

STATE REVIEWS



Indian Minerals Yearbook 2014

(Part- I)

53rd Edition

**STATE REVIEWS
(Arunachal Pradesh)**

(ADVANCE RELEASE)

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

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ARUNACHAL PRADESH

Mineral Resources

The important mineral resource of the State is **petroleum & natural gas** and its chief occurrence is reported in Ningru and Dam Duma areas. These hydrocarbon deposits are located in the Assam Arakan Fold Belt (AAFB) and Upper Assam basin in the State. The State also reports resources of **coal** in Namchick Namphuk and Miaobum Coalfields; **dolomite** in West Kameng district; **fuller's earth** in Tirap district; **graphite**

in Lohit, Upper Siang and Upper Subansiri districts; **limestone** in Dibang Valley, Lohit, Upper Siang and Upper Subansiri districts and **quartzite** in West Kameng district (Tables - 1 and 2).

Exploration & Development

Exploration carried out by GSI and other agency during the year 2013-14 is furnished in Table - 3. OIL continued their seismic survey for exploration of Petroleum & Natural gas during 2013-14. The details of exploration activities are furnished in Table - 4.

Table – 1 : Reserves/Resources of Minerals as on 1.4.2010 : Arunachal Pradesh

Mineral	Unit	Total Reserves (A)	Remaining resources			Total (B)	Total resources (A+B)
			Indicated STD332	Inferred STD333	Reconnaissance STD334		
Dolomite	'000 tonnes	-	204	77633	-	77837	77837
Fuller's earth	tonne	-	10700	20000000	-	20010700	20010700
Graphite	tonne	-	-	-	72758257	72758257	72758257
Limestone	'000 tonnes	-	49220	433575	-	482795	482795
Quartzite	'000 tonnes	-	-	5270	-	5270	5270

Figures rounded off.

Resources of petroleum crude and natural gas in the State are included in Assam and are not available separately.

Table – 2 : Reserves/Resources of Coal as on 1.4.2014: Arunachal Pradesh

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	31.23	40.11	18.89	90.23
Namchik - Namphuk	31.23	40.11	12.89	84.23
Miaobum	-	-	6.00	6.00

Source: Coal Directory of India, 2013-14.

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Table – 3 : Details of Exploration Activities in Arunachal Pradesh, 2013-14

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Limestone							
East Siang	Western limb of Siang antiform	1:12500	73	-	-	80	<p>Reconnaissance stage investigation (G-4) was carried out to delineate the economic potentiality of limestone/dolomitic limestone along the eastern continuity of western limb of Siang antiform. The rocks in the study area comprise purple/grey quartzites of the Miri Formation and limestone bands with intercalation of purple/pink shales/grey shales of Dalbuing Formation. Minor bands of limestone were observed within the quartzites of Miri Formation. The entire litho package of Dalbuing Formation has been divided into four types on the basis of lithological and associated character viz.</p> <p>(i) Crystalline limestone: Whitish in colour, less than 1 m in width and found near the contact of limestone with the intrusive bodies.</p> <p>(ii) Massive limestone: It occurs as light grey coloured, massive band, ranging in width from 5 m to about 15 m at places. In North West of Bodak, it has been traced continuously for about 200 m on the road-cut section.</p> <p>(iii) Limestone with shale intercalation: It constitutes the major part of the limestone mapped in the area. Grey to dark grey in colour, highly fractured and jointed which are filled by secondary calcite fillings. Grey to purple/pink shale intercalations constitute about 40% of the lithounit.</p> <p>(iv) Shale with thin limestone bands: Thin bands of purple/pink limestone, about 5 cm to 10 cm within the purple shale were mapped near the contact with the Siwaliks.</p> <p>Analytical results are awaited.</p>
West Siang	In and around Daba Gamlin antiform	1:12500	45	-	-	104	<p>Prospecting stage investigation (G-3) was carried out to assess the potentiality of limestone. The area exposes quartzite, phyllite, carbonaceous phyllite, with patches of garnetiferous mica schist, graphite schist and carbonate bands of Khetabari Formation of Bomdila Group. Five discontinuous dolomitic limestone bands having a general strike of NE-SW with moderate-steep northwesterly dip occur within carbonaceous phyllite. The outcrop width varies from 8 m-50 m over variable strike length of 50-300 m. Three carbonate caves, were observed, SW of Daba Gamlin. The</p>

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Table – 3 (Concl.d.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							openings vary from 4-6 m and cave is branched inside. The walls as well as floor bear dark grey fine grained dolomitic limestone. Developments of numerous stalactites and stalagmites have been observed within the cave. Analytical results are awaited.
PGE							
Anjaw, Lohit and Lower Dibang Valley		1:12500	42	-	-	31	Reconnaissance stage investigation (G-4) was carried out to search for PGE and gold mineralisation in mafic-ultramafic suites of Anjaw, Lohit and Lower Dibang valley districts (TS 91D/12&16 and 92A/5). In the study area, rocks of Tidding and Yang Sang Chu formations of Dibang Group are exposed. The Yang Sang Chu Formation consists of garnetiferous graphitic phyllite, schist and schistose amphibolite. The Tidding Formation, a low-grade volcano-sedimentary sequence conformably overlies the Yang Sang Chu Formation and comprises chlorite schist, crystalline limestone and serpentinites. Close to the contact with the limestone, small parallel-oriented shears zones have developed in the serpentinite body, which may be the possible sites for PGE mineralisation. Analytical results of 10 samples for PGE (less than 5 to 15 ppb) and 6 samples for gold (less than 50 ppb) show low value and are not encouraging. Analytical results of the serpentinite indicate that the Tidding serpentinite can be used as flux material in iron and steel industry. Chemical analysis of 50 BRS show value of SiO ₂ ranging from 37.73 to 42.5%, MgO from 39.34 to 44.77%, Al ₂ O ₃ from 0.17 to 1.06%, CaO from 0.04 to 1.49%, Total FeO from 4.05 to 7.82%, TiO ₂ from 0.04 to 1.25%, Na ₂ O from 0.02 to 5.82%, K ₂ O from 0.07 to 3.48%, P ₂ O ₅ from 0.05 to 0.54%, MnO from 0.01 to 0.18%.

Table – 4 : Exploration of Petroleum & Natural Gas in Arunachal Pradesh during 2013-14

Agency	Drilling					
	Seismic Survey		Exploratory		Development	
	2D(GLKM)	3D(SQKM)	Wells (No)	Meterage (km)	Wells (No)	Meterage (km)
OIL	233*	190*	-	-	-	-

* Including Assam.

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Production

The value of mineral production in Arunachal Pradesh at ₹ 252 crore in 2013-14 decreased by 21% as compared to that of the previous year. The value of the mineral production in the state was dominated by petroleum (crude) with a share of 80% and natural gas (ut.) 13% during 2013-14 (Table - 5).

The value of production of minor minerals was estimated at ₹ 16 crore for the year 2013-14.

There was only a single mine reported of coal during both the years.

The index of mineral production in Arunachal Pradesh (base 2004-05=100) was 152.1 in 2013-14 as compared to 165.8 in the previous year.

Table – 5: Mineral Production in Arunachal Pradesh, 2011-12 to 2013-14 (P)
(Excluding Atomic Minerals)

(Value in ₹ '000)

Mineral	Unit	2011-12			2012-13			2013-14 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		1		4195752	1		3186826	1		2521468
Coal	'000t	1	221	1464100	1	73	483600	1	-	-
Natural Gas (ut.)	m c m	-	40	287733	-	41	339075	-	41	339075
Petroleum(crude)	'000t	-	118	2143819	-	121	2199269	-	111	2017511
Minor Minerals@		-	-	300100	-	-	164882	-	-	164882

Note : The number of mines for petroleum (crude), natural gas (utilised) and minor minerals are not available.

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

