

# 1. INTRODUCTION

Mineral resources are finite and non-renewable asset of nature and plays an indispensable role in progress and development of human society. Minerals are vital raw material for the core sectors of the country. The industrial development of a country needs an uninterrupted supply of raw materials. Therefore, endowment of the mineral resources not only provides strength but also ensures sustainable supply required to keep the wheels of industries running. These resources are built by concerted efforts put in exploring the mineral bearing prospects. Since post independence Geological Survey of India, Mineral Exploration Corporation, State Directorates of Geology and Mining and exploration wings of various exploration agencies in public and private sectors took up and intensified exploration of various minerals. A number of new mineral bearing areas were discovered and studied in detail. Consequently, mining and mineral based industries registered significant growth over the the last 7 decades.

As a result, a need of systematic inventory of mineral resources in the country was realised to effectively keep track of the new discoveries and their exploitation. This endeavour was fulfilled by entrusting Indian Bureau of Mines the task of preparing and updating the mineral inventory. Since 1968 Indian Bureau of Mines has routinely undertaken this job at regular intervals.

Inventory of mineral changes as exploration/exploitation progresses and more and more data generate. Further, inventory of a mineral also revises with changes in technology as well as with changes in economic conditions, etc. that effect shifting in resources from one class to another. Therefore preparation & updation of mineral inventory is a gamut of all such activities related to a mineral deposit. The present inventory, updated as on 1.4.2020, covers 46 major minerals with over about 9,800 deposits, excluding the atomic and fuel minerals. The last updation was completed as on 01.04.2015 for 71 minerals. As per notification no S.O. 423 (E), dated 10.02.2015, the central government declared 31 minerals as minor minerals. Out of these 31 minor minerals, 25 covered in earlier inventory as on 01.04.2015. As a result, the data were collected for 46 major minerals covered for updation of NMI as on 01.04.2020 leaving aside minor minerals from the list of 71 minerals due to administrative and technical issues of the same. However, resources of one mineral viz. alexandrite has not been reported by exploration agencies in the country.

The inventory provides a comprehensive document covering various aspects of mineral deposits. For this purpose data is collected from agencies engaged in the exploration, development and exploitation activities. Thus, aspects like, location, infrastructure facilities, geology (both local & regional), exploration details, physico-chemical analysis, reserve/resource estimates, parameters of estimation, end-use grade, etc. are included in deposit wise detailed inventory.

As per UNFC, the resources are broadly categorised into 'reserves' and 'remaining resources'. These are the result

of three-dimensional approach of the activities consisting of geological assessment, feasibility assessment and economic viability. According to the norms of this system, economically mineable part of measured and/or indicated mineral resources have been placed under 'reserve' category. Those quantities which have not been found economically viable due to the present techno-economic, environmental, social, legal, etc. factors and also the quantities estimated based on only geological assessments have been placed under 'remaining resources' category. The reserves and resources are further categorised into eight standard terminologies with ten codes, based on the quantum of exploration, feasibility assessment and economic viability. A brief explanatory note on UNFC has been included in this publication.

The reserves/resources have further been classified based on end-use grades with regard to their reported use in the mineral based industry and chemical analysis of principal constituents as reported by exploration/exploitation agencies. The recommendations of the various Expert Groups and the Bureau of Indian Standards are also kept in view. Where grade wise break-up is not possible the reserves/resources are placed under mixed grade. In case of reserves/resources where the chemical analysis range too widely these are put under unclassified grade. In cases where the chemically analysed data is very scanty, these reserves/resources are considered as of not known grade.

The present overview of NMI includes first chapter of introduction, eight chapters of mineralwise write up in brief on characteristics and uses of minerals, basis of end use grade classification adopted and categorisation of reserves/resources along with terminologies and codes assigned to as per UNFC. It also includes the salient features of the inventory highlighting the significant changes in reserves/resources as on 1.4.2020 as compared to 1.4.2015 in Table 1 and 2 for each mineral. These tables give an idea about the changes in terms of increase or decrease of resources as per their lease status, grades and states. This is the fourth edition which includes mineral reserves/resources data upto district level of each major minerals.

The last chapter of this publication comprises of (i) UNFC system (concept & terminologies), (ii) mineral wise summary of reserves/resources as on 1.4.2020 (by terminologies & codes), (iii) mineral wise summary of reserves/resources as on 1.4.2020 (without codes & terminologies).

The lease status of non-executed auctioned blocks has been maintained as freehold in NMI database and will be shifted to suitable category after their execution in next NMI.

Inventory of minor minerals, not being in purview of IBM, hence not covered in this publication.

The intention of this exercise is to provide users a broad scenario of availability of mineral resources in the country.