



# **Social Governance and Production Transformation Management System in Mining Industry in Indonesia: Toward a Locally Accomodative Energy Policy**

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## **ABSTRACT**

Policies in the energy and mining sectors have been directed solely to massive exploitation by multinational energy companies, solely aimed at increasing economic activity and its contribution to GDP. This liberal energy policy has a real impact on marginalization and the absence of recognition of rights to indigenous groups and surrounding communities over ownership and the possibility of involvement in the mining production process. Although the orientation of liberalism in the energy sector policy is possible because of the huge amount of capital needed to start exploration of a mine, more serious efforts in shifting the paradigm of energy policy to accommodate the interests of local people need to be developed by looking for empirical examples that occur in the field. This paper aims to analyze the legal basis for a paradigm shift in energy policy, with the empirical study in a coal mining in West Sumatra that has been active since Dutch rule in Indonesia. This study took a field study in a coal mine in Sawahlunto, and found that ownership is possible along with the declining market value of a mine when it is run by a large company. Some legal considerations such as the recognition of community land rights, and the transformation of the production process from mechanical to manual are considered as accommodative measures of energy policy to enable people to benefit directly from the wealth of natural resources in their region. The results highlight the need to an accommodative legal policy that considers the socio-cultural aspects of the local community.

**Keywords:** Energy Policy, Social Governance, Production System, Land Right, Coal Mine

**JEL Classifications:** Q4, Q48

## **1. INTRODUCTION**

The mining and energy industry is one of the major industrial sectors and has a broad impact on important social, environmental, economic, policy and political fields (Omer, 2008; Sihombing, 2018; Nazarova et al., 2017; Teleuyev et al., 2016). The energy and mining industry is usually carried out by multinational companies that have adequate capacity and resources to conduct exploration and exploitation. Usually, mining and energy exploration such as petroleum will require a very wide area, and sometimes in remote areas that will deal with indigenous people who already have their own cultural systems and attitudes. Here, energy policy is not merely understood as an effort to increase the economic

value of a mining area that enables it to be explored and make multinational energy companies interested in doing so, but also leads to the dimension of community social and accommodation rights for residents around the mine to participate and enjoy these resources, and their rights to existing resources are recognized. In many cases, exploitation and exploitation of mining and energy resources has led to many tensions and conflicts between the state, energy companies and the community (Pearson, 2013; Ali, 2009). Often, this exploitation also creates a sense of dissatisfaction, resentment, and resistance by the surrounding community because they feel removed and not accommodated their rights. This mining-based conflicts need to be socially mediated and resolved (Andrew, 2003). In Indonesia, several important cases

such as gold and copper ore mining in Freeport, Papua and oil and gas exploitation in Aceh have led to armed rebellions by certain groups who are dissatisfied with the existence of such activities in their territory (Tadjoeddin et al., 2003). Before the Law of the Republic of Indonesia Number 4 of 2009 concerning Mineral and Coal Mining was issued, coal mining had been established and regulated according to the agreement between concession holders and the community.

The existence of this kind of context, which is often found in mining activities, makes the direction of energy and mining policies not solely aimed at increasing the national economic value of resource use, but also focuses on efforts to accommodate local interests in exploration, production and community management (de Melo, 2017), because its activities undeniably affected the local community lives and their environment (Kitula, 2006; Howitt, 1991; Garcia and Zerda, 2016). Such an orientation will enable the community to be actively involved in mining production, and make mining activities more socially sustainable and have a longer-term impact. Unfortunately, previous studies in the field of energy policy and economics were still limited to increasing economic value (for instance, see. Mielnik and Goldemberg, 2002; Kraft and Kraft, 1978; Pao and Tsai, 2011; Erdal et al., 2008; Gbatu et al., 2017; Guliyev, 2017), and paid little attention to the possibility of shifting orientation to social value-based mining and energy sector. Previous studies have more closely linked corporate social responsibility as a form of corporate awareness to contribute to the social and economic development of the surrounding community (Jenkins and Yakovleva, 2006; Kapelus, 2002; Kurniawan, 2017; Hamann and Kapelus, 2004; Yakovleva, 2017; Sariannidis et al., 2016). However, it should be noted that the consideration of CSR as a form of corporate service is a one-way perspective from the company side, and does not amend the interests of the local community.

**Table 1: Sawah Lunto coal production 1942-2016**

Year	Production	Year	Production	Year	Production
1942	301,221	1967	66,487	1992	884,467.94
1943	228,724	1968	68,853	1993	1,026,068.46
1944	92,878	1969	69,282	1994	1,059,138.24
1945	75,780	1970	77,285	1995	1,201,846.11
1946	50,324	1971	89,730	1996	1,102,905.45
1947	49,728	1972	87,970	1997	1,107,561.53
1948	40,947	1973	81,840	1998	806,616.89
1949	24,535	1974	78,804	1999	1,091,346.80
1950	56,386	1975	76,094	2000	736,738.31
1951	48,870	1976	60,151	2001	560,894.67
1952	67,018	1977	81,020	2002	357,900.14
1953	59,815	1978	87,115	2003	7,676.44
1954	78,622	1979	92,318	2004	18,607.58
1955	89,954	1980	142,829	2005	14,509.78
1956	75,318	1981	241,829	2006	2,346.11
1957	90,912	1982	302,571	2007	964.55
1958	59,357	1983	325,662	2008	212,519.96
1959	37,791	1984	583,580	2009	1,77.39
1960	77,606	1985	770,751.88	2010	5,198.31
1961	103,709	1986	710,149.25	2011	1,882.59
1962	89,911	1987	506,176.75	2012	0
1963	110,037	1988	558,807.18	2013	9,127.21
1964	97,202	1989	610,390.61	2014	9,067.64
1965	91,756	1990	650,589.49	2015	21,118.85
1966	100,501	1991	517,229	2016	997.10

This study seeks to explore social governance and production management system of coal mining in Indonesia. This study takes the case of mining effectiveness in Sawahlunto, West Sumatra, Indonesia. Based on the coal production data in Sawahlunto, it appears that since 2017 the production has stopped, but the local mining activities by the community have emerged (Saptomo, 2018). This portrayal was important to take why it stopped but local mining emerged. In addition, the legal relationship between basic legal contracts with the legal basis for the emergence of local mining. The question is why local mining has emerged and is the management of local mining. To answer this question, the socio-legal research research method was conducted in Sawahlunto. To examine the extent to which transformation in mine management has an effect on local community participation, and the possibility of mining company accommodation on the demands of community involvement in the ownership and production process, this paper is divided into several sections. The first part discusses the history of mining exploration in Sawahlunto which began in the days of Dutch colonialism, and was managed by a coal company. The next discussion discusses the recognition of community customary rights to land, and the implication, is the state's recognition of the possibility of ownership and management of mining by the community. The third part discusses governance of community relations in coal mining, while the final section discusses the transformation of production from mechanical processes to manuals to accommodate the ability of the community in the coal production process.

The main offer of this paper is that the orientation of energy and mining policies, especially in the production and production of people around the mine area, is possible after the production process of large companies ceases, and the value of exploitation by large companies is considered commercially unprofitable. This kind of policy, of course, needs to consider legal, political and socio-economic aspects that cover the condition of the mine after exploitation by the company.

## 2. EXPLORATION OF OMBILIN COAL MINE

The history of the Ombilin Coal Mine in Sawahlunto was inseparable from the presence of the first Dutch East Indies Government in Indonesia in 1596. The potential for coal content was first discovered by Ir. De Groet in 1858 in the stomach of a tributary of Ombilin which flowed from Lake Singkarak past the City of Sawah Lunto. The findings were followed up by a Dutch geologist, Ir. William Hendrik De Greve in 1867. Further research was conducted by Ir. R. DM Verbeck. The results of this latest study indicate that there are coal deposits in three locations, namely 80 million tons in Durian River, 20 million tons in Encroachment, and 205 million tons in Black Land. Since the start of mining by the Dutch government in October 1892, the mining system applied in the inner mine is the "Sand Filling" system or by using sand material as a filler area that has been taken by the Goal Area. take from the surface. At the beginning of mining, it produced 48,000 tons. The highest production in the history of the Ombilin Coal mine took place in 1930-1938 with a total production of 624,201

tons, but since 1938 it also began to decline Coal production, a decline caused by reduced labor, considering that at that time many workers were prepared to face World War II. In its operation, coal mining in Sawah Lunto experienced ups and downs especially after the regional autonomy policy was implemented in 2002 (see Table 1). Regional Autonomy which was launched following the fall of the New Order government in 1998 was followed by a set of laws which became the legal basis for the next regional autonomy movement, including: Region Number 22 of 1999 concerning Regional Government. 5 years later, the law was revised to Law Number 32 of 2004 which regulates authority and encourages regional governments to explore and utilize the potential of natural resources in order to improve the welfare of their people. But the policy of regional autonomy is considered to cause confusion considering that in addition to regional actors and organizers who are not ready, it also encourages the rise of regional sentiments which have implications for the revival of communal rights which are the basis of local communities managing their own mining.

### 1.1. History of Sawahlunto Mining

The city of Sawahlunto is located in the province of West Sumatra, with the northeastern direction of the city of Padang and is approximately 90 km away. According to the original document, the name Sawahlunto was written separately, namely Sawah and Lunto, the name taking was adapted to existing conditions, namely the stretch of rice fields surrounded by hills, and among the rice fields flowing the river called Batang Lunto. Because Sawahlunto is surrounded by hills, it is very quiet and isolated but since the discovery of coal seams in Ulu Air in the uninhabited mountain valley of the Ombilin River in 1868 by Ir. WH. de Greve then Sawahlunto becomes very important. Sawahlunto developed in line with the population growth which increased from year to year and in November 1892 a total of 366 convicted people were employed in the Coal Mine. Until 1898 began arriving in Sawahlunto Chinese people who later worked as free laborers, in addition to the Dutch East Indies Government also brought people from Java Island to be employed as contract laborers at the mine. In 1913 the Dutch East Indies Government made changes to the division of territory based on staatsblad No. 321 of 1913, which included Sawahlunto and Talawi as part of the Tanah Datar area. It was noted that at that time there were 3,000 workers living in Sawahlunto and working in the Mine, 1,600 were workers in the prison while the rest were contract laborers and 87 were supervisors of the Dutch.

Since 1858, the Dutch have believed that there is coal deposits in the Ombilin area, including a mining expert named Ir. C. De Groot. Then it was only in 1867 with the Dutch East Indies Governor's Decree dated May 26, 1867 assigned by Ir. W. H. de Greve investigated it and certainly found coal in the early 1868 in the Ulu AA area, on the banks of the Ombilin river. In 1891 the Dutch East Indies government commissioned Ir. J. A. Hooze to design and prepare materials for extracting coal at the Durian River, this appointment was at the urging of Ir. E. Van der Elst, Inspector General of Mining in the Netherlands. On May 25, 1891 came to Sawahlunto Ir. W. Odeftoy, who was appointed to lead coal mining in Ombilin. The draft law for Ombilin coal mining submitted by the Dutch East Indies Government was finally determined by the Dutch House of Representatives on November 24, 1891.

Furthermore, the draft law was ratified and had the force of law as a law, by the Chief Advisory Board State on December 28, 1891 and published in State Gazette No. 223 which contained about the increase in the Netherlands Indies Government budget for the Fiscal Year 1892 in the context of the exploitation of the Ombilin Coal Mine by the Government. Based on the date of ratification of the draft law and the issuance of the State Gazette it was determined as the anniversary of the Ombilin Coal Mine. To further improve the coal mine supply, especially to assist the source of income of the Dutch Indian Government, Decree No. 3 was issued in July 1918. 64 and published in State Gazette No. 375, which states that the mining business was confirmed as a company form and under the management of the Ministry of Government's efforts until 1942.

### 1.2. Communal Land Right and Mining Contract

Mining is very closely related to land use (Lange, 2008; Libby, 2003; Hilson, 2002). Some of these lands have been traditionally owned by the community (Rugadya and Kamusiime, 2013). Many studies show that communities are also entitled to get a share of this land in connection with their binding rights (Kidido et al., 2015). The field study results of this study showed that before the mining was officially carried out an agreement between the Government of the Netherlands as the concession holder and the Ongku Lareh prospective mining location in Sawah Lunto. The first agreement was made before E. I. van Ronversy, Assistant Resident of Tanah Datar who is also a Notary Hendrik Yakobus representing Pelta Schemuring as the owner of a mining concession and Laras Silungkang Djaar Sutan Pamuncak representing Kelungkan Silungkang as the owner of communal land in the prospective mining location. One interesting thing is the contract that is based on ulayat rights of the adat community. With this willingness to sign, the Dutch Government as the concessionaire is willing to leave the location if it is no longer needed. That is, limited to the use of natural resource mining in the form of coal. The existence of indigenous peoples in Indonesia has been declared by scholars of customary law, according to Van Vollenhoven (see for instance in Fasseur, 2007; von Benda-Beckmann and von Benda-Beckmann, 2011), in the territory of the archipelago which is now called Indonesia there are 19 indigenous territories, namely customary law areas (1) Aceh, (2) Gayo, Alas, Batak and Nias, (3) Minangkabaukabau, Mentawai, (4) South Sumatra, Enggano, (5) Melayu, (6) Bangka, Balitung, (7) Kalimantan, (8) Minahasa, (9) Gorontalo, (10) Toraja, (11) North Sulawesi, (12) Ternate Islands, (13) Maluku, (14) West Irian, (15) Timor Islands, (16) Bali, Lombok, (17) Central Java, East Java, Madura, (18) Solo, Yogyakarta, (19) West Java, Jakarta. In the nineteen indigenous environments there were indigenous people.

However, in the context of what natural resource stakeholders, it is stated the existence of approximately 250 Zelfbestuurende landschappen is not what is meant by indigenous peoples. The intended indigenous people are Volksgemeen-schappen, which has its own social system and has strong relationships with land, management of natural resources, and has the flexibility to maintain existing values and norms (Lebel et al., 2006). Indigenous peoples are an autonomous community unit where they regulate their living systems both legal, political, and economic aspects (Fortes and



Evans-Pritchard, 2015; Anaya and Anaya, 2004). In addition, it is autocratic, namely an indigenous community which is born from, develops together, and is guarded by the community itself. According to Sekarmadji and Sumardjono (1999), the presence or absence of customary rights is related to the existence of indigenous peoples themselves. Among them, the existence of customary law communities that fulfill certain characteristics as subjects of customary rights; the existence of a region with certain limits as a living space which is an object of customary rights; the authority of customary law communities to carry out certain actions relating to land, other natural resources and legal actions. These legal actions are carried out by people who are held to represent indigenous peoples.

In the context of coal mining in Sawahlunto, where the contract was signed, it was shown that customary rights to natural resources in Lunto Sawah still existed and there were legal subjects, namely old adat with the Dutch. With the issuance of Minister of Home Affairs Decree Number 3 of 1997 concerning Empowerment and Conservation and Customary Development, Habits of Indigenous Peoples and Institutions in the Region, it can be concluded that the nature of customary institutions lies in the existence of old customary law which can be represented by the community to carry out legal acts to bend various activities and the authority of customary institutions that regulate their wealth including their natural resources. Therefore, the intended criteria are not expected to be a barrier, there are not indigenous peoples, but help decision makers to accept the existence of an indigenous community. In addition, the existence of indigenous peoples as recognized legal subjects, legal objects and authority of indigenous peoples is also recognized. This has been formally recognized by the constitution. This means that formally the recognition of the existence of indigenous peoples has been accommodated in the constitutional structure of article 18 of the 1945 Constitution of the Republic of Indonesia. In this context, it can be explained that the subject of the community's right to their customary territory (communal rights) has been until now. Authority of Indigenous Peoples over natural resources generally includes managing and carrying out land use, but also for other natural resource objects such as coal, trees, animals, rocks that have economic significance. During the Dutch colonial period, many agreements were made with kings in Java which in essence systematically negated the rights of indigenous peoples to their natural resources. However, it did not occur in Sawah Lunto, West Sumatra as a contractual agreement between the Dutch Government and the alignment of the people of Sawah Lunto. Nevertheless, there are still many challenges to this objection, so the Dutch East Indies Government issued a policy known as the Domein Statement (Domein Verklaring) to distinguish which objects of natural resources will be despised by the State and which will remain in the hands of the Community Adat is known as Vrije Land Domein and Domein Onvrij Land.

### 3. LOCAL MINING AND SOCIAL GOVERNANCE

Since the 1990s Coal mining companies have conducted research to measure the economic value of coal production in Ombilin,

Sawah Lunto. As a result, Ombilin production is no longer economical for the company. Even the production costs soared to 1.4 million US dollars/year. In fact, the coal reserves taken by Ombilin are only 23 million tons from the total reserves of 102 million tons. Such conditions cause mining operations in Ombilin to decline. In fact, since 2017 it has stopped. The reason is that production costs are expensive, higher than the selling price of Coal. The average coal reserves in Ombilin are at a depth of 800 meters below ground level. This condition requires more sophisticated technology to dredge coal at a deeper depth. This had made PT. Bukit Asam loses up to Rp. 53 billion/year. At present, the company seeks to find partners who can reduce production costs. At present, the cost of producing coal in Sawahlunto is much higher than the selling price.

If anyone has technology and is cheap, this closure will be reviewed. For this reason, PT. Bukit Asam will look for partners from abroad to work on Ombilin 3. PT. Bukit Asam still has the intention to continue the production of Coal at the mining site Ombilin 3, Sawahlunto, West Sumatra with the cooperation of a company that is able to mine Coal with lower production costs. For this reason, PT. Bukit Asam also plans to extend Mining Business Permit for Ombilin 3. When PT. Bukit Asam experienced a decline in production, and a local mining company was born which was encouraged by the atmosphere of regional autonomy.

From 2010 to 2015 there were 12 coal mining companies that had Mining Business Permits in Sawahlunto issued by the local City Government through the Trade and Cooperative Industry Mining Agency. In accordance with Article 66, these companies can be categorized into People's mining. Community mining activities as referred to in Article 20 are classified as follows: A. metal mineral mining; b. non-metal mineral mining; c. rock mining; and/or d. coal mining. However, After Policy autonomy, there are three Coal mining companies in Sawah Lunto who are warned about environmental management that has not been done, namely PT. Guguk Tinggi Coal, PT. Nusa Alam Lestari and CV. Surya Pratama. The head of the Sawah Lunto Trade Industry and Cooperative Service Office said that the three companies were given written warnings by the West Sumatra Province Mining and Energy Office regarding environmental issues because they were considered not yet carrying out environmental management on mined land. This means disregarding Article 1 of the Law of the Republic of Indonesia Number 4 of 2009 concerning Mineral and Coal Mining, namely the obligation to conduct an environmental impact analysis.

## 4. SOCIAL ACCOMMODATION IN PRODUCTION SYSTEM TRANSFORMATION

Since the start of mining by the Dutch government in 1892, the mining system that has been implemented is the "Sand Filling" system or local system. The procedure works, using sand material as a filler area that has been taken from the coal taken from the surface. For mining which has an average thickness of 6 meters, the extraction is divided into 3 layers. Mining is first done in the

lowest layer until the progress is around 20-30 m which is then followed by mining the layer above and so for the top layer. Coal excavation is carried out by drilling and blasting which is assisted by cormorant or belincong. The coal that has been blown is loaded into a “chain conveyor” with shovel which is then transported outside using a truck lorry. Material filling (sandfilling) is carried out every time it progresses 3-4 m by flowing from the surface in the form of “pulp” with a ratio of 5: 1 (Water: Sand).

The boundary between filling the sand and the surface of the work is installed with insulation from grass so that the material carrier will come out through the insulation and flow to “sump” (pile) which is then pumped out. Sand material is taken from the Kayu Gadang area where the excavation is carried out by a spray machine (water-jet monitor) which is assisted by drilling and blasting. Broken material is sprayed with high-pressure water (water-jet monitor) and is channeled to a mixing station which is then channeled to the work surface through a drill hole. Use of this slamming system runs long enough, and was last applied in 1981. This system runs not so long and starting in 1985 the buffer system with “chock release” began to be abandoned because it was considered inefficient and too much needed to use wood and replaced with a buffer system using hydraulic prop. At that time, there was a “Crash program” which was implemented by mining a longwall-retreating system, where semi-mechanical equipment began to be practiced in mid-1985. This was an attempt to bridge the transfer of technology from manual methods to mining using mechanical equipment. This semi-mechanical mining is a combination of manual support, but coal cutting is done with a “shearer” cutting machine, which operates continuously, however, semi-mechanical mining has not been used anymore and the last implementation was carried out in 1999 due to unfavorable conditions which then continued by manually returning.

## 5. CONCLUSION

Coal mining in Sawah Lunto has been carried out long before Indonesia’s independence until the current era of regional autonomy. Mining before the autonomy era was managed in a mechanical way and is now back manually. In addition, before the era of regional autonomy, national corporate governance experienced a reduction in production and even stopped production, but at the same time local mining with local governance increased. This is related to the status of communal land which has since been promised that mining has only been limited to coal extraction not including land and communal rights.

The perspective sought by this study is how changes in mining activities that are more oriented to local interests, and accommodated by the community can be more sustainable in the long term. Although coal mining exploration in Sawahlunto is currently an industry that no longer plays a major role in fulfilling coal energy at the national level, Sawahlunto is still a model for the role of mining exploration by the community. In addition, the shift in orientation from mining run by Dutch companies to being run locally, has proven that this system has more long-term impact, where Sawahlunto has and still operates >100 years. The perspective presented by this study

leads to a locally-run transformative action to socially responsible mining. This perspective is expected to be an important reference in broader energy and mining economic policy making. At least, an important outcome of the findings of this study is how local communities can still have the opportunity to obtain their own share of profits and carry out mining activities safely and legally, as well as productively, after the mining and energy operations of large companies end. Some legal considerations such as the recognition of community land rights, and the transformation of the production process from mechanical to manual are considered as accommodative measures of energy policy to enable people to benefit directly from the wealth of natural resources in their region. The results highlight the need to an accommodative legal policy that considers the socio-cultural aspects of the local community.

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