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**PRACTICAL APPLICATION OF THE UNITED NATIONS INTERNATIONAL
FRAMEWORK CLASSIFICATION FOR RESERVES/RESOURCES**

**THE APPLICATION OF THE UNITED NATIONS MINERAL
RESOURCES/RESERVES CLASSIFICATION TO THE
INDONESIAN MINERAL AND SOLID FUELS INVENTORY CAMPAIGN**

(Submitted by the Government of Indonesia) */

1. INTRODUCTION

It is widely known from geological perspectives that Indonesia is one of the most preferable countries for expanding and promoting mining operations in the Asia Pacific region. During the last two decades, Indonesian industry development has been achieving significant progress, the peak progress was reached in the 1990s, indicated by the booming of some metallic mineral commodities such as gold, tin, copper and nickel, besides coal as solid fuel. Unfortunately since the last two years, this performance has been declining and has received much unfavourable publicity due to the monetary, economic and political crises.

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It is worth mentioning that up to mid October 1999 some of the foreign mining companies postponed their exploration activities or slowed down their production target. Resurgence of mining industry in Indonesia will hopefully come soon as a democratic governance has been successfully established. It is expected to bring about a conducive opportunity for economic development, especially in anticipation of free trade and investment in Asia Pacific (APEC-2020) and in Asian countries (AFTA-2003).

Anticipating the trend of increasing demand of geological and mineral resources data in the coming new millennium, the Indonesian Directorate General of Geology and Mineral Resources (DGGMR) as a government institution is currently developing Indonesian Digital Geological Information System (IDGIS). The objective is to be able to provide quick, accurate and easily manageable information to domestic as well as international users. Such information is also considered to be a powerful tool for supervising and controlling exploration activities.

To achieve successful national mining industry development, the Government of Indonesia has assigned DGGMR to establish and carry out an exploration monitoring system. Such a system has been recently implemented. In line with this activity, DGGMR has also introduced a standard exploration report which may facilitate the exploration companies describing their investigation results. For DGGMR, it also simplifies its report evaluation task. The exploration monitoring system will also help enrich and up-date the national mineral database. It is worth noting that the system requires a standard mineral resource and reserve classification. An internationally standardized classification is therefore urgently required to facilitate operation of the system.

The United Nations International Framework for Classification of Mineral and Solid Fuels Resources / Reserves (UNFC) has now been adopted by the Government of Indonesia. It will be very useful not only for the exploration monitoring system, but also for managing national mineral assets, promoting national mineral resources for trading and investment, etc. Actual application of UNFC, however, has faced some difficulties. This is mainly due to the fact that some national mining regulations are not compatible with each other, and such a problem has created difficulties in using UNFC. The DGGMR has accordingly proposed to the Indonesian Government to refine those improper regulations.

2. INDONESIAN MINERAL AND SOLID FUELS RESOURCES/RESERVES CLASSIFICATION SYSTEM

The history of the Indonesian mining industry dates back from centuries ago, when Chinese and Indian culture entered this region. Scientific mineral exploration and mining operations which were introduced by the Europeans, particularly the Dutch, in the late 1880s, resulted in many ore deposit discoveries and productive mining operations. The industry has grown continuously, and it is now becoming one of the most important components in the Indonesian economy. To strengthen the performance of the industry, the government has currently standardized its mineral resources and reserves classification system, whereas previously a number of classification systems were in use, which has proved to cause problems.

2.1. THE NATIONAL STANDARD

Following the coal and gold boom in the 1990s, which led to the unfortunate Busang Scandal in 1995, the Government of Indonesia has taken into consideration the importance of a standard on national mineral resources and reserve classification system. Accordingly, the Government, through the Ministry of Mines and Energy, urged the National Standard Board to establish a national standard for evaluation of mineral resources and reserves purposes. The DGGMR was subsequently authorized to initiate the preparation of a draft in 1996 and established a national standardization committee consisting of a number of capable persons, mostly exploration geologists and mining engineers from various organizations.

After evaluating the available system used by different organizations and reviewing the UNFC, the committee agreed to release the national standard in 1998 numbered as SNI 13-4726-1998 ICS 73020. This standard is actually based on the UNFC, but with some modifications (Suryantoro, 1998).

2.2. THE APPLICATION OF UNFC

The UNFC was promoted formally to the Asia Pacific Region jointly by UN/ECE and ESCAP at a seminar in October 1998 in Bangkok. Following up this seminar, at the beginning of 1999, the UNFC task force in cooperation with DGGMR conducted a meeting which was attended by various people from the Indonesian mining community, to discuss in great detail the UNFC, including practical use of such a classification in Indonesia. This meeting resulted in a better understanding for the Indonesian mining community concerning the advantages of the UNFC, and suggested that it may help to speed up the development of the national mining sector.

Subsequently, there were several follow up national meetings which aimed at implementing the UNFC. All these meetings concluded that the UNFC is indeed useful and applicable in Indonesia. As the coordinator of the national geological standardization committee, the DGGMR subsequently proposed to the National Standard Board to amend the former national standard (SNI 13-4726-1998 ICS 73020) and to fully adopt the UNFC.

3. EXPLORATION MONITORING SYSTEM AND DEVELOPMENT OF INDONESIAN GEOLOGICAL INFORMATION SYSTEM

Two topics are considered relevant in promoting the application of UNCF in Indonesia. The first is the exploration monitoring system which was recently introduced by the Government of Indonesia, and is now part of the DGGMR's task. The second is the development of the Indonesian Geological Information System, which is now becoming an important activity in the DGGMR.

3.1. EXPLORATION MONITORING SYSTEM

Although DGGMR is engaged with various geological responsibilities (such as geological mapping, groundwater survey, geotechnical investigation, geological hazard mitigation, mineral resource survey), the function of supporting the development of the national mining industry is considered as an important mission. During the last 30 years there have been intensive exploration activities in Indonesia, which have led to significant discoveries of economical mineral deposits in this country. To maintain that the exploration activities remain successful, the Government of Indonesia has recently introduced an exploration monitoring system. The DGGMR has been appointed by the government as the executor of the system.

The system is not intended to verify quantitative interpretation of exploration results, but it is mainly aimed at detecting any violation of the contract / mining permits by the holders. Basically, the system is carried out through evaluation of exploration report, but may be extended to field observation, if serious violation is suspected. Accordingly, the DGGMR has currently introduced a standard exploration report to be applied in exploration activities in Indonesia. This reporting procedure also includes that the UNFC system be applied in describing any mineral resource and reserves status discovered

3.2. DEVELOPMENT OF INDONESIAN GEOLOGICAL INFORMATION SYSTEM

During the last 30 years, there have been voluminous data collected by DGGMR. A proper management of data is therefore highly demanded to optimize their use for various purposes, in particular for promoting national mineral resource development. During the last five years, DGGMR has been developing Indonesian Digital Geological Information (IDG), basing it on Geographic Information System. Numerous geological and mineral resource maps with accompanying database have now been transformed into digital format. Some of them are already available on internet (website:[http:// www.dmr.dpe.go.id](http://www.dmr.dpe.go.id) and <http://www.grdc.dpe.go.id>).

It is quite obvious that the development of IDG is anticipated to become a vital task in the near future, as it may enhance DGGMR capability, particularly in providing fast and accurate, and easily manipulated geological and exploration data for users around the world. The system is planned to incorporate the use of UNFC in describing mineral resource and reserve status.

4. SOME HANDICAPS IN APPLYING THE UNFC IN INDONESIA

Generally, the UNFC is undoubtedly a proper system for classifying mineral and solid fuel resources and reserves. However, there are a number of difficulties in applying such a system in Indonesia. This is caused mainly by the prevailing Indonesian regulations that partly do not fit with the UNFC. Some examples may be given as follows. There is a letter of approval namely Preliminary Survey Letter (PSL), given to companies by the Government. Basically, the PSL is given to candidates / applicants of Contract of Work (CoW) for only one year or during standby time, before signing of agreement, just for identifying the prospect of the survey area.

Logically, this letter of approval will only enable the company to have preliminary resource estimation, namely (following UNFC): “reconnaissance resource”. Some of the companies, however, have reached the detailed exploration stage, and reported the late stage of reserve estimation. The Busang Scandal in 1995, concerning manipulation of gold reserve data, actually belongs to this category, where the operating company was an PSL holder. However, it can not be denied that, in fact, most candidates / applicants of mining contractors have extended their activities from PSL scope of work to the “preliminary exploration or exploration” rather than “preliminary survey or reconnaissance”.

The CoW system was initiated in the early 1970s, and it was always updated periodically, to adapt to the prevailing business climate, aiming at attracting mining investors. However, it has not met the optimal requirement in developing the national mining industry. In addition, it is also not yet compatible with the UNFC. This is particularly true concerning the stage of investigations used in these two systems. The UNFC divides the stage of geological investigation into 4 four steps: reconnaissance, prospecting, general exploration, and detailed exploration, while the CoW system has only two stages of activities: general investigation and exploration. Accordingly, in evaluating exploration reports, adjustment has to be made by DGGMR, to make these two systems compatible.

Another difficulty in applying UNFC is related to industrial mineral commodities. Based on the Basic Mining Law No.11/1967 and Government Regulation No. 27/1980 concerning mineral classification, all mineral industries including construction materials such as rock, gravel, sand and pavement materials are classified as “C-group” or non vital and non strategic minerals. Management for these minerals is different from that of “A” and “B” groups, or vital and strategic groups (hydrocarbon, metallic minerals and coal). Mining authorizations for these commodities are given to the companies without requiring specific investigation stages, such as applied in the vital and strategic commodities. A similar condition is also applied to very small scale mines of vital and strategic minerals that can be mined by using either cooperative bodies or individuals and groups of local people. Consequently, reporting of resources and reserves of these typical mines is not applicable to the stage of geological study (G axis), Feasibility study (F axis) and economic value (E axis) of the UNFC.

All the above-mentioned handicaps are actually associated with the unsuitability of Basic Mining Law No 11/1967, and its related regulations (such as CoW and SIPP), which are now being re-evaluated and planned for revision. It may be worth to mention that the idea of revising such regulations is relevant to the reform spirit that is now taking place in Indonesia, as a result of serious economic and political crises during the last two years.

5. CONCLUDING REMARKS

Geologically, Indonesia is undoubtedly one of the most preferable countries for expanding or promoting mining investment. Several requirements consequently have to be met to bring this geological potential to a real advantage for the benefit of the country. During the last 30 years a number of procedures and regulations have been issued and updated, to adapt either to national or

international prevailing conditions to attract investors, aimed at increasing the contribution of the mining sector to the national economy.

Indonesia has experienced an intensive mineral and energy resources exploration during the last 30 years, and the peak of this activity took place from the 1980s until the mid 1990s. There was a sudden decrease due to the unfortunate Busang Scandal in 1995, and followed by economic and political crises from 1997 until now. In responding to the Busang Case, the Government of Indonesia has subsequently authorized the DGGMR to standardize the national mineral resource and reserve classification, and at the same time to carry out the exploration monitoring system to avoid recurrence of such a scandal. The national standard for classifying mineral and solid fuels resources and reserves has now been established by adopting the UNFC.

The application of UNFC has been initiated by the DGGMR, by conducting national minerals and solid fuels inventory campaign, and through the exploration monitoring system. Although works are progressing, a number of difficulties are encountered in applying the UNFC system, due to the existing mining regulations that are not compatible with this system. Certain adjustment is made accordingly by DGGMR to overcome such a problem. It is also important to admit that most the Indonesian mining regulations are felt by national mining communities to be out of date, and they need to be refined. As part of national reform policy, the Government of Indonesia has responded to this situation and has made plans to improve the existing regulations, to fit with the related procedures and regulations, including their adaptation to global conditions. The application of the UNFC will certainly be much more effective once these policy measures have taken place.

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