

INVESTMENT OPPORTUNITIES IN MINERAL SECTOR IN NAGALAND

Minerals and mineral-based industries form the backbone of present-day global economy and therefore, the exploration, exploitation and development of the mineral resources including groundwater have played the most vital role in the socio-economic development of all the developed and developing nations. In the context of human's constant desire to attain better quality of life, the exploration, exploitation and utilization of natural resources coupled with the progressive development in science and technology have become the major phenomena throughout the globe. Nagaland, a hilly tribal State nestled in the northeastern part of India is endowed with substantial mineral resources having potential for economic growth and development. The State offers a wide scope for building proper condition for inflow of technology and investments in mineral development and mining sector. Nagaland State offers possibilities for both domestic and foreign investments in the following potential areas for exploration and exploitation.

Government policy seeks to facilitate private investments in both exploration as well as in exploitation, on mutually agreed terms to ensure that the benefits accrued under such activities percolate to grass root level for improving the quality of life of local populace.

MINERAL SECTOR FOR INVESTMENT

1. Limestone

- The state has enormous limestone resource within the Naga Hills Ophiolite having potential for setting up limestone based industries in the State. Limestone comprises both of Chemical grade and Cement grade. The limestones of Nagaland are also metamorphosed making it viable for use in stone cutting and polishing plants.
- The Mimi-Pyakatsu block, Kiphire district has the largest limestone deposit based on which integrated mega limestone based industry is envisaged in the near future.
- The location of the deposits towards the international border of Myanmar makes it feasible for international trade opportunities.

2. Multi - metal Magnetite ore

- The magnetite of Nagaland occurring in the Naga Hills Ophiolite is unique for hosting Ni, Cr, Co, Ti, V and PGE elements besides Fe showing economically extractable content of 0.13% to 1.63 % Nickel, 0.09 % of Cobalt and 4 % of Chromium.
- Pilot scale smelting and Pre-feasibility studies on Phokphur multi-metal magnetite ore (covering an area >1sq.km) has been carried out in collaboration with National Metallurgical Laboratory, Jamshedpur.

3. Coal

- Coal is a major energy mineral available in the State having potential resource deposit for setting up thermal power plant in the State. Nagaland coals are non coking Tertiary coals, characterized by high Gross Calorific Value with >1% sulphur content.
- The following techno feasibility studies in Collaboration with CSIR-North East Institute of Science & Technology (NEIST) Jorhat, Assam for utilization of Nagaland Coals has been carried out
 - Manufacture of Coal briquettes/modules for use in both domestic and industrial sectors.
 - Techno-economic feasibility studies for Manufacture of Coke Breeze from Konya Coal, Tuensang district for use in VSK cement plants.
 - R&D studies on desulphurization and utilization of High sulphur Nagaland Coal for generation of Thermal Power Plant.
 - Manufacture of Soil conditioner from inferior coal and Coal waste to reclaim degraded soil caused due to dumping of high sulphur content overburden from Coal mining

4. Minor Minerals

- The State has huge deposit of sandstone which is a major building material besides its utility as dimension stone. Sandstone deposit is found in abundance in entire district of the State. Building material comprising of clay, gravel and sand occur in the foothill and valley areas of the State.
- Dimension and Decorative Stones of sandstone, limestone/marble, slate and granite are found which has the potential for setting up Decorative and Dimensional Stone units of small, medium and large capacities.

5. Petroleum and Natural Gas

- The Oil and Natural Gas Corporation Ltd (ONGCL) has carried out geological, limited geophysical and exploratory drilling in the *belt of Schuppen* which covers an area of approx. 4000 sq.kms in the foothill areas of the state bordering Assam, where a large number of oil prospects have already been identified.
- The *belt of Schuppen* has bright prospects for availability of both petroleum and natural Gas, which when adequately proved can be utilized for gas based power generation, compressed natural Gas (CNG) and other downstream industries.
- The ONGC have prognosticated a reserve of 600 million tonnes of Oil and Gas from this belt and have also established one oilfield known as Changpang oilfield. The *belt of Schuppen* and the adjoining areas of Nagaland is one of the most promising 'on land' oil prospective regions in the country.

- The oil and natural gas resources which have been only partly explored and established, offers bright prospects for setting up of refinery and other Petrochemical Industries of suitable capacity after such resources are established by extensive exploration by the Oil companies in the state.

6. R& D work for PGE, Base metals and Precious metals in Naga Hills Ophiolite

- The Naga Hills Ophiolite situated in the eastern part of Nagaland bordering Myanmar exposes a classic ophiolite sequence for a strike length of 90 km with width ranging from 1 to 5 km.
- The mafic-ultramafic complex within these ophiolites and the adjacent meta-sediments offer broad geological regime and specific target areas for possible PGE, base metals and Precious metals at various places.

MINERAL RESOURCE IN THE STATE AND PROSPECTS OF UTILIZATION

Mineral	District	Resource in million tonnes	Utilization
COAL	Mokokchung	413.87	Fuel and Power Generation
	Mon	82.59	
	Tuensang	33.80	
	Wokha	78.15	
	Longleng	13.28	
	Kohima	5.20	
	Dimapur	1.60	
Total		628.49	
LIMESTONE	Kiphire	397.838	Cement & chemical industry, building and ornamental/ decorative stones
	Phek	33.56	
Total		431.398	
Ni-Co-Cr BEARING MAGNETITE	Kiphire	13.31	Ferro-Nickel alloy
	Phek	5.38	
		18.69	
PETROLEUM & NATURAL GAS	Belt of Schuppen area stretching from West of Peren District to West of Mon District	600.00	Oil & Natural gas based industry
Total		600.00	

DECORATIVE & DIMENSION STONES (Sandstone, Limestone/Marble, Slate, Granite)	Kohima	61.24	Ornamental Stones, Floor tiles etc
	Mokokchung	14.10	
	Tuensang	29.25	
	Phek	84.32	
	Mon	8.40	
	Zunheboto	29.50	
	Peren	40.50	
	Longleng	1.30	
	Kiphire	5.40	
	Dimapur	8.80	
	Wokha	34.22	
Total		317.00	
BUILDING MATERIALS			
Clay (Low to medium grade)	Dimapur & JalukieValley areas	20.00	Bricks, sanitary wares, ceramics & pottery
	Intermediate hill regions of Wokha, Mokokchung, Kohima, Zunheboto, Phek and Mon District	Not estimated	
Sandstone	Entire district of the State	Not estimated	Building & construction materials
Sand , Gravel	Foothill and valley areas of the State	Not estimated	