

WELCOME TO PRESENTATION
ON
**ENVIRONMENTAL AND SOCIOLOGICAL IMPLICATIONS
& MINERALS AND OIL EXPLORATION IN NAGALAND**

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Location, Area and Physiography :

Nagaland, the homeland of the Naga people and the sixteenth State of the Indian Union is situated in the North-Eastern region of India. It lies between 25°6'N and 27°4' N latitude and 93°20' E and 95°13' E longitude. Nagaland is one of the smallest States of India lying in a strategic border of Myanmar. It covers an area of 16,575.88 Sq. Km. accounting for just about 0.52 per cent of the total geographical area of the country. The State is bounded by Assam in the West, Arunachal Pradesh in the North, Manipur in the South and Myanmar in the East.

Nagaland has a typical monsoon climate with variations from tropical to temperate conditions depending upon topography and seasons. In the plains and foothills, the climate is warmer while it is cool and temperate in the high hills. In general the State has cold winters and dry summers. The mean monthly temperature ranges from 5°C in winter to 42°C in summer. The annual rainfall varies between 200 to 270 Cm and the mean relative humidity varies from 70 to 90 per cent.

**RESPONSIBILITIES
OF
DIRECTORATE OF GEOLOGY AND MINING**

TO UNDERTAKE

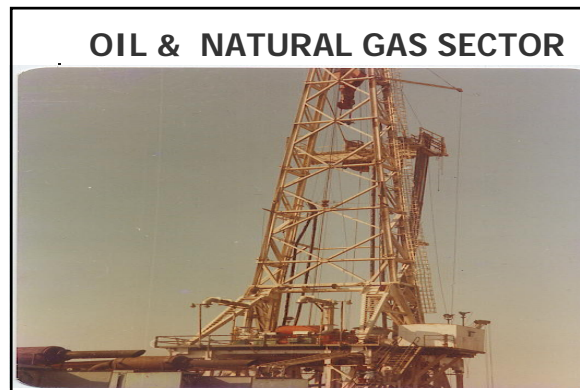
1. Search and exploration of the mineral resources.
2. Detailed proving operations of the mineral deposits for their utilization/exploitation.
3. Geohydrological studies for groundwater development both in alluvial and hilly areas, through construction of medium to deep tube wells for augmenting the water requirement.
4. Geoscientific and geotechnical studies.
5. Mineral management including petroleum and natural gas.

ULTIMATE GOAL

To bring a sustainable socio-economic upliftment of the people of the State through mineral development, with adequate safeguard for ecological balance.

**THE PRESENTATION SHALL BE UNDER THE
FOLLOWING 2 (two)
CHAPTERS/AREAS OF ACTIVITIES**

- (a). Petroleum and Natural Gas.
- (b). Minerals



**PROSPECTS AND STATUS OF EXPLORATION
& PRODUCTION ACTIVITIES (E&P).**

NAGALAND IN REFERENCE TO NE STATES:

- (1) 26 sedimentary basins of India covering 1.79 million sq. km. have been divided into 4 categories based on the degree of their prospectivity.
- (2) The Assam-Arakan basin comprising parts of Nagaland, Assam, Manipur, Mizoram and Tripura covering 60,000 sq. km. of areas has a prognosticated reserve of 1,860 million tonnes of O+OEG.
- (3) The Schuppen belt of Nagaland forming a part of Assam-Arakan Basin is one of the high priority 'on land' target areas for oil search.
- (4) The belt covers 4000 sq. km. with a projected hydrocarbon resource of 554 million tonnes of oil and oil equivalent gas.
- (5) Initial search for oil in Nagaland commenced in 1950s by the erstwhile Assam Oil Company.
- (6) Consorted efforts were made by ONGC since 1960s. During the last 30 years, 23 numbers of oil bearing structures have been deciphered based on geological and geophysical works by them.
- (7) Only one oil field was discovered in Changpang area in Wokha District in 1973 by ONGC.
- (8) The reservoirs are mostly below Naga thrust (including basements) at depths upto 4500 m. below the surface.



ONGC OIL FIELD AT CHANGPANG HILL

CHANGPANG OIL FIELD

ONGC was granted a Petroleum Exploration License (PEL) for Changpang area measuring 7.91 Sq. Km. by the State Govt. in 1973.

1. The first exploratory well in Changpang proved oil producing.
2. The PEL for Changpang expired in 1978 and ONGC applied for Mining Lease.
3. ONGC drilled 29 wells in Changpang area during 1973 to 1994.
4. Out of these, 21 wells were oil bearing and 2 wells were gas bearing.
5. ONGC has estimated an 'inplace' geological reserve of 17 million tonnes of oil with a recoverable reserve of approx. 250 tonnes per day.
6. ONGC has produced 10.22 lakh tonnes of crude oil from Changpang oil field during 1981 to 1994. The production rate was approx. 250 tonnes per day.
7. An amount of Rs.33.83 crores was paid by ONGC as royalty for the crude oil to the State Govt.
8. The Govt. of Nagaland withdrew the permission for 'trial production' (granted to them during 1981) in May, 1994 and thereafter ONGC withdrew its activities.

EXPLORATORY EFFORTS BY ONGC IN OTHER AREAS OF NAGALAND

1. The ONGC had drilled 6 nos. of exploratory oil wells in Dimapur district and Mokokchung district which were either found dry or with minor shows.
2. ONGC (at the time of suspension of work in April/May, 1994), were drilling at Hozukhe, Toshezu of Dimapur district and at Bhandari of Wokha district which could not reach the desired depth.
3. PEL for almost the entire Schuppen belt was granted to ONGC and subsequently 'Working permission' given on year to year basis which expired in 1996.

LEGAL IMPLICATIONS INVOLVED IN MINERAL AND OIL DEVELOPMENT

1. State of Nagaland, is provided with a special protection under Article 371(A) of the Constitution.
2. In 1979, the State Cabinet decided to seek legal advice and expert views in the matter of oil development in the background of Article-371(A) which was obtained.
3. The State enacted its own Act to develop and regulate its mineral resources including oil, titled 'Nagaland (Ownership and Transfer of Land and its Resources) Act, 1990 which was assented by the then Governor in 1993.
4. In 1994, a Cabinet Sub-Committee was constituted to go into the Constitutional and legal issues involved in implementing the State's Act of 1990 and also to create awareness amongst the people and various organizations.
5. Open debate was organized, attended by cross section of people at Kohima in May, 1994.
6. The Committee, however, could not submit its reports and recommendations due to political exigencies.
7. An amendment bill of the Principal Act was passed by the Assembly in 1995 which was referred to the President of India. The same has not been assented.
8. Further course of action is under consideration of the State Government.
9. The Hon'ble Chief Minister has also raised these issues in the Inter-State Council meeting held in Sept.2003 at Srinagar.
10. A Committee under the Inter-State Council has been constituted to look into this matter which has already held two meetings.

DOMESTIC AND FOREIGN OIL COMPANIES INTERESTED IN OIL DEVELOPMENT IN NAGALAND.

1. A number of domestic and foreign oil companies have shown interest to develop oil resources of Nagaland.
2. Few of these are from USA, Canada, France and UK.
3. The ONGC, Oil India Ltd., Indian Oil Corporation which are National Oil Companies are also keen to work in Nagaland and have won the bids.
4. The Representatives of these oil companies have met the Hon'ble Chief Minister, Sr. Govt. Officials both at Kohima and at elhi and submitted their approach papers.
5. All foreign Oil Companies have opined that since oil ventures are highly cost and risk intensive, the legal frame work under which they have to operate must be explicit and transparent.
6. Any legal dispute/difference with Govt. of India have to be resolved before the oil companies invest.
7. Some of these foreign Oil Companies have MOU/formed consortium with local entrepreneurs at Dimapur/Kohima and have approached the State Govt. for their participation in oil development.

INTERNATIONAL BIDDING OF NAGALAND OIL BLOCKS UNDER NELP BY GOVT. OF INDIA

1. The oil prospective areas of Nagaland covering *Schuppen Belt* have been carved into 6(six) oil blocks.
2. These have been awarded mostly to ONGC, Oil India Ltd., Assam Company Ltd. And Canaro Resource Ltd., Canada

SPECIAL MODALITIES/DISPENSATION FOR OIL DEVELOPMENT IN nAGALAND

1. During 1999-2002, the State Govt. approached the MOP & NG, GOI for evolving a special modality for oil development in the light of Article 371(A), State's own Act of 1990, Sarkaria Commission Recommendations, peculiar land owning system, Customary Tribal Laws etc.
2. The main demands of the State comprised of :
 - (a) Additional royalty.
 - (b) Oil development

LIST OF DECISIONS/ACTION AWAITED FROM GOVT.

1. Approval of the draft Agreement between (i) ONGC & State Govt. and (ii) between State Govt. and Changpang Landowners.
2. Signing of both the Agreements – Venue and date.
3. Disbursement of 2% of the past royalty to the Changpang Landowners.
4. Security arrangements for ONGC's operations by State Govt.
5. Issue of final go ahead signal to ONGC for recommendation of activities in Changpang area.

LIST OF ACTIONS TAKEN, SO FAR, BASED ON CABINET DECISIONS :

- i). Petroleum Mining Lease (PML) granted for Changpang (12 sq. km.) in Aug 2001.
- ii). Concurrence to New Exploration Licensing Policy (NELP) conveyed to GOI subject to additional payments in view of Article-371-A, in Aug. 2001.
- iii). State to share 2% of the royalty on oil with local inhabitants of oil bearing areas.
- iv). In addition, the State to also share add-on royalty with the local inhabitants of oil bearing areas @ 25%; with the entire people of the State through VDBs @ 50% and reserved fund for mineral development @ 25%.
- v). Geology and Mining Department declared as nodal department for oil development.
- vi). Oil operations in Nagaland declared as vital installations.
- vii). Directorate of Geology & Mining to undertake public awareness campaign.
- viii). Demands of hangpang Landowners including Naga Commission/Landowners commission finalized.
- ix). Draft Agreements between ONGC & State Govt. and between State Govt. (DGM) & Changpang Landowners finalized.

OIL EXPLORATIONS IN DISPUTED AREAS BETWEEN ASSAM AND NAGALAND.

- (i) ONGC activities in Khoraghat/Kholapani area in Rengma Reserve Forest since 1989, which is under 'Disputed Area Belt'
- (ii) PEL granted by Assam who are getting the royalty.
- (iii) Hon'ble Chief Minister, Nagaland has raised this issue again in Inter-State Council meeting held at Srinagar.
- (iv) Nagaland has suggested 50:50 sharing of royalty on petroleum from those areas between Nagaland and Assam till boundary dispute is resolved.
- (v) The matter is with Ministry of Home Affairs and MOP & NG, GOI.

MINERAL SECTOR

NAGALAND CAN BE DIVIDED INTO THREE ZONE/SEGMENTS :

- a). High Hill Range in the east – Approx. 1500 sq. km.
- b). Intermediate zone – Approx. 11,000 sq. km.
- c). Outer foot hill – Approx. 4,000 sq. km.

2. MULTI DISCIPLINARY APPROACH :

- i). Geology
- ii). Drilling
- iii). Chemical
- iv). Mining

3. OUR MINERAL RESOURCES :

So far established are :-

- a). High grade Limestone/Marble;
- b). Ni-Co-Cr. Bearing Magnetite;
- c). Coal;
- d). Petroleum and Natural Gas;
- e). Marble, Slate and other dimensional stones such as Spillite, Gabbro, Basalt, Serpentine, etc.

Cont.

Diversification :

- I) **Geotechnical Investigation :**
 - a). 5 projects completed for Micro-Hydel Power Project for Power Deptt. And and Deptt. Of Science & Technology.
 - b). 3 projects for Medical, PHE and PWD Deptt.
- II) **Landslide and Geo-environmental studies :**
So far completed 28 nos. of case studies.
- III) **DOVE MAP : Development of village economy by Mineral Appraisal Programme-Completed two targets areas.**
- IV) **Geo-Hydrological Investigation :-Ground water Development**
5. **COLLABORATIVE PROJECT :**
 - i). National Metallurgical Laboratory (NML)-Jamshedpur.
 - ii). Central Mine Planning & Design Institute Ltd. (CMPDI)
 - iii). Regional Research Laboratory – Jorhat.
 - iv). ONGC
 - v). I.B.M

Cont.

- A. **MINERALS CAN BE CLASSIFIED INTO METALS AND NON-METALS :**
- a. **Metals :** Mostly occur in the ophiolite belt-Ni-Co-Cr, Pb, Zn, Copper, noble metals. The area of operation include Pokhpur, Ziphu, Lachum, Reguri and Akhe.
- B. **Non-Metals :**
 - i). **Limestone/Marble :**
 - a). Wazeho : 1.0 million tonnes
 - b). Satuza : 6.0 "
 - c). Moke : 10.0 "
 - d). Nimi-Longpotrop: over 100 million tonnes.
 - ii). **Coal :**
 - a). Borjan : 6.5 million tonnes.
 - b). Konya : 1.0 "
 - c). Changki : 2.0 "
- C. **DIMENSIONAL AND DECORATIVE STONE :**
Phek, Tuensang, Wokha, Kohima, Zunheboto district.
- D. **SEMI-PRECIOUS/COLOURED STONE :** Quartz, Serpentine, Chalcedonics etc.

CONCLUSION

Environmental security threats in the State would be looked into seriously before mining in the State could commence. During the last three decades, many legislations have been enacted to regulate the mining industry to minimize environment damage. The State would adopt appropriate environmental policies to protect the environment from mining operations.

"ECO-FRIENDLY MINING"

"THANK YOU"