

ROYAL GOVERNMENT OF BHUTAN

MINERAL DEVELOPMENT POLICY 2011

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ACROONYMS

| | |
|-------|---|
| DGM | Department of Geology and Mines |
| DLG | Department of Local Governance |
| DoFPS | Department of Forest and Park Services |
| DoI | Department of Industry |
| EDP | Economic Development Policy |
| EIA | Environmental Impact Assessment |
| EMP | Environmental Management Plan |
| FMFS | Final Mine Feasibility Study |
| GNH | Gross National Happiness |
| MDA | Mineral Development Authority |
| MDP | Mineral Development Policy |
| MMMA | Mines and Minerals Management Act, 1995 |
| MMMR | Mines and Minerals Management Regulations, 2002 |
| MoEA | Ministry of Economic Affairs |
| MP | Mine plan |
| NEC | National Environment Commission |
| NLCS | National Land Commission Secretariat |
| RFB | Request for Bid |
| RGoB | Royal Government of Bhutan |

CHAPTER 1 INTRODUCTION

1.1 Rationale for Mineral Policy

Minerals are limited and non-renewable resource, and must be exploited prudently in the larger interest of the country. Over the years minerals and mineral based industries have made significant contributions to the economy and the national well being. The Economic Development Policy (EDP) 2010 envisages the mining sector to play an important role in supply of raw material for industries and construction materials for development projects.

While mineral exploitation brings about increased economic activity and development, it can have adverse social and environmental consequences, which must be adequately addressed and managed in the interest of well being of all the citizens of the country. A properly planned, efficiently regulated and professionally managed mineral industry can make a significant contribution to national development and achievement of GNH. The Policy seeks to establish the framework for managing the country's mineral resources and developing its mineral industry.

1.2 Vision

Create a vibrant mineral sector that contributes to the achievement of GNH.

1.3 Mission

Facilitate efficient, responsible and sustainable development of the country's mineral resources that contributes to the socio-economic development of the nation.

1.4 Objectives

The Mineral Development Policy shall have the following objectives:

- To develop the scarce mineral resources for optimum value addition so that maximum benefit accrues to the nation;
- To allow selective and cautious development of minerals for socio-economic development while ensuring environmental sustainability and inter-generational equity in the larger interest of the country;
- To ensure the availability of construction materials at an affordable price to all the citizens;
- To increasingly contribute to the national economic development by enhancing generation of revenue and employment;
- To promote human resource development and ensure that mineral development is carried out by technically qualified professionals;
- To promote investment in the mineral sector by technically and financially competent private sector;
- To develop an integrated mineral information system in the country.
- To ensure effective regulation, administration, management and monitoring of the mineral sector.

CHAPTER 2 THE MINERAL SECTOR

2.1 Overview

Out of the country's total geographical area of 38,394 square kilometers, about 33% has been geologically mapped in a scale of 1:50,000. In the course of geological mapping a host of metallic and industrial minerals have been discovered. The remaining 67% of the area is yet to be geologically mapped to explore for minerals. Table 1 provides the status of mineral occurrences in the country till date.

Table 1 Status of Mineral Resources in Bhutan as on

| Mineral | Location | Reserve (in million tones) and Grade |
|-------------------------------|--|--|
| Copper ore | Gongkhola in Black Mountain area, Zhemgang Dzongkhag | 2.5 inferred, with 1.5% Cu. |
| Lead-Zinc ore | In Genekha area, Thimphu Dzongkhag | 3.116 in Chakula – Proved 0.514 in Romegong Ri – Probable |
| Tungsten Ore | Dholpani and Bhurkhola , Gelephu Dungkhag | 0.45 estimated down to 30 m depth in Dholpani . |
| Coal | Deothang and Bangtar, S/Jhongkhar Dzongkhag | Reserve very tentative |
| Dolomite | All along the foothill of Southern Bhutan. | Very huge reserve. Proved reserve will be rendered by DGM as and when required. |
| Graphite | Khepchishi (above 3992 m altitude) Paro, Dzongkhag | 23.53 proved by drilling. |
| Gypsum | Khothakpa and Uri Chu, Pema Gatsel Dzongkhag | 56.45 proved (in Khothakpa); 13.60 estimated (in Uri Chu and Khar). Remaining reserve much less, mining going on |
| Limestone | Pagli – Titi , Gholtey area, Gaylegphu Dungkhag Kanamakra, Gaylegphu Dungkhag Korungri and Kerungri, S/Jhongkhar Dzongkhag | Reserve almost exhausted by PCAL Reserve being assessed Huge Reserve of high grade Limestone Huge reserve of cement grade limestone |
| Marble | Khanku (Paro Dzongkhag) In northern region of Bhutan such as, Haa Wangtsa, Chaylaila, Paro, Jemina Thimphu Sha Bhel Wangdiphodrang, Hasilo and Pangpeysa Paro and Bunakha, Chukha Dzongkhag | 12.44 proved. 29.59 Probable. Reserve not proven |
| Slate | Bhel (Bonsegeoma) and Kobja areas both in Wangdiphodrang Dzongkhag | 16 million cubic meters. A large portion is already extracted for roofing purposes in Bhutan. |
| Talc | All in foothill belts in SW Bhutan | Reserve not assessed properly, because the deposit is very erratic and patchy in nature |
| Ferro Silicon Grade Quartzite | Quartzite in Shumar Formation | Reserve not assessed systematically |

The mining sector has long been an important catalyst to the economic growth of the country in terms of revenue and employment generation. A host of minerals have been mined in the country till date. Table 2 provides the mineral production figures from 2005 till 2009. Apart from the direct revenues, there is also the spin off effect of the mining sector in the development of the associated industries and their contribution in terms of revenue and employment generation and other social benefits.

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Table 2 Mineral Production from 2005 to

| Mineral Type | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------------------------|-------|-------|-------|-------|-------|
| Dolomite (million MT) | 0.389 | 0.477 | 0.579 | 1.248 | 1.029 |
| Limestone (million MT) | 0.536 | 0.581 | 0.544 | 0.584 | 0.650 |
| Gypsum (million MT) | 0.151 | 0.204 | 0.189 | 0.248 | 0.300 |
| Coal (million MT) | 0.085 | 0.098 | 0.105 | 0.124 | 0.049 |
| Marble (ft ²) | 4,005 | 3,813 | 12071 | 12301 | 13074 |
| Slate (ft ²) | 2,909 | 5,873 | 78107 | 822 | 18998 |
| Quartzite (million MT) | 0.053 | 0.040 | 0.064 | 0.095 | 0.083 |
| Talc (million MT) | 0.043 | 0.054 | 0.062 | 0.056 | 0.064 |
| Iron Ore (million MT) | 0.006 | 0 | 0 | 0 | 0 |
| Shale (million MT) | 0.001 | 0.001 | 0 | 0 | 0 |
| Stones (million MT) | 0.147 | 0.232 | 0.389 | 0.409 | 0.512 |
| Granite Slabs (ft ²) | 9,436 | 8,311 | 14430 | 8227 | 19905 |

Table 3 Total Mineral Production and Direct Revenue Generation for the year 2009

| Mineral Type | Production (million MT unless specified) | Royalty and Mineral Rent (million Nu) | Surface Rent (million Nu.) | License Fee (million Nu) |
|---------------|--|---------------------------------------|----------------------------|--------------------------|
| Gypsum | 0.300 | 32.060 | 0.056 | 31.577 |
| Coal | 0.050 | 4.159 | 0.031 | 18.235 |
| Limestone | 0.650 | 29.980 | 0.467 | NA |
| Marble blocks | 31 m ³ | 0.003 | | NA |
| Dolomite | 1.030 | 51.45 | 0.111 | 27.300 |
| Talc | 0.064 | 7.082 | 0.058 | NA |
| Quartzite | 0.083 | 3.860 | 0.180 | NA |
| Granite slabs | 19905 ft ² | 0.011 | 0.391 | NA |
| Stones | 0.512 | 1.551 | | NA |
| Slate | 18,998 ft ² | 0.001 | | NA |
| Total | | 130.157 | 1.294 | 77.112 |

Major minerals currently mined are dolomite, limestone, gypsum, marble, coal, talc, quartzite and various types of construction stones. The scale of mining operation in terms of production ranges from 5000 metric tons to over a million metric tons annually. All the mines in the country are operated using opencast mining technique and the current land coverage by mining activities is 0.03 % of the total area of the country.

2.2 Legal/Regulatory Framework

Article 1 (12) of the Constitution states that “The rights over mineral resources, rivers, lakes and forests shall vest in the State and are the properties of the State, which shall be regulated by law”. Some of the existing laws, rules and regulations governing the mining sector in the country are listed below:

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- Mines and Minerals Management Act 1995
- Mines and Minerals Management Regulations 2002
- National Environment Protection Act 2007
- Environmental Assessment Act, 2000
- Regulation for the Environmental Clearance of Projects and Regulation on Strategic Environmental Assessment
- Waste Prevention and Management Act 2009
- Application for Environmental Clearance: Guidelines for Mines
- Water Act
- The Biodiversity Act of Bhutan, 2003
- Forest and Nature Conservation Act of Bhutan, 1995
- Forest and Nature Conservation Rules, 2006
- Labor and Employment Act of Bhutan 2007
- Land Act of Bhutan 2007
- Rules and Regulations for Lease of Government Reserved Forest Land and Government land
- The Local Governments' Act of Bhutan, 2007

The RGoB shall review and amend Mines and Minerals Management Act (MMMA) 1995 and Mines and Minerals Management Regulations (MMMR) 2002 to streamline issues in relation to management of mineral resources in line with this Policy.

CHAPTER 3 INSTITUTIONAL ARRANGEMENT

For a mountainous country, the conservation of the environment has not only been recognized as being vital in the guiding principles of the country's development goals, GNH, but has always been nurtured by the RGoB in its advancement towards progress over the years. On the other hand, mining activities which are also vital for economic and social development can cause environmental degradation and ecological imbalance if not monitored and controlled judiciously. The adverse social and environmental impacts of mineral extraction can be prevented or mitigated only with effective administration and monitoring of the mining sector, for which creation of an autonomous body with a specific mandate is found very essential at this juncture.

Therefore, in order to manage the mineral resources of the country in an effective manner the Mineral Development Authority shall be established as an autonomous body, while the Department of Geology & Mines under the Ministry of Economic Affairs shall remain as an apex body for the geological and mining sectors.

3.1 Department of Geology & Mines

The Department of Geology & Mines shall be responsible for:

- i. Formulation of mineral policies, legal framework, plans, programs, guidelines and standards.
- ii. Preparation of a long term master plan for mineral development.
- iii. Carrying out its mandated geo-scientific activities like geological mapping, mineral exploration and prospecting, engineering geology, glaciology, seismology etc.
- iv. Outsourcing of the geo-scientific activities to competent and technically qualified firms, either domestically or internationally, if required.
- v. Authorizing the issuance of prospecting licenses (PL) where deposits have not been assessed or proven earlier. The geological mapping and mineral prospecting studies shall extend to any area within the country irrespective of current land use or ownership unless restricted by the Royal Government in the national interest.
- vi. Maintenance of a national inventory of mineral resources and geo-scientific information.
- vii. Providing technical advice to the Royal Government on various issues, options, strategies and prospects related to mineral resources.
- viii. Allocation of mines/quarries.

3.2 Mineral Development Authority

The Mineral Development Authority (MDA):

- i. Shall be an independent and autonomous regulatory authority with perpetual succession.
- ii. Shall have an official seal and such seal may be changed, altered and made anew as the Authority deems fit.
- iii. May sue and be sued in its own name.
- iv. May acquire, hold and dispose of movable and immovable properties.

3.2.1 Structure of the Authority

- i. The authority shall consist of a chairperson, members not less than three, and a Chief Executive Officer, all of whom shall be appointed by the Minister of Economic Affairs on such terms and conditions as he may determine for a period not exceeding five years.
- ii. The Chief Executive Officer shall be the head of the secretariat and an ex-officio secretary to the Authority.
- iii. The authority members shall have representations from the Department of Geology & Mines (DGM), Department of Industries (DoI), National Environment Commission (NEC), Department of Forest and Park Services (DoFPS), National Land Commission Secretariat (NLCS) and Department of Local Governance (DLG).
- iv. No member of the Authority appointed by the Minister shall be eligible to serve more than two consecutive terms as chairperson or ordinary member of the Authority.
- v. The organogram of the MDA will consist of four departments, viz. 1) Mine Leasing, 2) Monitoring and Enforcement, 3) Mineral Information & Registry, and 4) Administration, Finance and Legal. The Chief Executive Officer may change the organogram of the MDA to suit changing times required for effective functioning based on approval of the Authority.
- vi. All employees of the authority other than the CEO shall be directly recruited based on such manpower strength as approved by the authority.
- vii. The MDA shall function under its own service rules.

3.2.2 Functions of the Authority

The functions of the Authority shall include, amongst others:

- i. Issuance of license for mines/quarries including prospecting license.
- ii. Enforcement of the provisions of the mines and minerals acts, rules and regulations.
- iii. Monitoring and evaluation.
- iv. Development of human resource capacity both within the authority and the private mining sector.
- v. Development of various schemes for effective management of mines.
- vi. Proposal of the revision of rates for different types of mineral levies.
- vii. Auctioning of the right to mine the minerals.
- viii. Formulation of guidelines and procedures for mining/quarrying activities in consultation with DGM.
- ix. Ensuring restoration of mine/quarry areas after expiry, surrender or termination or revoke of mining/quarrying leases.
- x. Such other functions and duties as imposed on it by the mining and minerals acts and regulations.
- xi. Preparation of technical reports, including mines restoration plans, for the mineral deposits, other than construction stones, which are to be allocated through auction. The MDA may outsource the preparation of the technical reports, if required.

3.2.3 Meeting, quorum and decisions of the Authority

- i. The Authority shall meet for the discharge of business at least four times in a year or upon a request in writing to the members by the Chairperson or the Chief Executive Officer.
- ii. The quorum for the meeting of the Authority shall be a simple majority.

- iii. The decisions of the meeting shall generally be based on consensus but where there are divided views; decisions shall be made by a majority vote by the members present. In case of tie, the chairperson shall have a casting vote.
- iv. All minutes of the meeting shall be submitted to the authority for confirmation and when so confirmed shall be signed by the Chairperson and the Member Secretary.
- v. A member of the Authority who is in any way directly or indirectly interested in a matter being considered at a meeting of the Authority or in which his spouse or relatives are interested in private capacity, shall disclose the nature of his interest to the meeting.
- vi. A member making a disclosure under subsection v shall not take part in any consideration or discussion of, or vote on any question relating to the matter. Such disclosure shall be recorded in the minutes of the meeting at which it is made.

3.2.4 Financing of the Authority

To ensure the autonomous functioning of the Mineral Development Authority and the development of national capacity in the mining sector, the Authority shall be financed from the collection of:

- i. License fees
- ii. Lease processing fees
- iii. Mineral rent
- iv. Penalties

Surplus collections shall be deposited in the Royal Government Revenue Account. In case of deficit in any year, the Royal Government will provide budgetary support to the Authority.

CHAPTER 4 HUMAN RESOURCE DEVELOPMENT

Professional capacity is the key condition for realizing the objectives of scientific mining and mineral conservation. To address the current shortage of professionals in mining and geology both in the regulatory side and the private sector, the RGoB shall:

- i. Provide more scholarships for these professions
- ii. Provide partial scholarship to students pursuing these studies privately, up to a maximum amount as determined by the competent authority.
- iii. Allow employment of expatriate professionals in the mines till local capacity is developed
- iv. Assist in further training of national staff for companies that are consistently or actively training nationals to replace expatriates.

Companies or businesses must regularize the above trainees after the first year of on the job training/apprenticeship.

CHAPTER 5 MINERAL CONSERVATION AND VALUE ADDITION

5.1 Mineral Conservation

Conservation of minerals shall be construed not in the restrictive sense of abstinence from consumption or preservation for use in the distant future but as a positive concept leading to augmentation of reserve base through improvement in mining methods, beneficiation, blending and utilization of low grade ore and rejects and recovery of associated minerals. The legal and institutional framework shall be strengthened so as to mandate zero-waste from mining as the ultimate goal.

5.2 Value Addition of Minerals

Minerals constitute one of the main resources for economic development of the nation. Proper management of these resources is critical. The advantages of adding value to minerals are manifold, such as increasing the national economy and revenue, reducing the need for imports, developing knowledge, improving the skill levels in the minerals industry and broadening the employment base. Therefore, export of minerals without prescribed value addition shall not be permitted. However, minerals such as low grade quartzite, rejects from the mines and minerals that do not have prospects for value addition shall be allowed to be exported in raw form. This shall however, be subject to prior verification and approval of the MDA and upon meeting the domestic demand.

Given that the level of processing and other parameters in determining the value addition differ from one mineral to another, the DGM and MDA shall assess the potential of the minerals for processing into value added products and specify the level of processing and value addition required for each mineral.

A Minimum value addition of 40% and Change in Tariff Classification at 6 digit level of the Harmonized Commodity Description and Coding System on a mineral product shall be necessary to qualify for export till detailed value addition criteria is developed. Value Addition Criteria shall be:

$$\frac{\text{FOB Product Price} - \text{Raw Material Cost}}{\text{FOB Product Price}} \times 100$$

While the RGoB shall emphasize and prioritize value addition of minerals before export, it shall allow the export of minerals in raw form for large-scale mines already auctioned within the limits of time as may have been agreed upon in the existing agreements after they fulfill domestic requirements.

CHAPTER 6 ENVIRONMENTAL & SOCIAL CONSIDERATIONS

Article 5.1 of the Constitution states that “Every Bhutanese is a trustee of the Kingdom’s natural resources and environment for the benefit of the present and future generations and it is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation of the rich biodiversity of Bhutan and prevention of all forms of ecological degradation including noise, visual and physical pollution through the adoption and support of environment friendly practices and policies”.

This Policy recognizes the importance of having a sound mineral development sector that protects the environmental integrity and socio-cultural values, while at the same time contributing significantly to the country’s economy. Mineral development shall be guided by the sustainable development and precautionary principles and consider the intergenerational equity in managing mineral resources.

The RGoB shall strengthen the enforcement of mining and environmental laws effectively so that in the long run the mining sector shall ensure minimal adverse impact on the environment, culture and spiritual heritage of Bhutan.

6.1 Environmental Protection & Scientific Mining

This shall be achieved through:

- i. Requiring a comprehensive EIA for any mineral development activities as per the environmental legislations of the country.
- ii. Ensuring that the different stages of mineral development, starting from exploration; development and production to restoration are based on sound, scientific and engineering principles so as to ensure environmental sustainability.
- iii. The need of a comprehensive Final Mine Feasibility Study (FMFS) report, properly designed mine plans (MP) and environment management plans (EMP) as fundamental requirement for operation of mines and quarries in the country, and the strict implementation of the same by the proponent.
- iv. Collection of environmental restoration bond as a guarantee to ensure reclamation and restoration at the time of mine/quarry closure or in the event the mine/quarry is abandoned before completion. The fund shall be managed by the MDA in consultation with the Ministry of Finance. The amount and the mode of collection shall be determined by the MDA.
- v. Collaboration with research institutions abroad to facilitate transfer of technology and capacity building.
- vi. The supervision and management of all mines and quarries by qualified professionals. The MDA shall prescribe minimum requirements for different types of mines and quarries.

6.2 Social and Community Considerations

Mineral development if not managed scientifically can cause irreparable adverse impact on the surrounding communities. At the same time it can also make significant contribution for the welfare of the local communities if managed properly. Therefore, the RGoB shall ensure community wellbeing through the following arrangements:

- i. Affected communities shall be identified during the process of public consultation as laid down in the Local Government Rules and Regulations.
- ii. EIA shall specify a clear guideline on the community issues.
- iii. Listed mining companies while floating their shares shall ensure that at least 10% of the shares are allocated to the affected community where the mines/quarries are located. In the event the local community do not have funds to pay for these shares, the mining company shall make the necessary arrangements with the financial institutions to pay for the shares and adjust through subsequent dividends.
- iv. All mining companies are required to contribute to a community development fund to be used specifically for drinking water schemes, water source protection, social forestry schemes and renovation of religious sites belonging to the community and other schemes as may be prioritized by the community. The fund shall be managed by a Tshogpa appointed by the affected communities under the supervision of the local government.
- v. The listed companies shall pay a sum of Nu. 3.00 per ton of materials dispatched to the community development fund. All other mines and quarries shall pay a sum of Nu. 5.00 per ton to the community development fund.
- vi. The local communities shall have access to road, health and educational facilities created by the mining projects.
- vii. Where possible, priority shall be given to the local affected community for employment.

CHAPTER 7 CATEGORIZATION OF MINERALS

For purposes of mine allocation, minerals shall be classified as follows:

7.1 Strategic Minerals

Strategic minerals shall be those minerals that have very high value, minerals that could have security implications, minerals that have wider implications on the economy of the country and minerals which are rare in the country. The DGM shall notify the list of strategic minerals. Development of strategic minerals shall remain the exclusive right of the RGoB.

7.2 Industrial Minerals

Industrial minerals shall be those minerals used as raw materials in industries. These include but not limited to minerals like limestone, dolomite, gypsum, quartzite, graphite, talc, marble, granite, coal and metallic minerals which are not classified within strategic minerals.

7.3 Construction Materials

Construction materials shall be sand, stones, rocks and other low grade minerals which are not suitable for further processing.

7.4 Review of Mineral Categories

The DGM, MoEA shall review the categorization of minerals from time to time and make changes as may be required.

CHAPTER 8 ALLOCATION OF MINES AND QUARRIES

The right over mineral resources shall rest with the RGoB. Allocation of mines shall only be made for the deposits proven by the DGM or by other agencies through the grant of prospecting license (PL). “Mines” shall refer to extraction of minerals whereas extraction of rocks for construction purposes shall be termed as “quarries”.

8.1 Mining & Quarrying Lease Tenure

To stimulate investments and to ensure better planning, operation and rehabilitation of the mineral development activities, it is essential to ensure reasonable lease periods. Therefore, lease tenure shall be up to 30 years with clarity on renewal conditions at the time of bidding.

All existing mines and quarries which have been based on direct allocation, renewal maybe only considered in the event they have become captive mines and on such terms and conditions as decided by the DGM/MDA. For existing auctioned mines, the auctions terms shall apply.

8.2 Allocation of Mines

Allocation of mines shall be made considering sustainability, competency, revenue generation, environmental conservation, and other long term objectives of the RGoB. Allocation of mines shall be as follows:

- i. The RGoB shall have the discretion to develop strategic minerals either by itself or through its agencies or through the private sector on its behalf.
- ii. Any mineral deposit proven by the RGoB/DGM shall be allocated through a bidding process. Standard guidelines for evaluating the bids shall be developed and disseminated.
- iii. Selection of the best proposal shall be carried out by a team of experts using a comprehensive set of criteria which shall be announced while inviting the bids, such as technical competence, professionalism, financial capacity, value addition, employment and revenue generation, environmental conservation, community benefits and others in line with the principles of GNH.
- iv. Where mineral deposits have not been proven by the RGoB, PL shall be issued by MDA based on a bidding process by the DGM. The eligibility criteria for bidding shall be specified in the Request for Bid (RFB). The PL holder shall be given the right to operate the mineral deposit as per the bid condition, if found feasible. If not found feasible, the PL holder shall not be refunded any expense incurred for undertaking the prospecting.
- v. The prefeasibility studies of the prospected mineral deposits shall be carried out by a multi-sectoral team comprising of officials from the relevant agencies.
- vi. For minerals such as talc and coal which occur in the form of erratic deposits (i.e. stringers, pockets, thin lenses and bands) and which are geologically difficult to be proven in the country, the DGM shall identify localised areas and study the feasibility of operating such deposits in a environmentally sound, economically feasible and socially acceptable manner. The allocation of mining rights for such deposits shall also follow the bidding process as in 8.2 (ii) and (iii). Such mineral deposits shall not be allocated on PL basis.

- vii. The selected applicant shall complete all the necessary formalities such as seeking clearances, preparation of EIA, FMFS report, EMP etc. prior to the signing of the mining lease agreement.
- viii. For the mineral deposits prospected by RGOB/DGM the selected applicant shall refund the cost of exploration to the MDA upon approval of the mining lease.
- ix. All allocated mines shall be required to obtain an operating license from the MDA.

8.3 Allocation of Stone Quarries

Given the importance of construction stones in the development of the country, it is vital to ensure an uninterrupted supply of such materials to the construction industry at reasonable price. This policy shall ascertain proper allocation of quarries throughout the regions and the DGM shall develop and maintain a stone quarry master plan for the whole country.

8.3.1 Categories of Quarries

Stone quarries shall be categorized as follows:

- i. Large quarries shall be those having an annual production capacity of 100,000 metric tonnes and above.
- ii. Medium quarries shall be those having an annual production capacity of 20,000 to 99,999 metric tonnes
- iii. Small quarries shall be those with annual production capacity below 20,000 metric tonnes.

8.3.2 General Requirements

The minimum requirements and the maximum lease tenures for the three categories of the quarries are illustrated in Table 4.

Table 4 Requirements and the lease tenure for the three categories of quarries

| Criteria | Large Quarries | Medium Quarries | Small Quarries |
|--------------------------------------|----------------|-----------------|----------------|
| 1. <u>Financial Capacity</u> | | | |
| a. Net worth (Nu.): | 4,000,000 | 1,000,000 | 500,000 |
| b. Credit rating (Nu.): | 10,000,000 | 5,000,000 | 1,000,000 |
| 2. <u>Human Resource</u> | | | |
| a. Graduate Engineer | | | |
| i. Mining | 1 | 1 | 1 (part time) |
| ii. Civil | 1 | 0 | 0 |
| b. Diploma Engineer | | | |
| i. Civil | 1 | 1 | 0 |
| ii. Mechanical | 1 | 0 | 0 |
| c. Certified foreman | 1 | 1 | 0 |
| d. Certified supervisor | 2 | 1 | 1 |
| e. Certified blaster | 2 | 1 | 1 (part time) |
| 3. <u>Equipment & Facilities</u> | | | |
| a. Excavators | 3 | 1 | 1 |
| b. Dumper | 5 | 2 | 1 |
| c. Survey equipment (total station) | 1 | 0 | 0 |
| 4. <u>Lease Tenure (Years)</u> | 30 | 10 | 5 |

8.3.3 Quarry allocation Procedure

The allocation procedures for the stone quarries shall be as follows:

- i. DGM shall identify core areas and carry out detailed exploration to assess the feasibility for quarries in terms of quality and quantity.
- ii. The prefeasibility studies of the prospected stone deposits shall be carried out by the multi-sectoral team.
- iii. Quarries identified for domestic supply shall be allocated through reverse auction, i.e. the winner shall be the bidder offering the lowest selling price.
- iv. Quarries shall also be auctioned for export market for which the bid conditions shall be specified by DGM at the time of auction.
- v. The successful bidder shall complete all the necessary formalities such as seeking clearances, preparation of EIA, FMFS report, EMP etc. prior to the signing of the quarrying lease agreement.
- vi. Terms and conditions for such leases shall be developed by the MDA and shall be based on the categories of the quarries.

8.3.4 Government and Community Project Quarries

- i. The DGM shall in the national interest, allocate quarries directly to government agencies, government projects and communities.
- ii. Allocation of quarries to government projects and communities shall be as captive mine for its time bound projects such as hydropower, road, and community activities such as schools, lhakhangs and other infrastructure projects. They shall not be allowed to supply the stones/aggregates to other consumers other than to the project for which they have been established.
- iii. Such quarries may also be allocated directly to the licensed project contractors as captive quarry on behalf of the project.
- iv. Where the exploration has been done by the DGM, the project applicant shall refund the cost of the exploration to the MDA.

8.3.5 Surface collection and Rural Stone Requirements

- i. Surface collection of sand and boulders, and riverbed collection of all types of stones shall be issued under permit system of the Department of Forest and Park Services (DoFPS).
- ii. For export of the sand, stones and minerals transport permit shall be issued by MDA only.
- iii. Minor extraction of stones for non-commercial and one time requirement in rural constructions shall be issued under permit system of the DoFPS, and such operations shall be closely supervised by Dzongkhag Forestry and Environment Officers.

8.3.6 National Resource Development Corporation Ltd

In view of the strategic importance of construction materials (sand and stone) and these natural resources are common heritage of people of Bhutan, the Royal government established the Natural Resources Development Corporation vide executive order PM/01/07/571 dated 7 November 2007. This was based on the Royal Command conveyed to the 87 session of the National Assembly. This order was further reinforced vide Executive Order C-2/2043 dated 10 May 2010 issued by the Royal Government. As such the NRDC has been mandated with the social responsibility of making these materials available and at affordable price.

CHAPTER 9 ROYALTY AND OTHER LEVIES ON MINERALS

Royalties, mineral rents, auction license fees and other applicable mineral levies shall be determined by the Ministry of Economic Affairs in consultation with other government agencies, the mining industry and the regional averages for such charges. The Policy empowers the Ministry of Economic Affairs to review and revise periodically the royalties, mineral rents, auction license fees and other mineral levies. Land lease rents, taxes and penalties shall be in accordance with applicable national laws.

To ensure the autonomous functioning of the MDA and the development of national capacity in the mining sector, the MDA shall be allowed to retain in full the mineral rents, auction license fees, lease processing fees and penalties to meet its establishment cost and operating expenses. Surplus shall be surrendered to the RGOB.

CHAPTER 10 INCENTIVE

To promote investments in the mineral industry the RGoB shall provide fiscal incentives wherever possible.

10.1 Incentives as per EDP 2010

All mining companies and firms shall be eligible for the general, employment and foreign exchange incentives as detailed in the EDP 2010.

10.2 Sector specific incentives

The EDP states that the Mineral Development Policy shall provide sector specific incentives for the mining sector.

- i. All capital goods and spares that reduce the need for expatriate labour shall be exempt from customs duty and sales tax.
- ii. All capital goods shall be allowed accelerated depreciation at double the prevailing rates.

10.3 Other incentives

MDA and DGM shall institute an annual best mining practice award for the mining company and an annual Best Mines Manager award system selected based on stipulated guidelines.