

INDONESIAN MINING JOURNAL

ISSN 0854 - 9931

Volume 15, No. 2, June 2012

Abstract Index

Yunianto, Bambang (R&D Centre for Mineral and Coal Technology)
Managing the Problems of Artisanal and Small-Scale Gold Mining in Sekotong Area, West Lombok
IMJ, Vol. 15, No. 2, June 2012,
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Artisanal and small-scale mining of gold at Sekotong area, West Lombok is conducted illegally. This gold mining is one of the examples of the mining in this country that retains the issue root of social, economic and cultural community. This paper tries to assess the issue and its solution based on the survey result of the current issues team from the R&D Centre of Mineral and Coal Technology.

Based on the assessment relating to the policy of regional spatial plan, the gold potential in the area should be allocated partly for the artisanal and small-scale mining (WPR) in accordance with Law Number 4 Year 2009. In the earlier growth, the mining needs guidance, education and training in either capital aspect, business or mining technique. That is why, the role of the regional government is absolutely required.

Keywords: management, artisanal and small-scale mining, gold, regional spatial plan

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Study of Batch Scale-Up Bentonite Activation Using Sulfuric Acid
IMJ, Vol. 15, No. 2, June 2012,
P. 70 - 78

As a commodity for industrial applications, bentonite is needed in a large number of tonnages. Indonesia retains about 6 hundred million tons of bentonite resources, but its quality does not yet satisfy industrial specification. Most Indonesian bentonite is calcium-bentonite type. Therefore, it is necessary to activate the material to enhance its absorption ability for decolorizing crude palm oil in cooking oil industries. Research was aimed to get the optimal bleaching power in order to decolorize the crude palm oil effectively. The batch scale bentonite activation used raw material from Sarimanggu, Tasikmalaya district, West Java. Since 40 %-solid gave a better average bleaching power value than that of 20 %, the activation was then focused at seeking the best condition with regards to the activation time (hour) and reagent dosages (sulfuric acid). The batch up scale of this research referred to the use of a 100-kg bentonite as the feed. The feed size was -10 mesh. The use of

sulfuric acid was 2.5 to 20 % (equivalent to 0.13 to 1.02 N) for 20 % solid and 2.5 to 15 % (equivalent to 0.34 to 2.04 N) for 40 % solid. A series of activation times was 1, 2, 3, 4, and 5 hours. It started when sulfuric acid has been depleted. Sampling was completed for each hour when a sample was neutralized until pH = 7. The sample was dried and the rest of bentonite slurry was flowed into a dilution tank to be neutralized using water. Condition of 1-hour activation and 7.5 %-sulfuric acid (equivalent to 1.02 N) provided the best bleaching power value (88 %).

Keywords: batch scale-up, bentonite, activation, bleaching power

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Several Evaluation and Analytical Indicators of Regional Autonomy Implementation Impacts in Indonesia: Energy and Mineral Resource Sector Development
IMJ, Vol. 15, No. 2, June 2012,
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In general, the example of case study of the energy and mining company such as PT Bukit Asam (Tbk) in South Sumatera Province and PT INCO (Tbk) in South Sulawesi Province has positive impact to the regional economy in terms of the community development and economic productivity.

Coordination between central and regional governments should set up grand strategy of increasing their intensive exploration program to identify the distribution, locality, quality and quantity of their energy and mineral resources in every region to develop its potentials and its mineral base downstream industries so instrumental to development in the near future, especially if they have resource endowments having optimal added value and positive terms of trade (TOT) or TOT greater than 1.

In overall, it is indicated that the energy and mineral resources (EMR) sector could be used as one of among the catalysts to achieve interregional convergence through "cross fertilization" toward the national Gross Domestic Product (GDP) per capita index. All in one purpose is to set up of creating job and income toward a welfare society.

Keywords: the role of energy and mining company, prime mover, productivity, regional development, community development program, grand strategy

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A Proposed Method to Evaluate Country's Energy Utilization Efficiency
IMJ, Vol. 15, No. 2, June 2012,
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The threat of global warming should be addressed by increasing energy efficiency and reducing energy consumption since the green house gas mainly comes from combustion of fossil fuel in energy sector. Unfortunately, the conventional energy efficiency indicator in national level such as energy consumption per capita (ECPC), energy intensity (energy consumption: gross domestic product (GDP)) and energy elasticity frequently shows a contradiction results. Energy consumption depends on both number of populations and GDP. Therefore, the energy efficiency indicator should also consider both parameters. The objective of this study is to develop a new energy efficiency indicator using both GDP and energy consumption per capita as parameters. In this study, a new energy efficiency indicator namely A/R energy is proposed. A/R energy (addition or reduction of energy) is calculated by subtracting the value of best practice ECPC with the value of actual ECPC. The value of best practice ECPC was derived from an equation correlated between ECPC and Gross Domestic Product (GDP) per capita. Using the new indicator, it is revealed that some country with low ECPC in Africa, Asia and South America should increase their ECPC while all the developed country should reduce their ECPC. The best practice correlation between best practice ECPC and GDP per capita was also used to evaluate energy projection of Indonesia. Indonesia energy projection has been developed by IEA, Green Peace and Indonesian Government. Considering GDP and population growth ECPC, it is concluded that Indonesia energy projection

developed by IEA is the most realistic, efficient but achievable.

Keywords: energy efficiency indicator, best practice energy consumption, energy projection, energy elasticity

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(R&D Centre for Mineral and Coal Technology)
Susceptibility to Spontaneous Combustion of Some Indonesian Coals
IMJ, Vol. 15, No. 2, June 2012,
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Eight Indonesian coal samples of different moisture contents obtained from the various coalfields were used to study spontaneous combustion characteristics by differential thermal analysis (DTA) and crossing point temperature (CPT). Results indicate that there is no direct correlation between the spontaneous combustion test data and the individual properties of the coal samples by both DTA and CPT test methods; in this study, a preliminary conclusion can be drawn on the coal moisture content effect on spontaneous combustion. Higher moisture content coals are more susceptible to spontaneous combustion than that of lower moisture content coals. It also can be stated that the susceptibility of coal to spontaneous combustion is basically a complex. Clearly more tests are required to investigate the effect of coal properties in more detail from other Indonesian coals that have various types and ranks.

Keywords: spontaneous combustion, moisture content, differential thermal analysis, crossing point temperature