Minerals & Metals (Rs Crore)					
Year	Total Merchandise	Minerals	% Share	Metals	% Share
2008-09	1374436	514509	37	199489	15
2009-10	1363736	524830	38	214425	16
2010-11	1683467	669010	40	286835	17
2011-12	2345463	944430	40	418310	18
2012-13	2669162	1100800	41	446566	17
2013-14	2715434	1215827	45	321356	12
2014-15	2737087	1071733	39	401259	15
2015-16	2490305	738789	30	390372	16
2016-17	2577675	809445	31	337788	13
2017-18 (P)	3001033	1028501	34	411825[(U)]	14

[(U): Under Reference

Consumption of Explosives, 2017-18[@]
(By Principal Minerals)

(In tonne)

Mineral	Gun Powder	LOX	High Explosives
Total:	**5**	**175**	**108596**
Limestone	5	-	45161
Lead & Zinc Ore	-	-	35373
Iron Ore	-	175	19579
Manganese Ore	-	-	1119
Copper Ore	-	-	3410
Bauxite	-	-	2327
Gold	-	-	577
Chromite	-	-	370
Magnesite	-	-	344
Diamond	-	-	101
Phosphorite	-	-	101
Wollastonite	-	-	88
Others	-	-	46

@ *Excluding fuel, atomic and minor minerals*

Consumption of Explosives, 2017-18[@]
(By Principal Minerals)

(In thousands)

Mineral	Detonators (Nos.)		Fuses (Meters)	
	Ordinary*	Electric	Safety	Cordtex
Total	**2412**	**4911**	**816**	**13878**
Bauxite	103	34	195	1538
Chromite	17	36	6	156
Copper Ore	2	484	3	875
Gold	-	497	-	363
Iron Ore	361	120	25	2421
Lead & Zinc Ore	193	807	-	1228
Manganese Ore	35	1017	58	513
Apatite &Phosphorite	8	-	4	27
Diamond	-	-	++	12
Graphite	1	-	16	40
Kyanite	23	-	-	-
Limestone	1708	1856	450	6402
Magnesite	95	33	63	256
Wollastonite	25	27	-	74

@ Excluding fuel, atomic and minor minerals
** Includes other detonators*

Afforestation in Metalliferous Mines during 2017-18 (By Principal Minerals)						
Mineral	**Total Mines Covered**	**Area Covered (ha)**	**Trees**		**Survival**	
			Planted (Nos.)	**Survived (Nos.)**	**Percentage**	('000 trees) per ha
Total	**616**	**1028**	**1860895**	**1448469**	**78**	1.41
Bauxite	72	90	248179	195436	79	2.20
Chromite	14	14	45045	38126	85	2.93
Copper	4	1	2400	1019	42	0.73
Gold	1	++	200	100	50	0.20
Iron ore	76	127	334483	260067	78	2.06
Iron &Mn	65	70	422443	314804	75	4.50
Lead & Zinc	13	103	56300	53440	95	0.52
Limestone	318	488	624204	486235	78	1.00
Manganese	28	24	103104	80736	78	3.51
Magnesite	5	97	720	530	74	0.01
Others	20	14	23817	17976	75	0.71

Section – 2

Mineral Production

Section-2

Mineral Production

Fuel Minerals: The steady rise in the production of coal continued during the decade under review and reached the level of 675 million tonne during 2017-18. The production of lignite declined in 2013-14 and 2015-15 and was at 46.3 million tonne during the decade ending 2017-18.The production of petroleum (crude) has had a declining trend since 2012-13 during the decade and was at 36 million tonne in 2017-18 a moderate increase from 34 million tonne in 2008-09. The output of natural gas (utilised), after attaining the highest level at 52,219 m.cu.m in 2010-11 gradually decline through the decade but managed to record an increase of 2% at 32,649 m.cu.m. in 2017-18 from that of the previous year.

Metallic Minerals: The production of bauxite at 28 million tonne in 2015-16 was the highest in the decade. It, however, had a fluctuating trend during the period and was at 22.3 million tonne in 2017-18. The production of chromite was highest at 4.3 million tonne in 2010-11 in the decade and with a decrease of 7% from that of the preceding year of production was at 3.5 million tonne in 2017-18. The output of copper ore and concentrates had a fluctuating trend during the decade and their respective production in 2017-18 was 3,679 thousand tonne and 142 thousand tones showing a decrease of about 4% and an increase of 5% respectively over the preceding year. During the decade ending 2017-18 the production of iron ore touched

the highest level of 219 million tonne in 2009-10. Subsequently, it showed a mixed trend and was at 201 million tonne in 2017-18 with a 3% increase over that of the preceding year. The production of manganese ore showed fluctuating trend during the decade and touched the highest level of 3.1 million tonne in 2010-11 and was at 2.6 million tonne in 2017-18 with an increase of about 8% as compared to the previous year. The production of lead and zinc ores was at 12,614 thousand tonne. The production of lead concentrates at 306 thousand tonne and that of zinc concentrates at 1,540 thousand tonne in 2017-18 showed an increase in ore and concentrates as compared to the previous year.

Non-Metallic Minerals : During the decade ending 2017-18, the production of apatite & phosphorite touched the highest level of 2.3 million tonne in 2011-12 and it was 1,534 thousand tonne in 2017-18 showing increase of 36% over the previous year. The production of diamond showed a progressive trend from 2010-11 and was 40 thousand carat in 2017-18 showing an increase of 11% over that of the preceding year.

The production of limestone had an increasing trend during the decade ending 2017-18 barring the marginal decrease seen in 2013-14. Its production at 338 million tonne in 2017-18 was about 8% higher over that of the preceding year and was highest in the decade. The production of magnesite with a mixed trend during the decade, at 195 thousand tonne in 2017-18, showed a decrease of 35% over that of the preceding year.

Production of Coal, 2008-09 to 2017-18				
Year	No. of* Mines	Quantity (Lakh tonne)	Value (Rs Crore)	Labour* Employed (Av. Daily)**
2008-09	561	4928	45537	356848
2009-10	560	5320	51318	360705
2010-11	559	5327	62021	355721
2011-12	559	5400	70172	352930
2012-13	559	5564	74719	345302
2013-14	536	5658	82535	338896
2014-15	539	6092	89287	343548
2015-16	493	6392	N.A.	328751
2016-17	476	6579	N.A.	328751(e)
2017-18 (P)	N.A.	6754	N.A.	328751(e)

** Excluding Meghalaya*

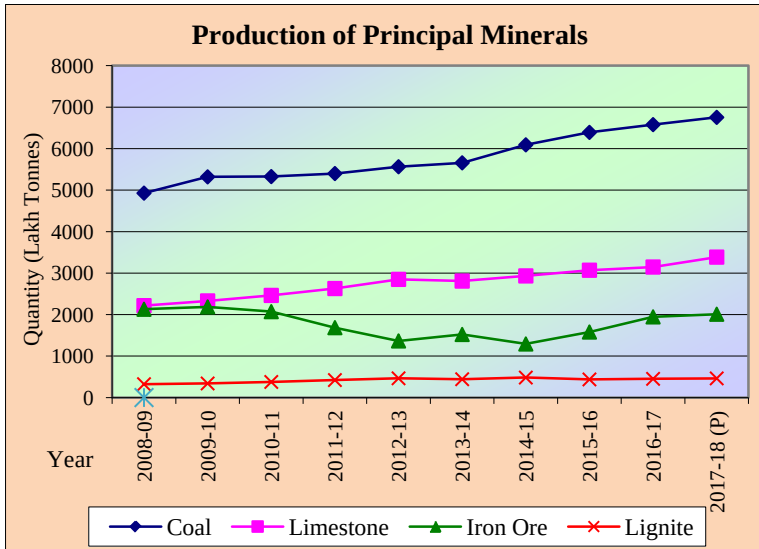
***Data relates to Calendar Year*

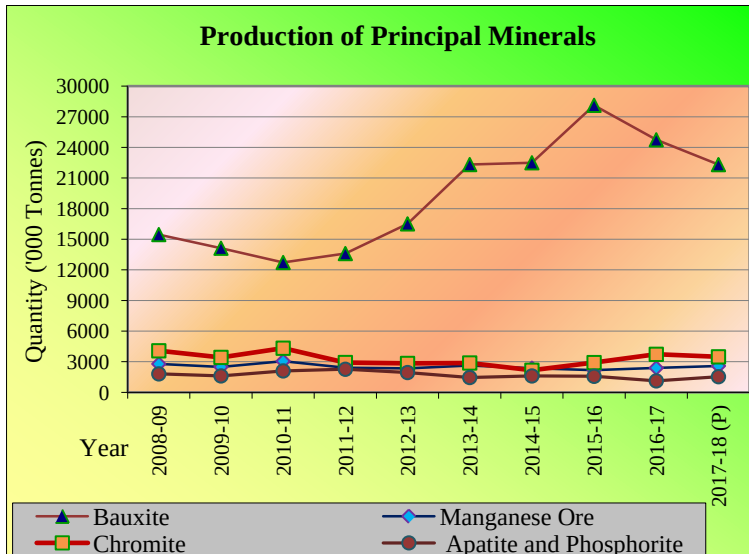
Production of Lignite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity (Lakh tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	13	324	3688	12566
2009-10	13	341	3776	13245
2010-11	14	377	4331	14406
2011-12	14	423	5338	13107
2012-13	16	465	5511	13212
2013-14	16	443	5968	13976
2014-15	19	483	8163	12356
2015-16	19	438	N.A.	11473
2016-17	19	452	N.A.	11473(e)
2017-18 (P)	N.A.	463	N.A.	11473(e)

Production of Petroleum (Crude), 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	33508	53385
2009-10	33690	60789
2010-11	37684	68804
2011-12	38090	69202
2012-13	37862	68817
2013-14	37788	68683
2014-15	37462	N.A.
2015-16	36942	N.A.
2016-17	36009	N.A.
2017-18 (P)	35684	N.A.

Production of Natural Gas (Utilised), 2008-09 to 2017-18

Year	Quantity (m.cu.m.)	Value (Rs Crore)
2008-09	32845	12107
2009-10	47496	17775
2010-11	52219	33425
2011-12	47559	34211
2012-13	40679	33642
2013-14	35407	29282
2014-15	33659	N.A.
2015-16	32249	N.A.
2016-17	31897	N.A.
2017-18 (P)	32649	N.A.


Production of Principal Minerals
Quantity (Lakh Tonnes)
8000
7000
6000
5000
4000
3000
2000
1000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18 (P)
Coal
Limestone
Iron Ore
Lignite


Production of Principal Minerals
Quantity ('000 Tonnes)
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18 (P)
Bauxite
Manganese Ore
Chromite
Apatite and Phosphorite

Production of Bauxite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	198	15460	470	8546
2009-10	197	14124	489	8178
2010-11	193	12723	512	7851
2011-12	172	13600	613	7684
2012-13	178	16508	796	7410
2013-14	177	22319	1000	6854
2014-15	162	22494	1192	6698
2015-16	190	28124	1544	8652
2016-17	165	24745	1487	6491
2017-18 (P)	152	22313	1502	6031

Production of Chromite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	24	4073	2263	6359
2009-10	22	3426	1045	6735
2010-11	21	4326	2596	6862
2011-12	22	2923	2424	6845
2012-13	25	2834	2263	6761
2013-14	26	2878	2376	6277
2014-15	26	2164	1880	6772
2015-16	25	2916	2121	6645
2016-17	26	3728	3194	6959
2017-18 (P)	25	3481	3211	7095

Production of Copper Ore and Concentrates, 2008-09 to 2017-18					
Year	No. of Mines	Copper Ore Quantity ('000 tonne)	Copper Concentrates		Labour Employed (Av. Daily)
			Quantity ('000 tonne)	Value (Rs Crore)	
2008-09	4	3452	138	409	2291
2009-10	4	3271	125	381	2611
2010-11	4	3602	137	473	2712
2011-12	4	3479	130	539	2774
2012-13	5	3636	124	629	2898
2013-14	5	3778	139	668	3324
2014-15	5	3505	108	529	3473
2015-16	5	3908	152	655	3285
2016-17	5	3846	135	651	2791
2017-18 (P)	5	3679	142	774	2586

Production of Gold Ore and Gold, 2008-09 to 2017-18

Year	No. of Mines	Gold Ore Qty. ('000 tonne)	Gold				Labour Emplo-yed (Av. Daily)
			Primary	Secondary	Total		
			Qty (kg)	Qty (kg)	Qty (kg)	Value (Rs Crore)	
2008-09	4	587	2438	-	2438	315	3210
2009-10	4	518	2084	-	2084	343	3210
2010-11	4	742	2399	-	2399	435	3150
2011-12	4	492	2194	-	2194	531	3100
2012-13	4	503	1588	-	1588	517	3204
2013-14	4	420	1564	-	1564	423	3433
2014-15	5	447	1441	-	1441	360	3429
2015-16	5	563	1323	-	1323	321	3426
2016-17	5	582	1595	-	1595	436	3451
2017-18 (P)	5	550	1648	-	1648	476	3250

Note: *No. of mines and labour employed relate to Primary Gold*

Production of Iron Ore, 2008-09 to 2017-18				
Year	No. of Mines	Quantity (Lakh tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	328	2130	28544	42702
2009-10	320	2186	26462	43557
2010-11	336	2072	39614	46147
2011-12	309	1686	38357	46673
2012-13	310	1366	32824	42645
2013-14	322	1522	31649	39127
2014-15	320	1293	27664	39243
2015-16	330	1581	22321	42065
2016-17	318	1946	25229	45383
2017-18 (P)	294	2010	34263	44949

Production of Lead & Zinc Ore and Concentrates, 2008-09 to 2017-18

Year	No. of Mines	Lead & Zinc Ore Qty. ('000 tonne)	Lead Concentrates		Zinc Concentrates		Labour Empl-oyed (Av. Daily)
			Qty. ('000 tonne)	Value (Rs Crore)	Qty. ('000 tonne)	Value (Rs Crore)	
2008-09	7	6681	134	136	1224	947	4157
2009-10	7	7102	134	177	1280	1306	3859
2010-11	6	7540	148	200	1427	1793	3408
2011-12	6	8042	162	245	1414	1986	3980
2012-13	8	8633	184	330	1493	2395	4665
2013-14	8	9282	194	437	1491	2739	7116
2014-15	8	9363	198	564	1489	3157	7222
2015-16	8	10453	262	789	1474	3494	7018
2016-17	8	11881	268	967	1484	4339	7337
2017-18 (P)	8	12614	306	1143	1540	4980	8391

Production of Manganese Ore, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	149	2789	1774	13796
2009-10	142	2492	1191	13806
2010-11	149	3056	1468	13682
2011-12	145	2412	1178	14258
2012-13	172	2342	1284	15550
2013-14	163	2626	1518	16659
2014-15	161	2369	1366	15504
2015-16	146	2167	855	12990
2016-17	153	2395	1625	12505
2017-18 (P)	143	2589	1972	12444

Production of Apatite and Phosphorite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	9	1810	310	1501
2009-10	9	1611	312	1507
2010-11	9	2101	502	1749
2011-12	7	2263	750	1604
2012-13	7	1942	681	1350
2013-14	7	1455	476	1205
2014-15	7	1608	376	1229
2015-16	7	1572	376	1224
2016-17	8*	1124	300	1280
2017-18 (P)	8*	1534	377	1237

** Includes two mines of apatite reporting only labour*

Production of Diamond, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 carats)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	2	0.5	0.5	154
2009-10	2	17	12	167
2010-11	2	11	11	163
2011-12	2	18	20	167
2012-13	2	32	37	180
2013-14	2	38	61	157
2014-15	2	36	61	176
2015-16	2	36	62	156
2016-17	2	36	64	157
2017-18 (P)	2	40	41	134

Production of Kyanite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	5	5	0.5	125
2009-10	4	5	0.6	115
2010-11	5	6	0.6	127
2011-12	3	4	0.5	56
2012-13	4	1	0.1	55
2013-14	4	4	0.8	64
2014-15	3	6	1.2	57
2015-16	5	3	1.4	98
2016-17	5	3	1.3	69
2017-18 (P)	5	8	2.3	63

Production of Limestone, 2008-09 to 2017-18				
Year	No. of Mines	Quantity (Lakh tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	601	2216	2922	19446
2009-10	565	2330	3248	21006
2010-11	592	2463	3635	19213
2011-12	686	2629	4086	22328
2012-13	778	2850	4797	22615
2013-14	779	2809	5133	22978
2014-15	785	2933	5800	23801
2015-16	807	3070	6867	23987
2016-17	832	3147	7388	23892
2017-18 (P)	711	3386	7441	20239

Production of Magnesite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	10	253	36	770
2009-10	8	301	44	899
2010-11	10	236	38	899
2011-12	11	224	35	777
2012-13	15	224	46	964
2013-14	14	197	45	818
2014-15	19	285	75	935
2015-16	20	328	83	1258
2016-17	19	299	75	1331
2017-18 (P)	9	195	50	893

Production of Sillimanite, 2008-09 to 2017-18				
Year	No. of Mines	Quantity ('000 tonne)	Value (Rs Crore)	Labour Employed (Av. Daily)
2008-09	4	34	24	2050
2009-10	4	34	26	2066
2010-11	4	49	41	1790
2011-12	4	59	52	1683
2012-13	5	44	35	1767
2013-14	5	67	41	2166
2014-15	4	66	46	1720
2015-16	4	70	51	1759
2016-17	4	68	54	1776
2017-18 (P)	5	82	67	1589

Section–3

Production of Metals & Alloys

Production of Metals and Alloys, 2008-09 to 2017-18

Section – 3

Production of Metals & Alloys

Ferrous Metals: The output of finished steel showed a continuous upward trend in production during the decade except in 2015-16 and it was at113 million tonne in 2017-18 at its highest level of the decade. An upward trend in production of semi-finished steel was also observed during the decade till 2014-15 and recorded the highest production of the decade at 65.8 million tonne in that year. However, it declined sharply by 43% thereafter and reported 38.4 million tonne output in 2017-18.

Ferroalloys: Increasing trend in production of ferrochrome was observed during the initial years of the decade ending 2017-18 and then it settled to maintain the level of 944 thousand tonne in the latest six years of the decade. The outputs of ferromanganese and ferrosilicon also had a constant level of production in the latest six years of the decade ending 2017-18 and it was 518 thousand tonne and 90 thousand tonne respectively.

Non-ferrous Metals: Among the non-ferrous metals, India has achieved self-sufficiency in aluminium and zinc. The production of alumina rose steadily, except in 2009-10 and 2012-13 and reached the highest level of the of the decade at 6,119 thousand tonne in 2017-18 registering a nominal increase as compared to that in the previous year. The production of aluminium increased steadily during

the decade except in 2013-14 and at 3,401 thousand tonne in 2017-18 it showed 17% increase as compared to the previous year.

The production of copper (blister/anode) showed mixed trend in the decade and it was at 15 thousand tonne during 2017-18. The production of copper (cathode) at 381 thousand tonne displayed a sharp decline of 52% in 2017-18. In case of copper (CCWR) the output was 380 thousand tonne with a marginal increase of 2% as compared to the level of the previous year.

A fluctuating trend was observed in the production of gold (including by-product recovery from imported copper cathodes) during the decade and it was 12,497 kg in 2017-18, i.e., 24% increase from that of the preceding year. The production of silver, a by-product, at 558 tonne in 2017-18 was 21% higher as compared to the previous year.

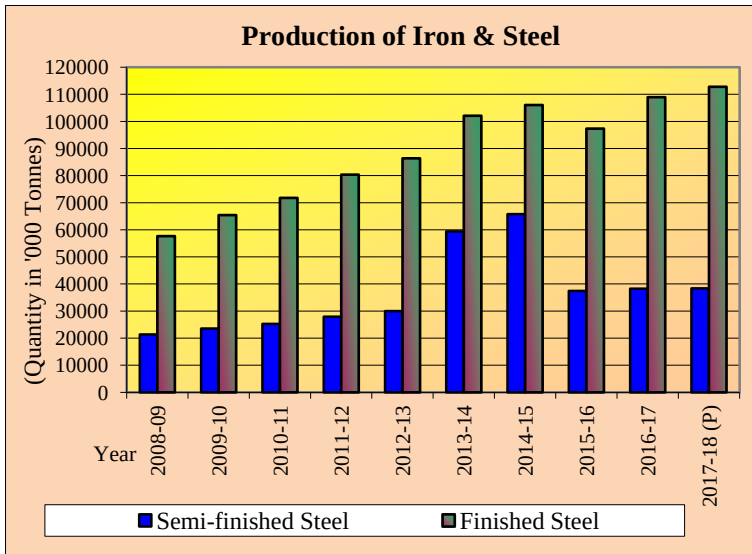
The output of lead (primary) showed increasing trend during the decade except in 2010-11 and during 2016-17. The production of lead (primary) at 168 thousand tonne was 18% higher than the previous year. The output of zinc ingots had a fluctuating trend of production during the decade ending 2016-17. It was 791 thousand tonne in 2017-18.

Production of Iron and Steel, 2008-09 to 2017-18 ('000 tonne)		
Year	Semi-finished Steel[@]	Finished Steel*
2008-09	21367	57659
2009-10	23561	65428
2010-11	25273	71775
2011-12	27928	80352
2012-13	29984	86381
2013-14	59379	102090
2014-15	65793	106052
2015-16	37445	97340
2016-17	38236	108950
2017-18 (P)	38357	112783

Source: *Joint Plant Committee, Kolkata*

[@]*Including Steel ingots*

**Including C.R. Sheets*


Production of Iron & Steel
(Quantity in '000 Tonnes)
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18 (P)
Semi-finished Steel
Finished Steel

Production of Principal Ferro-Alloys, 2008-09 to 2017-18

('000 tonne)

Year	Ferrochrome	Ferromanganese	Ferrosilicon
2008-09	618	332	81
2009-10	922	513	81
2010-11	938	511	81
2011-12	943	517	89
2012-13	944	518	90
2013-14	944	518	90
2014-15	944	518	90
2015-16	944	518	90
2016-17	944	518	90
2017-18 (P)	944	518	90

Source: *Joint Plant Committee, Kolkata*

Production of Alumina & Aluminium, 2008-09 to 2017-18 ('000 tonne)		
Year	Alumina	Aluminium
2008-09	3620	1347
2009-10	3433	1481
2010-11	3577	1621
2011-12	3931	1654
2012-13	3610	1720
2013-14	3779	1667
2014-15	4024	2027
2015-16	4172	2355
2016-17	6076	2897
2017-18 (P)	6119	3401

Production of Copper, 2008-09 to 2017-18 ('000 tonne)			
Year	Blister/Anode	Cathode	CCWR
2008-09	29	514	314
2009-10	18	533	312
2010-11	14	512	300
2011-12	19	505	288
2012-13	17	494	285
2013-14	17	644	283
2014-15	16	766	338
2015-16	17	790	390
2016-17	15	788	372
2017-18 (P)	15	831	380

CCWR: *Continuous Cast Wire Rod*

Production of Gold* and Silver*, 2008-09 to 2017-18

(Kilograms)

Year	Gold	Silver
2008-09	7309	142590
2009-10	11198	183656
2010-11	9360	193376
2011-12	11286	263910
2012-13	8304	434569
2013-14	9209	349774
2014-15	9988	402467
2015-16	10412	426443
2016-17	10082	460811
2017-18 (P)	12497	557691

** Includes production reported from HINDALCO Industries Ltd.*

Production of Lead and Zinc, 2008-09 to 2017-18 ('000 tonne)		
Year	Lead (Primary)	Zinc Ingots
2008-09	60	579
2009-10	64	614
2010-11	57	740
2011-12	92	784
2012-13	118	704
2013-14	123	767
2014-15	127	733
2015-16	145	759
2016-17	142	672
2017-18 (P)	168	791

Section – 4

Foreign Trade

Direction of Trade

Section-4

Export

The value of exports of minerals excluding petroleum (crude) from India showed a fluctuating trend during the decade ending 2017-18. It was Rs 1,99,120 crore during 2017-18 which is nominally lower as compared to the value in 2016-17. Diamond accounted for 81% of the total value of exports of minerals during 2017-18 followed by granite & iron ore (5% each) and alumina 2%.

India imports diamond (uncut) and after cutting & polishing exports the same thus earning substantial foreign exchange by value addition. The share of diamond in the value of exports of minerals fluctuated from 81% to 83% during the period between 2013-14 and 2017-18.

The export of iron ore had fluctuating trend throughout the decade ending 2017-18 and it was at 24.4 million tone valued at Rs 9,490 crore at the end of the decade. Granite is also one of the leading foreign exchange earners during the decade. The value of its exports at Rs 9,249 crore in 2017-18 registered 1% decrease as compared to 2016-17.

The exports of manganese ore has decreased from 289 thousand tonne in 2009-10 to mere 44 thousand tonne in 2017-18. The value of exports of manganese ore also declined continuously from Rs 121 crore in 2008-09 to

one crore in 2016-17 but increased substantially to Rs 51 crore in 2017-18. Other notable mineral items exported from India during 2017-18 were alumina, barytes, bauxite, chromite, coal, garnet (abrasive), marble, titanium ores & conc., emerald (cut & uncut), some precious & semi-precious stones, etc.

Imports

The value of imports of minerals and metals went up steeply from Rs 7,13,998 crore in 2008-09 to the level of Rs 15,47,366 crore in 2012-13 after which it started declining till 2015-16 and again rose to 14,40,327 crore in the year 2017-18. During the year 2017-18, the share of petroleum (crude) in the total value of imports of minerals was 55% and that of diamond was 18%, coal 13%, natural gas 5% and copper ore & concentrates 3%. The value of import of petroleum (crude) was Rs 5,63,098 crore in 2017-18 and that of diamond was Rs 1,89,913 crore.

India imported 208 million tonne of coal valued at Rs 1,38,485 crore in 2016-17. The quantity of imports of petroleum (crude) went up steadily from130 million tonne in 2008-09 to 218 million tonne in 2017-18.

The imports of rock phosphate fluctuated during the decade ending 2017-18. The imports of rock phosphate at 7.7 million tonne increased by 3% in the year 2017-18 but its value decreased by 8% as compared to the previous year.

The imports of sulphur (excluding precipitated, sublimed and colloidal) were at the level at 1.3 million tonne in 2008-09, fluctuated during the decade and it was 1.2 million tonne during 2017-18. The value of its imports was Rs 1,063 crore in 2017-18.

Coke, copper ores & concentrates, alumina, asbestos, emerald (cut & uncut), precious and semi-precious stones, manganese ore, marble and molybdenum ores & concentrates etc. were the other important minerals imported into India in 2017-18.

Exports of Chromite, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	1899	974
2009-10	689	801
2010-11	173	286
2011-12	225	489
2012-13	196	311
2013-14	195	347
2014-15	25	66
2015-16	72	131
2016-17	23	366
2017-18 (P)	82	174

Exports of Granite, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	3959	4815
2009-10	3828	4994
2010-11	4500	5593
2011-12	4605	6382
2012-13	6061	7942
2013-14	6802	9869
2014-15	6563	9832
2015-16	5675	9272
2016-17	6094	9337
2017-18 (P)	6525	9249

Value of Exports of Granite, 2013-14 to 2017-18
(By Principal Countries)

(Rs Crore)

Country	2013-14	2014-15	2015-16	2016-17	2017-18(P)
All Countries	**9869**	**9832**	**9272**	**9337**	**9249**
China	3266	3022	2590	2669	2863
USA	1613	1600	1641	1670	1458
Vietnam	112	162	316	401	549
Germany	349	405	357	386	392
Turkey	392	431	343	326	325
UAE	271	315	262	271	292
Poland	205	261	207	230	228
Italy	281	312	255	244	221
UK	304	295	280	258	212
Others	3076	3029	3021	2882	2709

Exports of Iron Ore, 2008-09 to 2017-18		
Year	Quantity (Lakh tonne)	Value (Rs Crore)
2008-09	689	21725
2009-10	1015	28366
2010-11	469	21416
2011-12	472	22184
2012-13	181	8985
2013-14	163	9481
2014-15	73	3144
2015-16	54	1264
2016-17	307	10293
2017-18 (P)	244	9490

Value of Exports of Iron Ore, 2013-14 to 2017-18
(By Principal Countries)

(Rs Crore)

Country	2013-14	2014-15	2015-16	2016-17	2017-18(P)
All Countries	**9481**	**3144**	**1264**	**10293**	**9490**
China	7338	1190	1032	9729	7039
Japan	1487	1125	--	155	1224
Korea, Rp of	307	305	--	29	581
Oman	180	4	--	215	228
Vietnam	30	--	2	--	126
Indonesia	--	--	--	--	72
Malaysia	--	--	8	--	62
Singapore	--	--	--	--	60
Korea, D.P.Rp	--	--	--	--	30
U K	--	--	--	--	29
Other Countries	139	520	221	165	40

Exports of Manganese Ore, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	205	121
2009-10	289	117
2010-11	99	80
2011-12	75	44
2012-13	72	27
2013-14	66	19
2014-15	11	7
2015-16	++	2
2016-17	++	1
2017-18 (P)	44	51

Exports of Marble, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	307	363
2009-10	276	305
2010-11	522	327
2011-12	325	386
2012-13	371	543
2013-14	338	570
2014-15	326	599
2015-16	290	600
2016-17	327	705
2017-18 (P)	355	766

Exports of Mica, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	191	180
2009-10	94	162
2010-11	127	226
2011-12	132	289
2012-13	128	346
2013-14	128	376
2014-15	141	426
2015-16	136	423
2016-17	135	456
2017-18 (P)	155	619

Imports of Asbestos, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	347	874
2009-10	331	939
2010-11	366	1003
2011-12	378	1199
2012-13	460	1900
2013-14	286	1330
2014-15	396	1717
2015-16	356	1487
2016-17	311	1128
2017-18 (P)	357	1160

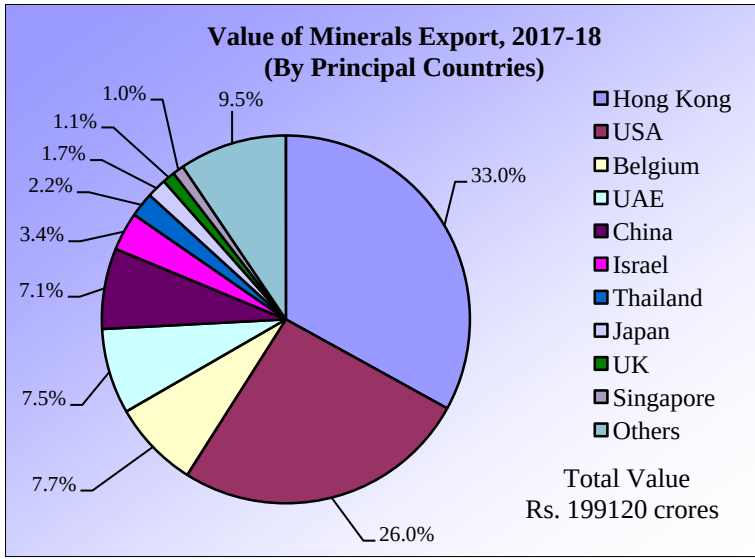
Imports of Coal, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	59004	41341
2009-10	73257	39180
2010-11	68918	41549
2011-12	102841	78827
2012-13	145790	86851
2013-14	166861	92335
2014-15	212106	104530
2015-16	204000	86107
2016-17	191014	100316
2017-18 (P)	208279	138485

Imports of Petroleum (Crude), 2008-09 to 2017-18		
Year	Quantity (Lakh tonne)	Value (Rs Crore)
2008-09	1300	346845
2009-10	1536	365901
2010-11	1531	421616
2011-12	1657	643689
2012-13	1855	785602
2013-14	1892	869657
2014-15	1879	709379
2015-16	2023	429400
2016-17	2149	474219
2017-18 (P)	2181	563098

Imports of Rock Phosphate, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	5010	4840
2009-10	5684	3275
2010-11	5194	3211
2011-12	9730	8315
2012-13	8161	7310
2013-14	7161	5518
2014-15	8273	6189
2015-16	8038	6529
2016-17	7511	4951
2017-18 (P)	7703	4546

Imports of Sulphur*, 2008-09 to 2017-18		
Year	Quantity ('000 tonne)	Value (Rs Crore)
2008-09	1286	2994
2009-10	1534	681
2010-11	1357	1098
2011-12	2038	2283
2012-13	1547	1736
2013-14	1290	1100
2014-15	1626	1745
2015-16	1433	1417
2016-17	1346	875
2017-18 (P)	1206	1063

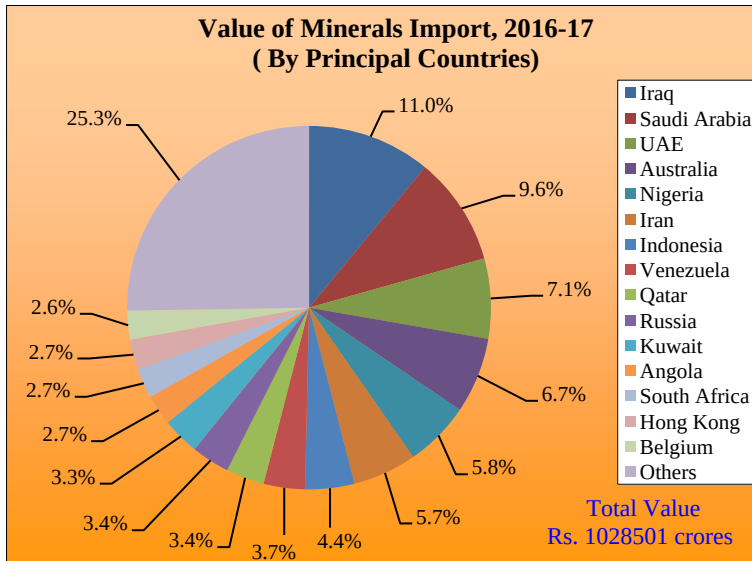
***** *Excluding sublimed, ppt and colloidal*


Value of Minerals Export, 2017-18
(By Principal Countries)
33.0%
26.0%
7.7%
7.5%
7.1%
3.4%
2.2%
1.7%
1.1%
1.0%
9.5%
Hong Kong
USA
Belgium
UAE
China
Israel
Thailand
Japan
UK
Singapore
Others
Total Value
Rs. 199120 crores

Value of Exports of Minerals, 2017-18 (P)
(By Principal Countries)

Country	Value (Rs Crore)	Percentage Contribution
Total	**199120**	**100**
Hong Kong	65755	33
USA	51726	26
Belgium	15263	8
UAE	14932	7
China	14118	7
Israel	6686	3
Thailand	4289	2
Japan	3424	2
UK	2157	1
Singapore	1944	1
Others	18826	10

Value of Exports of Metals, 2017-18 (P) (By Principal Countries)		
Country	Value (Rs Crore)	Percentage Contribution
Total	**190294**	**100**
UAE	22395	12
U S A	19098	10
China	14553	8
Korea, Rp of	10402	5
Malaysia	9914	5
Italy	9146	5
Nepal	7097	4
Belgium	6187	3
Indonesia	4588	2
Spain	4320	2
Vietnam	4243	2
Bangladesh	4150	2
Chinese Taipei/Taiwan	4110	2
Germany	3929	2
Others	66162	35


Value of Minerals Import, 2016-17
(By Principal Countries)
11.0%
9.6%
7.1%
6.7%
5.8%
5.7%
4.4%
3.7%
3.4%
3.4%
3.3%
2.7%
2.7%
2.7%
2.6%
25.3%
Iraq
Saudi Arabia
UAE
Australia
Nigeria
Iran
Indonesia
Venezuela
Qatar
Russia
Kuwait
Angola
South Africa
Hong Kong
Belgium
Others
Total Value
Rs. 1028501 crores

Value of Imports of Minerals, 2017-18 (P) (By Principal Countries)		
Country	Value (Rs Crore)	Percentage Contribution
Total	**1028501**	**100**
Iraq	112991	11
Saudi Arabia	99209	10
UAE	73198	7
Australia	69251	7
Nigeria	59985	6
Iran	58295	6
Indonesia	44939	4
Venezuela	37751	4
Qatar	35005	3
Russia	34871	3
Kuwait	34092	3
Angola	27815	3
South Africa	27552	3
Hong Kong	27381	3
Belgium	26401	3
Others	259766	25

Value of Imports of Metals, 2017-18 (P) (By Principal Countries)		
Country	Value (Rs Crore)	Percentage Contribution
Total	**411825**[(U)]	**100**
Switzerland	111451	27
UAE	33695	8
China	30781	7
Korea, Rp of	22690	6
USA	21480	5
Ghana	15695	4
Hong Kong	14293	3
Japan	11637	3
Peru	11516	3
South Africa	11330	3
U K	10111	2
Malaysia	9301	2
Australia	7924	2
Germany	6401	2
Other	93520	23

(U): Under Reference

Exports, Imports and Net Trade in Minerals and Metals, 2008-09 to 2017-18
(Rs Crore)

Year	Minerals and Metals (Including Petroleum)			Minerals (Excluding Petroleum Crude)		
	Exports	Imports	Difference	Exports	Imports	Difference
2008-09	191535	713998	-522463	109156	167664	-58508
2009-10	185806	739255	-553449	127742	158929	-31187
2010-11	268422	955845	-687423	174370	247394	-73024
2011-12	277810	1362740	-1084930	175238	300741	-125503
2012-13	300715	1547366	-1246651	160101	315198	-155097
2013-14	347940	1537183	-1189243	194784	346170	-151386
2014-15	345315	1472992	-1127677	178019	362354	-184335
2015-16	323859	1129161	-805302	170946	309389	-138443
2016-17	382317	1147234	-764917	200131	335226	-135095
2017-18 (P)	389414	1440327	-1050913	199120	465404	-266284

Exports, Imports and Net Trade in Minerals and Metals, 2008-09 to 2017-18

(Rs Crore)

Year	Petroleum Crude			Metals		
	Exports	Imports	Difference	Exports	Imports	Difference
2008-09	140	346845	-346705	82239	199489	-117250
2009-10	89	365901	-365812	57975	214425	-156450
2010-11	++	421616	-421616	94052	286835	-192783
2011-12	72	643689	-643617	102500	418310	-315810
2012-13	-	785602	-785602	140614	446566	-305952
2013-14	-	869657	-869657	153156	321356	-168200
2014-15	-	709379	-709379	167296	401259	-233963
2015-16	-	429400	-429400	152913	390372	-237459
2016-17	-	474219	-474219	182186	337788	-155602
2017-18 (P)	-	563098	-563098	190294	411825(U)	-221531

(U): Under Reference

Share of Principal Minerals in the Value of Mineral Exports, 2013-14 to 2017-18

Exports

Year	Exports of all Minerals (Rs Crore)	Percentage Share of Principal Minerals						
		Diamond*	Granite	Iron Ore	Alumina	Emerald (Cut & Uncut)	Precious & Semi-Precious Stones (Cut & Uncut)	Others
2013-14	194784	81	5	5	1	1	1	6
2014-15	178019	83	6	2	2	1	1	5
2015-16	170946	83	5	1	2	1	1	7
2016-17	200131	81	5	5	2	1	1	5
2017-18 (P)	199120	81	5	5	2	1	1	5

**Includes mostly cut, industrial and powder*

Share of Principal Minerals in the Value of Mineral Imports, 2013-14 to 2017-18

Imports

Year	Imports of All Minerals (Rs Crore)	Percentage Share of Principal Minerals						
		Petroleum (Crude)	Diamond*	Coal#	Natural Gas	Copper Ore & Conc.	Coke	Others
2013-14	1215827	72	11	8	4	3	1	1
2014-15	1071733	66	12	10	5	3	++	4
2015-16	738789	58	15	12	6	4	++	5
2016-17	809445	59	16	12	5	2	1	5
2017-18 (P)	1028501	55	18	13	5	3	1	5

** Includes mostly cut, industrial and powder*
#: Excluding Lignite

Share of Principal Countries in the Value of Exports of Diamond 2013-14 to 2017-18

Exports of Diamond (Mostly Cut)

Year	Value of Exports (Rs Crore)	Percentage Share of Principal Importing Countries							
		Hong Kong	USA	Belgium	UAE	Israel	Thailand	Singapore	Others
2013-14	158005	35	23	10	17	5	3	1	6
2014-15	148056	38	27	11	10	5	3	1	5
2015-16	142664	36	30	10	10	5	3	1	5
2016-17	162567	38	30	10	9	4	2	1	6
2017-18 (P)	161931	40	27	9	8	4	2	1	9

Share of Principal Countries in the Value of Imports of Diamond 2013-14 to 2017-18 Imports of Diamond (Mostly Cut)									
Year	Value of Imports (Rs Crore)	Percentage Share of Principal Exporting Countries							
		UAE	Belgium	Russia	Hong Kong	Bots-wana	Canada	Israel	Others
2013-14	134117	25	40	3	14	2	++	5	11
2014-15	125035	20	44	4	11	4	1	5	11
2015-16	110378	22	39	7	11	3	2	6	10
2016-17	129443	23	26	12	11	7	3	6	13
2017-18 (P)	189913	15	14	12	11	6	4	3	36

Production, Exports/Imports and Apparent Consumption as Percentage of Total Availability, 2017-18 (P)

(By Selected Minerals)

Mineral	Total Availability* ('000 tonne)	Percentage Share of			
		Gross Production	Imports	Exports	Apparent Consumption
Iron Ore	209661	96	4	12	88
Chromite	3641	96	4	2	98
Bauxite	23774	94	6	6	94
Limestone	359380	94	6	1	99
Coal	883679	76	24	0	100
Magnesite	425	46	54	2	98
Manganese Ore	6157	42	58	1	99
Sulphur	2032	41	59	28	72
Rock Phosphate	9237	17	83	0	100
Petroleum (crude)	253788	14	86	0	100
Asbestos	357	0	100	0	100

** Total Availability = Apparent Consumption + Exports = Production + Imports*

Section – 5

Average Daily Employment in Mines

Average Daily Employment in Mines

Section-5

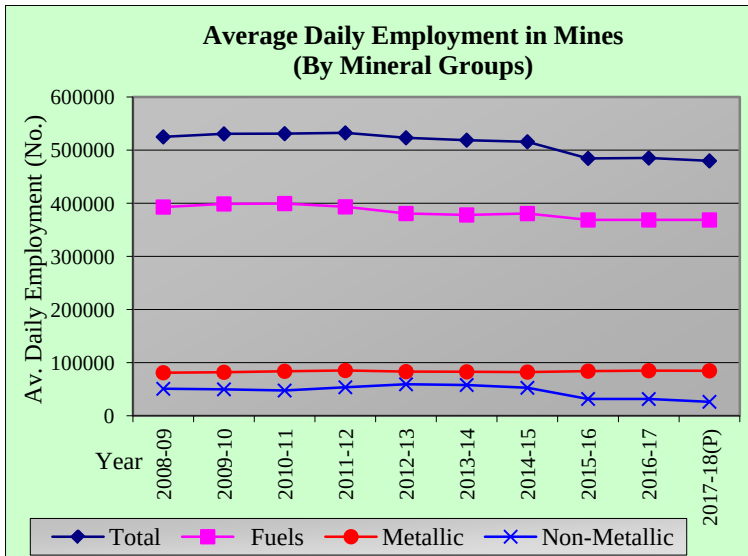
Average Daily Employment in Mines

The average daily employment of labour at around 5.25 lakh persons during 2008-09 decreased to 4.80 lakh persons in 2017-18. Among the major group of minerals, fuel accounted for 77% to the total employment during 2016-17, metallic minerals 18% and non-metallic minerals about 5 percent. The average daily employment of labour in 2017-18 was 4,79,830 which was 1% lower as compared to the preceding year.

In the case of fuel minerals, coal and lignite together accounted for 92% of the labour force engaged during 2017-18. In Metallic group of minerals, iron ore accounted for 53% of the total employment, followed by manganese ore 15%, lead & zinc concentrates 10%, chromite 8%, bauxite 7%, gold 4% and copper concentrates 3%. The share of limestone in the labour employed in Non-metallic minerals was 77% followed by sillimanite (6%), apatite & phosphorite (5%), magnesite and garnet (abrasive) (3% each) and limeshell 2%. The remaining 4% labour was employed in the mines of other Non-metallic minerals.

In the case of metallic and non-metallic minerals covered under

MCDR, 1988 (which excludes fuel, atomic and minor minerals), 514 mines of Category 'A' employed 88 thousand persons while 916 mines of 'B' Category employed about 23 thousand persons in 2017-18. The contribution of Category 'A' and Category 'B' mines to the total value of MCDR minerals in 2017-18 was 78% and 22% respectively. About 36 thousand persons were engaged in 146 Public Sector mines and 74 thousand persons were engaged in 1,284 Private Sector mines in 2017-18. The shares of Public and the Private Sectors in the total value of (metallic and non-metallic) minerals production were 33% and 67% respectively.


Average Daily Employment in Mines
(By Mineral Groups)
Av. Daily Employment (No.)
600000
500000
400000
300000
200000
100000
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18(P)
Total
Fuels
Metallic
Non-Metallic

Average Daily Employment in Mines, 2008-09 to 2017-18 (By Groups)				
Year	Total	Fuels*	Metallic Minerals	Non-metallic Minerals
2008-09	525024	392988	81119	50917
2009-10	530699	398845	82000	49854
2010-11	531122	399570	83865	47687
2011-12	532552	393384	85361	53807
2012-13	523352	380815	83172	59365
2013-14	518927	378070	82820	58037
2014-15	515834	380719	82375	52740
2015-16	484585	368695	84113	31777
2016-17	485269	368695	84936	31638
2017-18(P)	479830	368695	84762	26373

Source: *Fuel - DGMS, Dhanbad*
Metallic & Non-metallic --Returns received under MCDR, 1988
** Calendar Year*

Average Daily Employment in Metallic Minerals Mines, 2017-18 (P) (By Sectors)			
Mineral	Total	Public	Private
Total	**84762**	**30303**	**54459**
Iron Ore	44949	13389	31560
Manganese Ore	12444	7763	4681
Lead & Zinc Concentrates	8391	-	8391
Chromite	7095	2025	5070
Bauxite	6031	1331	4700
Gold	3250	3209	41
Copper Concentrates	2586	2586	-
Tin Concentrates	16	-	16

Source: *Returns received under MCDR, 1988*

Average Daily Employment in Non-Metallic Minerals Mines, 2017-18 (P) (By Sectors)			
Mineral	Total	Public	Private
Total	**26373**	**5980**	**20393**
Limestone	20239	2141	18098
Sillimanite	1589	1550	39
Apatite &Phosphorite	1237	1150	87
Magnesite	893	555	338
Garnet (Abrasive)	806	296	510
Limeshell	478	-	478
Graphite	384	19	365
Wollastonite	293	-	293
Diamond	134	134	-
Others	320	135	185

Source: *Returns received under MCDR, 1988*

Employment in Mines, 2017-18(P) (Metallic & Non-Metallic Minerals) (By Category/Sector)			
Category/Sector	No. of Mines	Average Daily Employment for the Group	Value of Production (Rs Crore)
Total	**1430**	**111135**	**58638**
Category A	514	87919	45748
Category B	916	23216	12890
Public Sector	146	36283	19156
Private Sector	1284	74852	39482

Source:*Returns received under MCDR, 1988*

Category 'A' *i) Mechanised Mines*
ii) > 150 labours in all
iii) > 75 labours in workings below ground

Category 'B' *: Other than 'A'*

Section – 6

Consumption of Minerals

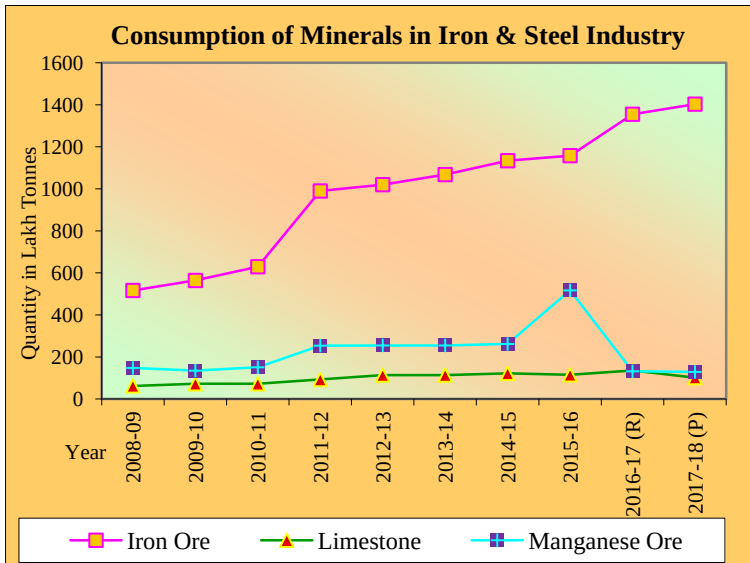
Section-6

Consumption of Minerals

Iron & Steel Industry: Iron ore is the basic raw material required for Iron & Steel Industry. Besides coal, limestone and manganese ore are also consumed.During the year 2017-18, upward trend of mineral consumption in some of the above minerals was observed in Iron & Steel Industry. The increase of 4% in consumption of iron ore was noticed in 2017-18 while it decreased by 25% in limestone and 2% in manganese ore as compared to the previous year.

Cement Industry: Important mineral consumed in Cement Industry is limestone. Besides, bauxite and iron ore are also consumed in varying amounts. During the year 2017-18, consumption of bauxite was almost the same as that of the previous year. While consumption of limestone increased by 7%, it decreased by 10% in iron ore. The consumption of limestone was 2.71 million tonne (excluding other calcareous minerals) in 2017-18.

Refractory Industry: The consumption of magnesite increased to more than double to 137 thousand tonne and that of kyanite & sillimanite increased to three times during the year 2017-18 as compared to previous year.


Consumption of Minerals in Iron & Steel Industry
Quantity in Lakh Tonnes
1600
1400
1200
1000
800
600
400
200
0
Year
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17 (R)
2017-18 (P)
Iron Ore
Limestone
Manganese Ore

Consumption of Minerals in Iron & Steel Industry, 2008-09 to 2017-18

('000 tonne)

Year	Iron Ore*^	Coal*@	Limestone*	Manganese Ore	Ferro-alloys	Bauxite	Fluorite
2008-09	516.6	177.7	62.3	148	538	1	3
2009-10	564.2	185.7	72.5	135	574	1	1
2010-11	629.5	186.3	72.5	151	571	1	3
2011-12	990	158	93	254	630	1	2
2012-13	1020	160	114	255	416	1	2
2013-14	1068	153	114	255	406	1	2
2014-15	1134	123	122	262	415	N.A.	N.A.
2015-16	1158	124#	115	517	N.A.	N.A.	N.A.
2016-17 (R)	1355	125#	136	132	N.A.	N.A.	N.A.
2017-18 (P)	1403	N.A.	102	129	N.A.	N.A.	N.A.

Figures rounded off

* *Lakh tonne@ Relates to despatches of coal*

(R) Revised (P) Provisional

Includes actual reported consumption and/or estimates made wherever required

Paucity of data, hence coverage may not be complete

\# ***Source:*** *Coal Directory of India, 2015-16 and Provisional Coal Statistics, 2017-18*

$ *The figures for iron & steel and pelletisation (iron & steel) added*

^ *Iron & Steel Industry including sponge iron*

Consumption of Minerals in Cement Industry, 2008-09 to 2017-18

('000 tonne)

Year	Limestone[*+]	Coal[*@]	Bauxite	Iron Ore
2008-09	1720	131.2	1144	1074
2009-10	2030	131.2	1043	1294
2010-11	2320	141.8	1082	1494
2011-12	2399	129	1041	1548
2012-13	2533	128	535	1586
2013-14	2558	116	561	1455
2014-15	2790	111	1039	1186
2015-16	2898	90[#]	1406	1254
2016-17 (R)	2544[^]	64[#]	1554	869
2017-18 (P)	2711[^]	N.A.	1552	778

Figures rounded off

**Lakh tonne*

+: Limestone and other calcareous material. (R): Revised (P): Provisional

Includes actual reported consumption and or estimates made wherever required

Paucity of data, hence coverage may not be complete

[@] *Relates to despatches of coal. $: Includes Quartz, Quartzite and Silica Sand*

[#] ***Source:*** *Coal Directory of India, 2015-16 and Provisional Coal Statistics, 2017-18*

[^] *Excludes other calcareous materials*

Consumption of Minerals in Refractory Industry, 2008-09 to 2017-18

('000 tonne)

Year	Magnesite	Bauxite & Diaspore	Chromite*	Kyanite & Sillimanite
2008-09	312	318	24	17
2009-10	229	128	24	18
2010-11	163	118	45	15
2011-12	112	280	25	15
2012-13	91	313	42	21
2013-14	58	295	41	22
2014-15	67	301	20	28
2015-16	69	288[$]	9	27
2016-17 (R)	60	110[$]	4	22
2017-18 (P)	137[#]	64[$]	4	66[#]

Figures rounded off

** Includes consumption in Iron & Steel Industry*

Includes actual reported consumption and/or estimates made wherever required

Paucity of data, hence coverage may not be complete

$: Excludes diaspore

(R): Revised (P): Provisional

#: Consumption estimated from the despatches as reported in Form 'H'

Section – 7

Production of Mineral-Based Products

Section – 7

Production of Mineral-Based Products

Cement and Asbestos-Cement Products: The output of cement in the country during the decade has increased by about 59% during 2017-18 at 2,880 lakh tonne as compared to 1,814 lakh tonne in 2008-09 and it also increased by about 7% as compared to the previous year.

Ceramic Products: The total production of ceramic products consisting of glazed tiles and insulators showed an increasing trend till the year 2015-16 during the decade except for the year 2012-13. The output of glazed tiles at 1,381 thousand tonne in 2008-09 recorded a highest level of 2584 thousand tonne in 2015-16. It was 2,317 thousand tonne during 2017-18 with 5% decrease over that of the previous year. Production of insulators had a fluctuating trend during the decade and was at the level of 64 thousand tonne during 2017-18.

Fertilizers and Sulphuric Acid: The output of fertilizers witnessed fluctuations during the decade and the production reported was 18.11 million tonne in 2017-18. The production of Sulphuric Acid was 6,156 thousand tonne in the year 2017-18**.**

Production of Cement and Asbestos-Cement Products
2008-09 to 2017-18[@]

Year	Cement	Asbestos-Cement Products*
	Production (Lakh tonne)	Production ('000 tonne)
2008-09	1814	2382
2009-10	2007	2606
2010-11	2097	2468
2011-12	2235	N.A.
2012-13	2406	N.A.
2013-14	2498	N.A.
2014-15	2613	N.A.
2015-16	2739	N.A.
2016-17 (P)	2704	N.A.
2017-18 (P)	2880	2625

** Includes the production of asbestos cement sheets and Asbestos-cement pressure & building pipes etc.*

Source: *Department for Promotion of Industry and Internal Trade*

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12

Production of Ceramic Products, 2008-09 to 2017-18@ ('000 tonne)		
Year	Glazed Tiles	Insulators (H.T. and L.T.)
2008-09	1381	56
2009-10	1452	61
2010-11	1478	68
2011-12	1573	61
2012-13	1464	56
2013-14	2350	68
2014-15	2501	71
2015-16	2584	72
2016-17 (P)	2439	68
2017-18 (P)	2317	64

Source: *Department for Promotion of Industry and Internal Trade*

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12

Production of Fertilizers, 2008-09 to 2017-18 ('000 tonne)		
Year	Phosphatic	Nitrogenous
2008-09	3464	10870
2009-10	4321	11900
2010-11	4222	12156
2011-12	4101	12259
2012-13	3541	12194
2013-14	3714	12378
2014-15	4121	12394
2015-16	4394	13416
2016-17	4595	13354
2017-18	4723	13386

Source: *Department of Fertilizers, Ministry of Chemicals and Fertilizers*

Production of Sulphuric Acid, 2008-09 to 2017-18[@] ('000 tonne)	
Year	Production
2008-09	6395
2009-10	7444
2010-11	5670
2011-12	5870
2012-13	5730
2013-14	5061
2014-15	5407
2015-16	5805
2016-17	6150
2017-18 (P)	6156

Source: *Department for Promotion of Industry and Internal Trade*

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12

Section – 8

Mining Machinery

Mining Machinery, 2017-18

Section – 8

Mining Machinery

During the reporting year, 2017-18, a total number of 499 opencast mechanised mines were covered for compilation and preparation of statement on population of mining machinery as against 585 mines covered during 2016-17. Hence, there isa decrease of 15 percent on the coverage of mines during the year.

Like last year, the majority of the mechanised mines covered are of limestone, iron ore, bauxite, manganese ore, chromite and others. Conventional methods of Deep-hole blasting with Shovel-Dumper combination are mostly found.

It is observed that there is an increase in the population of mining machinery like Front-End Loader, Back Hoe, Bull Dozer, Cranes, Hauler/Dumper, Drills/Blastholes, Air Compressor and Motor Grader. However, there is a decrease of mining machinery like Crusher and Dipper Shovel (Hydraulic) during the reporting year. But, in overall, there is an increase in the mining machinery population to the extent of 9% during the year under review.

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Dipper Shovels (Mechanical and Hydraulic)

Capacity (cu. m)	Total			Mechanical			Hydraulic		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
In Use (Nos.)									
< 1.16	111	33	78	3	3	-	108	30	78
1.16-2.30	101	12	89	6	-	6	95	12	83
2.31-3.45	67	6	61	4	-	4	63	6	57
3.46-4.60	137	21	116	1	1	-	136	20	116
>4.60	136	40	96	8	8	-	128	32	96
Total	**552**	**112**	**440**	**22**	**12**	**10**	**530**	**100**	**430**
In Reserve (Nos.)									
< 1.16	3	2	1	-	-	-	3	2	1
1.16-2.30	1	-	1	-	-	-	1	-	1
2.31-3.45	6	1	5	-	-	-	6	1	5
3.46-4.60	9	1	8	-	-	-	9	1	8
>4.60	11	-	11	-	-	-	11	-	11
Total	**30**	**4**	**26**	**-**	**-**	**-**	**30**	**4**	**26**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Front-End Loaders

Capacity (cu.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 1.16	59	6	53	1	-	1
1.16 – 2.30	330	44	286	8	2	6
2.31 – 3.45	113	10	103	8	-	8
3.46 – 4.60	41	3	38	2	-	2
> 4.60	110	12	98	5	1	4
Total	**653**	**75**	**578**	**24**	**3**	**21**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Bulldozers/Ripper Dozers

Capacity (h.p.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 100	37	8	29	2	1	1
100-200	104	13	91	8	-	8
201-300	48	7	41	3	-	3
301-400	139	18	121	5	1	4
> 400	98	61	37	4	-	4
Total	**426**	**107**	**319**	**22**	**2**	**20**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Motor Graders

Capacity (h.p.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 100	9	4	5	2	-	2
100-200	48	8	40	2	-	2
201-300	34	18	16	2	-	2
301-400	4	2	2	1	-	1
> 400	1	-	1	-	-	-
Total	**96**	**32**	**64**	**7**	**-**	**7**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Haulers/Dumpers

Capacity (tonne)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	1565	61	1504	16	13	3
10-20	1514	280	1234	73	17	56
21-30	1284	143	1141	61	-	61
31-40	757	41	716	37	-	37
41-60	598	118	480	41	1	40
61-100	147	56	91	-	-	-
101-150	98	41	57	8	2	6
> 150	13	10	3	-	-	-
Total	**5976**	**750**	**5226**	**236**	**33**	**203**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Drills/Blastholes

Capacity in diameter of the hole/bit (m.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 50	268	97	171	20	13	7
50-100	121	13	108	11	8	3
101-150	432	58	374	49	7	42
151-200	97	32	65	11	-	11
> 200	23	16	7	-	-	-
Total	**941**	**216**	**725**	**91**	**28**	**63**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Crushers

Capacity (tonne/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	9	1	8	-	-	-
10-50	18	-	18	2	1	1
51-100	31	2	29	1	-	1
101-300	150	11	139	3	-	3
301-500	55	5	50	-	-	-
> 500	107	32	75	7	-	7
Total	**370**	**51**	**319**	**13**	**1**	**12**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Air Compressors (Diesel & Electric)

Capacity (cu.m./min.)	Total			Diesel			Electric		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
In Use (Nos.)									
< 5	122	18	104	58	7	51	64	11	53
5.0 – 10	105	11	94	85	10	75	20	1	19
10.1 – 15	230	18	212	216	17	199	14	1	13
15.1 – 50	99	27	72	54	5	49	45	22	23
50.1 – 100	37	9	28	23	4	19	14	5	9
> 100	121	32	89	106	29	77	15	3	12
Total	**714**	**115**	**599**	**542**	**72**	**470**	**172**	**43**	**129**
In Reserve (Nos.)									
< 5	1	-	1	-	-	-	1	-	1
5.0 – 10	5	-	5	2	-	2	3	-	3
10.1 – 15	15	1	14	14	1	13	1	-	1
15.1 – 50	7	2	5	1	-	1	6	2	4
50.1 – 100	-	-	-	-	-	-	-	-	-
> 100	4	-	4	4	-	4	-	-	-
Total	**32**	**3**	**29**	**21**	**1**	**20**	**11**	**2**	**9**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Locomotives

Pay load capacity (tonne)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 50	4	4	-	2	2	-
50-100	1	-	1	-	-	-
101-150	-	-	-	-	-	-
151-200	-	-	-	-	-	-
> 200	17	17	-	-	-	-
Total	**22**	**21**	**1**	**2**	**2**	**-**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Back Hoes

Capacity (cu.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 1.16	447	31	416	21	1	20
1.16 – 2.30	400	33	367	28	3	25
2.31 – 3.45	169	12	157	6	-	6
3.46 – 4.60	64	2	62	5	-	5
> 4.60	62	12	50	6	-	6
Total	**1142**	**90**	**1052**	**66**	**4**	**62**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Cranes

Lifting capacity (tonne/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	75	26	49	3	-	3
10-20	59	30	29	1	-	1
21-50	29	17	12	1	-	1
51-75	7	1	6	-	-	-
> 75	-	-	2	-	-	-
Total	**172**	**74**	**98**	**5**	-	**5**

Mining Machinery in Metalliferous Opencast Mechanised Mines in India, 2017-18

Surface Miners

Capacity (tonne/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 150	17	-	17	-	-	-
150-200	7	-	7	-	-	-
201-250	5	1	4	-	-	-
251-300	7	-	7	1	-	1
> 300	7	1	6	3	-	3
Total	**43**	**2**	**41**	**4**	**-**	**4**

Appendix – I

Decennial Growth in Production of Important Minerals

Mineral	Unit	1947	1957	1967	1977	1987	1997-98	2007-08	2017-18 (P)
Fuels									
Coal	'000 t	30564	44186	68223	100358	177345	296656	457082	675400
Lignite	'000 t	63	22	2929	3632	10887	23052	33980	46255
Natural Gas (Utilised)	m.cu. m.	-	-	446	1621	7655	24544	32417	32649
Petroleum (Crude)	'000 t	252	440	5667	10185	30142	33858	34118	35684
Metallic Minerals									
Bauxite	'000 t	20	110	804	1519	2814	6108	22625	22313
Chromite	'000 t	35	80	114	353	625	1515	4873	3481
Copper Ore	'000 t	327	410	470	2552	5136	4515	3242	3679
Copper Concentrates	'000 t	NA	32	35	143	275	223	150	142
Gold Ore	'000 t	NA	798	452	508	420	437	681	550
Gold (Primary) [#]	kg	5341	5573	3161	3014	1863	2162	2969	1648
Iron Ore	'000 t	2547	8115	25855	42598	51335	75723	213250	200955
Lead & Zinc Ore	'000 t	NA	97	164	967	1650	2483	5783	12614
Lead Concentrates	'000 t	1	5	5	17	47	61	126	306
Zinc Concentrates	'000 t	-	8	10	46	105	293	1036	1540
Manganese Ore	'000 t	465	1877	1617	1865	1303	1642	2697	2589
Silver	kg	386	3915	3471	13228	37943	53956	80697	557691
Non-Metallic Minerals									
Apatite & Phosphorite	'000 t	1	9	12	741	692	1149	1856	1534
Diamond	th. carats	1	1	8	18	16	31	1	40
Kyanite	'000 t	16	24	50	42	40	6	5	8
Sillimanite	'000 t	++	8	6	15	17	12	51	82
Limestone	'000 t	3417	9571	19586	30380	57844	110442	193089	338552
Magnesite	'000 t	52	90	246	402	429	374	253	195

#: Excludes production reported by-product

Appendix – II

Decennial Mineral Production

Mineral	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Fuels											
Coal	'000 t	492757	532042	532694	539950	556400	565765	609179	639230	657868	675400
Lignite	'000 t	32421	34071	37733	42332	46500	44271	48270	43842	45230	46255
Natural Gas (Ut.)	m. cu. m.	32845	47496	52219	47559	40679	35407	33659	32249	31897	32649
Petroleum (Crude)	'000 t	33508	33690	37684	38090	37862	37788	37462	36942	36009	35684
Metallic Minerals											
Bauxite	t	15460202	14124093	12722820	13599566	16507960	22319148	22493671	28123789	24745487	22312681
Chromite	t	4073479	3425580	4325699	2923435	2833895	2878320	2164163	2915584	3727780	3480928
Copper Ore	t	3452406	3271169	3601984	3479189	3635751	3777772	3505348	3907823	3846427	3678846
Copper Conc.	t	137514	124577	136856	130456	123654	139307	107604	151837	134787	141863
Gold Ore	t	587215	517520	741522	491562	502831	420429	447278	562956	582280	549695
Gold (Primary)[#]	kg	2438	2084	2399	2194	1588	1564	1441	1323	1595	1648
Iron Ore	'000 t	212960	218553	207157	168582	136618	152183	129321	158108	194584	200955
Lead &Zinc Ore	t	6680698	7101872	7539999	8041881	8633411	9281807	9362659	10453038	11881238	12613866
Lead Conc.	t	133768	133921	147625	161854	184486	194426	197668	261857	268047	306399
Zinc Conc.	t	1224077	1279880	1427231	1414009	1492781	1490662	1489374	1473811	1484244	1539655
Manganese Ore	t	2789025	2491950	3056385	2411871	2342169	2626291	2369481	2166947	2395134	2589271
Silver	kg	105284	138780	148303	207144	374046	349774	327647	426443	460811	557691
Tin Conc.	kg	59778	59016	60643	48765	47774	34862	24685	13541	12121	16758

Decennial Mineral Production (Contd.)

ineral	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Non-Metallic Minerals											
Apatite	t	6415	5992	3846	3053	572	1300	930	110	-	-
Phosphorite	t	1803954	1605489	2097490	2259726	1941158	1453580	1607215	1571863	1124440	1534269
Asbestos	t	315	243	268	276	389	172	-	-	-	-
Diamond	ct	536	16891	11222	18490	31988	37517	36107	36044	36491	39699
Fluorite (Graded)	t	3176	105232	59954	5010	3092	2487	2946	2333	1175	1313
Fluorite (Conc.)	t	6814	-	-	-	-	-	-	-	-	-
Flint Stone	t	-	-	-	708	633	459	244	253	26	-
Garnet (Abrasive)	t	1151241	1580617	2126337	1717904	768248	483559	91394	82001	85413	158154
Graphite (R.O.M.)	t	117767	124625	115697	153339	134735	146390	116712	135528	122438	33558
Iolite	kg	-	758	4	-	-	-	-	-	-	-
Kyanite	t	4620	5495	5954	4064	1048	3679	6255	2901	3254	7818
Sillimanite	t	33702	33687	48784	59206	43736	67265	66273	69942	68131	81638
Limestone	'000 t	221573	232950	246336	262882	285030	280863	293273	307001	314669	338552
Limeshell	t	97856	62215	30410	33225	24044	18750	16353	10353	12344	10893

Decennial Mineral Production (Concld.)

Mineral	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Magnesite	t	252880	301070	235762	224104	224315	196940	285009	327663	299149	195033
Marl	t	4167452	5908226	4399379	4140577	4337009	3254486	2179488	2389707	2203700	1822514
Moulding Sand	t	-	-	-	30	3118	29963	6383	26042	27685	7097
Salt (Rock)	t	2011	1836	1200	-	-	-	-	-	-	47
Selenite	t	15224	14598	6736	13047	7577	531	207	3103	4328	469
Siliceous Earth	t	-	-	-	-	-	-	-	47386	77270	58875
Sulphur	t	269572	263124	236998	381146	449004	390325	464672	473322	560826	825173
Vermiculite	t	12647	11662	19234	10194	7947	11851	19336	23279	9042	6055
Wollastonite	t	111581	132385	183381	184445	145667	192712	186524	175348	166186	153049