

# **The Prospect of Coal Briquets Business in West Sumatera To Overcome the Scarcity of Kerosen ( Supply and Demand Site Analisis)**

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## *Abstract*

The purpose of this study is to see how much support local governments in supporting coal briquets business in West Sumatera and how much public interest (entrepreneurs and investors) to promote the production of coal briquettes. To see how much available reserves of coal as raw materials of briquettes and raw materials may be obtained from other provinces such as Jambi, Riau, Bengkulu, South Sumatra and North Sumatra. Expected from the results of this study can be seen how much public interest to switch from using kerosene fuel and firewood to use coal briquette stove in West Sumatera.

This study is considered very important, because when this happens the scarcity of kerosene fuel to the regions and the high price of kerosene which causes small businesses can not produce efficiently and mothers difficulty to find kerosene fuel. Besides that certain small companies in Indonesia are still import briquettes from other countries. With the development of coal briquets business in West Sumatera can open a new business because it will form a new industry cluster that would provide new opportunities for greater employment in West Sumatera. It increased revenues from value added from mineral coal. Expected results of this study is a description of coal briquettes business development prospects in West Sumatera in terms of supply (Supply) and consumer / user (demand). And policy proposals will be given about the development of coal briquettes in several regencies / cities in West Sumatera.

Research methods are surveys and in-depth interviews to the respondent local government officials concerned, prospective employers and prospective consumers of coal briquettes. Analysis method performed descriptive qualitative methods. Research locations selected three regions from six coal-producing areas a lot in West Sumatera, and which has enough reserves potential, namely Solok, Sawahlunto and Sijunjung.

The results showed that coal briquette business in terms of supply and demand aspect has a very good prospect. But, potential customers almost all, have not know and understand precisely this use of coal briquettes. So it is with would-be entrepreneurs are not familiar with and understand the technical aspects / coal briquette manufacturing technology and financial aspects of business investment and manufacturing feasibility of coal briquettes. While, agency officials from related services (namely mining and energy service and industry service) strongly supports coal briquette business in their area.

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## **Introduction**

### **Background**

West Sumatera's rich variety of mineral resources should be made minerals as advantage product to people's welfare. One of the many types of minerals found in the province of West Sumatera is coal. Until now, the West Sumatera society can not enjoy with coal. Many ways can be done in the coal business to have the added value. One way that can be done is by converting coal into briquettes and can be sold at higher prices. Besides coal briquettes can also be a source of alternative fuel and gas that can be used by households and small industries. Other areas in Indonesia has much to

use coal as fuel for households and small industries such as West Java, East Java, Central Java, Lampung and Kalimantan.

The more reduced the number of world oil reserves then the price of fuel oil began to continue to soar. Indonesia, including the State has considerable oil reserves, but also raise the price of fuel oil in the country. In line with the government also tried to reduce fuel subsidies, and therefore the price of fuel oil in the country so come up. Frequent oil scarcity in some regions in Indonesia, including the scarcity of kerosene. Often we hear complaints of housewives because of the unavailability of kerosene dealers, and the long queues to get kerosene. Many termination of small businesses and small industries due to the loss of fuel oil in the market.

To overcome the scarcity of kerosene and gas as fuel households and small industries, it would be good to do business development and manufacture of coal briquettes and to popularize the use of briquettes for households and small industries in the West Sumatra. Potential coal reserves are located in West Sumatra still be used for a period long enough. Some areas in West Sumatra have reserves coal minerals are:

- a. Kab. Sawahlunto / Sijunjung; Ombilin, Sei Tambang, Sisawah, Jujuhan, Sinamar, Muaro, Lubuk Tarab, Parambahan
- b. Kab. Pesisir Selatan; Lumpo IV Jurai, Panadah, Surantih, Tarusan,
- c. Kab. 50 Kota; Tanjung Pati, Galugur, Kapur IX, Rimbo Data, Base, Koto Baru
- d. Kab. Pasaman; Parit Silayang, Rao Mapat Tunggul
- e. Kab. Solok; Sulit Air, X Koto Diatas, Talang Babungo, Lembah Gumanti, Air Luo, Payung Sakaki
- f. Kab. Tanah Datar; Talago Gunung, Tanjung Emas

With the use of coal briquettes to be decline in gasoline consumption. Some reasons for choosing coal as an alternative energy resource is the (Ministry of Energy and Mineral Resources, Directorate General of Mineral, Coal and Geothermal, 2006): (a) the potential of significant resources (equivalent to 61.3 billion tons of 261 billion barrels of oil), (b) Value kalor high enough (4500 to 7000 kcal / kg), (c) coal briquets technology in small and large scale is controlled, (d) Although still small, market and user of coal briquettes are formed so that the continuity of supply of coal briquettes should be preserved and fulfilled, especially for consumers who was fanatical.

The exploitation and use of coal briquettes have promoted primarily for areas that have high enough coal reserves. The purpose of this penitentiary, include: (Ministry of Energy and Mineral Resources, Directorate General of Mineral, Coal and Geothermal, 2006): (a) Optimizing the use of coal as an energy resource potential alternative for small industrial sector (including cottage industry), (b) Encourage opportunities for community, entrepreneurs and cooperatives to take part in the field of coal briquettes (producers, distributors / dealers and users), (c) Reducing the use of fuel wood dependency so that forest conservation can be done, (d) Encourage the mining sector, especially coal mining and utilization of technology resources for Indonesia coal briquets business, (e) Encourage the development of human resource potential, (f) Provide / open employment opportunities and new business field

## Literature Study

Coal briquette is a solid fuel in the combustion process has its own characteristics, namely: **first**, require a certain time in the ignition, **second**, to raise the temperature on the surface of coal briquettes needed fuel as a combustible ignition (Sofaeti, 2005). Sosialization programs to use of coal briquettes was carried out by the Indonesian government since 1993, through three pilot villages namely: Palimanan Timur (East Java), Ceper (Central Java) and Lebak Jabung (East Java) and small industries in the three pilot districts on the island Java, in Majalengka (West Java), Kebumen (Central Java) and Gresik (East Java).

This coal briquette market are generally small companies that need fuel in the production process (energy-intensive industries), which has a lot of use is a farm chicken. Besides coal briquettes can be used in Pondok Pesantren, Penitentiary, Hospital, Boarding / Nursing. According to research Sofaeti (2006), the use of coal briquettes for cooking

more secure from the possibility of fire, so the cooking process can't be attended. Besides, the heat generated by a single briquette stove can be applied to the other, thus very efficient in fuel consumption of coal briquettes. Sofaeti (2007), has been designed making briquette stove with integrated oven (three furnace) that is used in pesantren Al-Mubarak Serang District.

### Advantages of Coal Briquets

Compared with other types of fuel, coal briquettes are superior in some respects, namely: (a) cheaper, (b) high heat and continuously so that it is good for the long-burning, (c) Not at risk of exploding / burning, (d ) no noise issue and not sooty, (e) Source of abundant coal. However, the briquette has limited initial ignition time consuming within 5 - 10 minutes and needed a little watering kerosene as early ignition, coal briquettes only efficient if used for a period of over 2 hours (PT. ba, bppt, 2005). Tables 1 and 2 below will provide a description of the benefits of coal briquettes in comparison with other fuel is kerosene.

Table 1  
Comparison of Kerosene Use by Briquette

Used	Kerosene	Briquette	Reducing
Households 3 ltr/day	Rp. 9000/day	Rp. 5400/ day	Rp. 3600/ day
Food Stall 10 ltr/day	Rp. 30.000/ day	Rp. 18.000/ day	Rp. 12.000/ day
Small Industries 25 ltr/day	Rp. 75.000/ day	45.000/ day	Rp. 30.000/ day
Medium Industries 1000 ltr/day	Rp. 2.000.000/ day	Rp. 1.502.450/ day	Rp. 497.550/ day

Source : pt. ba, bppt, 2005

Table 2  
Parameter of Kerosene and Briquette

Parameter	Kerosene	Briquette
Kalori Value	9.000 kkal/ltr	5.400 kkal/kg
Ekivalen	1 ltr	1,60 kg
Cost	Rp. 2.800	Rp. 1.300

Source : pt. ba, bppt, 2005

We have already circulated on the market four types of briquettes, which is: super coal briquette, coal briquette type of pillow / jengkol, coal briquettes the type of wasp nest and bio-coal briquettes. Of the four types of coal briquettes, bio-coal briquettes are the most environmentally friendly. Bio-coal briquettes has three more values, namely: 1) can be made from low quality coal types, 2) can burn almost perfect because the flame temperature is formed at a high enough devolatilisasi stage resulting in energy efficiency, environmentally friendly, 3) result the amount of matter flying biomass content, causing flames formed longer, so the temperature point of fuel (ignition point) lower than coal.

Various studies to produce briquettes with better quality and more efficient has been done. To make briquettes are also mixed with other materials, is the waste oil. Briquettes with a mixture of waste oil palm producing is very good quality

for easily and quickly burned, reducing the waiting time for the burning perfectly. Waste oil palm are common in West Sumatra. From that briquettes coal business take advantage of West Sumatra.

Demand for coal briquettes is always increasing, although production has also increased rapidly, but the production of coal briquettes in the country can not meet domestic demand. Until now still need to import coal briquettes from abroad, especially China. Some industries have to use coal briquettes as it requires high heat. Foundry industry for example there is lots of in Ceper (Central Java). Based on preliminary research into Ceper (Central Java) foundry companies listed at Ceper until now still importing from China's coal briquettes because it is still a lack of domestic coal supply. Until now, domestic coal demand is not met from domestic production. Below are given data on the progress of production and use of coal briquettes in Indonesia.

Table 3  
Production and Sales Progress Coal Briquets in Indonesia  
(Years 2000-2005)

No.	Company	2000	2001	2002	2003	2004	2005
1.	PT.BA Production	20.955	23.248	21.827	19.497	17.391	20.916
2.	Private Company Production	923	639	868	868	4.529	7.300
3.	PT.BA Sales	22.837	21.403	22.476	21.088	18.161	19.052
4.	Private Company Sales	923	589	589	589	4.384	7.300

Source : Ministry of Energy and Mineral Resources, Directorate General of Mineral, Coal and Geothermal, 2006

The use of briquette and market share can be show at table 4.

Tabel 4  
Market Share of Briquets in Indonesia (Year 2005)

No.	Nama Pengrajin	Percentage (%)
1.	Peternakan ayam	65
2.	Pembakaran kapur	5
3.	Rumah makan/ catering	12
4.	Pengeringan tembakau	5
5.	Pembakaran bata/ genteng	3
6.	Asrama/ pesantren	5
7.	Pengeringan karet	2
8.	Lain-lain	3

Source: Ministry of Energy and Mineral Resources, Directorate General of Mineral, Coal and Geothermal, 2006

## Research Objectives And Benefits

### Research Objectives

In general, the purpose of this study are: to see the prospects and potential exploitation of coal briquettes in West Sumatra in terms of supply (supply) and demand (demand). In particular purpose of this study can be viewed as follows:

Supply Side;

1. Analyzing the possible development of coal briquette manufacturing business in West Sumatra in terms of potential entrepreneurs (mainly directed research on coal mining contractors are already there)
2. Analyzing the possible development of coal briquette business in West Sumatra in terms of local government and related institutions are located in West Sumatra (research directed to local government officials and related agencies, in supporting the development of coal briquette business).
3. Analyzing the feasibility of developing coal briquette making business visits from the availability of raw materials

From Demand side, in particular the purpose of this study are: Analyzing the possible demand for the use of coal briquettes to small industrial customers

### **Benefits Research**

Expected results of this study can be utilized by various parties, including:

1. The parties in the policy makers Regency / City in particular and in West Sumatra are generally to be foster and develop the business of coal briquettes. This is very beneficial in order to increase the value added extractive West Sumatra, which had only sell natural resources in the form of raw materials.
2. For employers / contractors coal, in order to increase the margin of the company, was just getting the raw coal is now able to sell coal that has been processed into coal briquettes. With the development of coal briquette business, is expected to open new business opportunities, including the growth of coal briquette distribution business, a distributor and retailer.
3. For prospective customers, namely, small businesses (especially poultry company), is expected to reduce the cost and increase corporate profit margins.

## **RESEARCH METHOD**

### **Research Stages**

This research will be conducted in two stages, namely:

- a. The first stage in terms of supply (supply).  
This study uses the interview method and is equipped with a list of questions. Grouped respondents interviewed over 2, namely: **The first group**, are government officials and related agencies; mining service officers, and supervisors of SMEs. **The second group**, the would-be entrepreneurs, including coal mining business located in West Sumatra, coal mining contractors, other people who are considered potential and have a passion to pursue coal business.
- b. Phase two, in terms of demand (Demand).  
Conducted interviews to potential users, whether he's willing to use coal briquettes. Prospective users are taken as the sample is a chicken farm entrepreneurs, restaurant entrepreneur, pottery entrepreneurs and brick-making entrepreneurs

### **Location and Area Samples**

Selected sample is three (3) districts / cities in West Sumatra, namely: Kabupaten Solok, Kota Sawahlunto, and Kabupaten Sijunjung.

### **Analysis Method**

Data and information obtained will be analyzed using qualitative analysis to used to assess the prospects for the development of coal briquette business in terms of supply and demand aspects.

## Research Findings

### Supply Analysis (Suppliers)

Coal briquette business in West Sumatra are expected to have a very good prospect, because the raw materials of coal available in abundance, both in West Sumatra itself or in other Povinsi as Jambi, Bengkulu, South Sumatra and North Sumatra. For exploitation of coal briquettes is also expected to be carried out by cooperatives or Small and Medium Enterprises (SMEs), because the investment business for coal briquettes can be exploited by small and medium businesses. Special concessions in the West Sumatra coal briquettes can be made by employers (contractors) existing coal. From the results of interviews with several entrepreneurs (contractors) who have all the coal they agreed to run a coal briquette making business if the coal used to make is low-calorie, because it is a waste. West Sumatra community knowledge about the business of technology briquettes are still very limited. By disseminating information about coal briquettes business and also how to use, businesses of coal briquettes in West Sumatra will thrive. To see more clearly the prospect of coal briquette business from the supply side can be done about the availability of coal analysis.

### **Potential of Coal in West Sumatra**

The potential of coal in West Sumatra are big enough, from the amount of available raw materials for coal briquette making business is not to worry about. The number of West Sumatra coal production last few years we can see in table 5 below.

Table 5  
Production of Coal in West Sumatra  
(Year 2003 - 2007)

<b>Year</b>	<b>Production (ton)</b>
2004	735.900
2005	426.432
2006	732.839
2007	518.754
2008	389.065

*Source: Data Mining And Energy Satistic Of West Sumatera (2008)*

In table 6, we can see that coal mineral potential in West Sumatra. There are 10 areas in West Sumatra which have the potential of coal in large enough quantities, namely: 50 Kota, Pasaman, West Pasaman, Pesisir Selatan, Sijunjung, Sawahlunto, Solok, Solok Selatan, Tanah Datar, and Dharmasraya.

Coal mining mostly done without permission (illegal mining), but the number of mines that already have licenses are also quite a lot. The number of coal mining companies that already have a license in West Sumatra can be seen in table 7 below.

**Tabel 6**  
**Potentiality of Coal in West Sumatera**

<b>Kabupaten</b>	<b>Location</b>	<b>Potentiality</b>	<b>Explanations</b>
50 Kota	Galugur, Kapur IX	Sumberdaya	6.000-7.000 Kkal/kg
	Rimbo Datar/Pangkalan Koto Baru	Sumberdaya	
	Sumur Batu Harau	Sumberdaya	
	Tanjung Pati	465.250 Hipotek	
Pasaman	Parit Silayang/Rao Mapat Tunggul	Sumberdaya	7.600 Kkal/Kg
	Jorong Binjai/ Kec. 3 Nagari	35.428.000 ton	
Pasaman Barat	Air Bangis/ Sei Beremas	13.221.400 ton	
Pesisir Selatan	Jorong Lumpo/ Kec. IV Jurai	33.508.800 ton	5.000-7.000 Kkka/kg
	Penadah	517.000 ton	
	Surantih	Sumberdaya	6.000-7.000 Kkal/kg
	Tarusan	2.000.000	6.000-7.000 Kkal/kg
	Ampang Tulak/ Kec. Basa 4 Balai	1.910 Ha Tereka	5.758-7.162 Kkal/kg
	Kp. Kumbang/ Lunang	3.623 Ha Tereka	
	Indrapura/ Kec. Pancung Soal	6.758 Ha Tereka	
Sijunjung	Tunggul Jujuhan/ Sinamar	28.000 ton	4.000-6.000 Kkal/kg
	Sei. Tambang	5.904.837 ton terukur	
	Sisawah	4.000.000 ton tereka	
	Muaro	Sumberdaya	
	Lubuk Tarab	121.500 ton hipotek	
	Batu Manjular	2.464.220 ton spekulatif	
Sawahlunto	Parambahan	14.093.000 ton terukur	6.800 Kkal/kg
	Ombilin	98.000.000 ton terukur	6.500-7.500 Kkal/kg
	Talawi	753.500 ton tereka	
	Desa Tumpuk Tengah&Batu Tanjung/ Kec. Talawi	2.119.913 ton hipotesa	
Solok	Sulit Air/ X Koto Diatas	2.675.800 ton tereka	4.500-7.400 Kkal/kg
	Sawah Luar/Pasilihan	1.236.131 ton terukur	6.800-7.485 Kkal/kg
	Talang Babunga/ Lembah Gumanti	7.500 Ha	
	Air Luo/ Kec. Payung Sakaki	Sumberdaya	6.500 Kkal/kg
Solok Selatan	Sei. Kunyit/ Kec. Sei Jujuhan	35.779.000 ton spekulatif	
	Jorong Pekonina/ Kec. Sei Pagu	22.434.500 ton spekulatif	
	Lubuk Gadang/ Kec. Sangir	112.500.000 ton spekulatif	
	KanagarianUlu Suliti/ Kec. Sungai Pagu	35.428.000 ton spekulatif	
	Tanah Datar	Kanagarian III Koto & Tjg Barulak/	25.008.000

	Kec. Rambatan	spekulatif	
Dhamasraya	Jorong Sinamar/ Sei Rumbai	2.474.000 ton spekulatif	

Source: Data Statistik Pertambangan dan Energi Propinsi Sumbar (2008)

### Potential Coal From Other Province in Sumatra

Besides in West Sumatra, coal also quite a lot of neighbors Provinces. Among the provinces that have the potential of coal in Sumatra are: Jambi, Bengkulu, South Sumatra, North Sumatra, and Riau. In the following table are given data about the potential of coal contained in each province.

**Tabel 7**  
**The Legal Company of Coal Mining Industries in West Sumatera**

Kabupaten/ Kota	Company	Location	Area (Ha)
Sawahlunto	1. PT. BA	Lembah Segar Kec. Talawi	2.950
	2. PT. Allied Indo Coal	Parambahan Kec. Talawi	747,10
	3. CV. Daksa Elang Abadi	Kec. Talawi	108,5
	4. CV. Bara Mitra Kencana	Talawi Ds. Tumpuk Tengah	70,53
	5. CV. Sawah Liat Teknik	Kec. Talawi	62,83
	6. CV. Tahiti Coal	Sangkar Puyu Kec. Talawi	53,80
	7. PT. Guguk Tinggi Coal	Talawi Salak	52,35
	8. CV. Miyor	Kumanis	44,67
	9. CV. Nusa ALam Lestari	Talawi Salak	100
	10. PT. Dasrat Sarana AS	Talawi Ds. Tumpuk Tengah	125,40
	11. CV. Cahaya Bumi Pratama	Talawi Ds. Tumpuk Tengah	103,10
	12. CV. Air Mata Emas	Kumanis	111,70
	13. CV. Putri Surya Pratama Natural	Salak	38,83
	15. CV. Karya Maju Sejati	Talawi Ds. Tumpuk Tengah	102,60
	Solok	1. PT. Prima Nusa Sinar Alam	Sulit Air
2. PT. Intra Wahana Putra Nstr		Sulit Air	98,83
		Jorong Rawang Sulit Air	105
Sawahlunto Sijunjung	1. PT. Bukit Asam	Talawi Ds. Parambahan	12.947,52
	2. KUD. Muaro	Hulu Bt. Kuantan Sjj	100
	3. PT. Trisigma	Sijunjung Ds. Sei Sakam	900
	4. Perusda Kiantan	Sitiung Kec. Timpeh	300
	5. PT. Karbindo	Sei. Tambangan Kec. Pdg Baru	357,73
	6. PT. Karya Hasil Utama	Sumpur Kudus Kec Sisawah	300
	7. PT. Surya Mas Abadi	Koto VIII, Palaluar	210
	8. CV. Dian Purnama	Sisawah	100
	9. KUD Kunangan	Kunangan Kec. Pdg Baru	107,27
	10. CV. Verly	Aie Angek Kec. Tj Gadang	686,88
	11. Yayasan Tarung Drajat	Sibisir Kec. Tj Gadang	500
	12. Perusda Kinantan	Kunangan Kec. Kamang Baru	500
	13. PT. Sumber Niaga Tama	Timpeh Kec. Sitiung	1.000
	14. PT. Allied Indo Coal Jaya	Timpeh Kec. Sitiung	1.000



Kabupaten/ Kota	Company	Location	Area (Ha)
	15. PT. Bukit Asam	Koto VII Kec. Kutipan	1.000
	16. PT. TBN Muaro	Sinamar Kec. Sei Rumbai	
	17. PT. Mitra Bina Prima Abdi	Sinamar Kec. Sei Rumbai	
	18. KUD Kunangan	Kunangan Kec. Kamang Baru	107,27
	19. Perusda Kinantan	Kabun Kec Sumpur Kudus	
	20. PT. Thomas Jaya	Batu Manulur Kec. IV Nagari	
	21. CV. Karya Pratama	Koto Baru Kec. IV Nagari	562,84
Pesisir Selatan	1. PT. Lumpo	Lumpo Kec. IV Jurai	922,70
	2. PT. Sariagnindo Andalas	Kayu Aro Kec. SUTra	809,82
	3. Kop Keluarga Rumah Baru	Indrapura Slt KEc. Pancung Soal	192,49
	4. PT. Kolindo Bina Nusantara	Batang Kaps	2.000
	5. PT. Namas Kencana	Lunang Silaut	870,85
	6. PT. Bukit Bara Tapan	Kmp IV Tulak Kec. Basa IV Balai	1.910
	7. PT. Bukit Bara Tapan	Panadah Kec. Basa IV Balai	2.454, 33
	8. PT. Bukit Bara Indrapura	Indrapura Kec. Pancung Soal	5.953,48
	9. PT. Kelola SUMberdaya Nagari	Tapan Kec. Basa IV Balai	198,80
	10. PT. Tunggal Putra Nusantara	Tambang Kec. IV Jurai	100
	11. PT. Mandiri Sumber Perkasa	Kumbang Lunang Silaut	5.000
	12. PT. Mandiri Sumber Perkasa	Silaut Lunang Silaut	3.164
	13. PT. Tripabara	Kumbang Lunang Silaut	199
	14. PT. Prima Perkasa Abadi	Silaut, Lunang Silaut	2.009
Tanah Datar	1. PT. Tarunusa Minang Akbar	Ds Rambatan Kec, Rambatan	25
Kab. 50 Kota	1. Kop Kary. RM Rangkiang	Tj Balit Pangkalan	11,47
	2. PT. Astrindo Gita Mandiri	Koto Lamo Kec. Kapur IX	128,6
	3. PT. Mutiara Bumi Mangilang	Mangilang Kec. Pangkalan	2.000
	4. CV. Dasa Cita Pusaka Prima	Galagua Kec. Kapur IX	184
	5. PT. Arda Dinasty		185
	6. Pt. Mutiara Prima Coal		629
Pasaman	1. PT. Andalas Alam Basindo	Lubuk Sikaping	1.801
	2. PT. Mandiri Sumber Perkasa	Mapat Tunggul	4.679
	3. PT. Usaha Ketapang Mandiri	Rao Utara	2.763
Dhamasraya	1. PT. TBN Muaro	Jorong Sinamar, Sei Rumbai	300
	2. PT. Centra Bara Indonesia	Jorong Tj ALam, Sei Rumbai	1.000
	3. PT. Sinamarinda Lintas Nusantara	Jorong Sinamar, Sei Rumbai	555,58

Source : Data Statistik Energy and Mining West Sumatera (2008)

### Potential of Coal in South Sumatra

In South Sumatra coal numerous in Muara Enim, Lahat, Musi Banyuasin and Musi Rawas with the amount of reserves around 18:13 billion tons and caloric content ranges from 4800-5400 kcal / kg ([www.sumselprov.go.id](http://www.sumselprov.go.id)). The coal is currently managed by PT Bukit Asam and PT. Bukit Kendi. Reserves that are not managed amounted to 13.07 billion tonnes ([www.sumselprov.go.id](http://www.sumselprov.go.id))

## Potential coal in Jambi Province

Jambi is the nearest province of West Sumatra and is located very close to some district in West Sumatra which contains mineral coal. Of the mineral potential located in Jambi province is almost same with that found in West Sumatra. The number of mineral deposits located in Jambi province is quite a lot and until now there are too many companies / contractors to mine coal here. To more clearly the potential of coal contained in Jambi province can be seen in table 8 below:

**Table 8**  
**Potentiality of Coal in Jambi Province**

No.	Location	Reserve	Explanations
<b>A.</b>	<b>Kabupaten Bungo</b>		
1.	Mampun Pandan Kec. Rantau Pandan	Terukur 40 juta ton	6.160 kkal/kg
2.	Jujuhan Kec. Jujuhan	Hipotik 157 juta ton	
3.	Sei. Serdang/Sei Beringin Kec. Pelepat	Terukur 9,75 juta ton	5.205-6.075
<b>B.</b>	<b>Kabupaten Tebo</b>		
4.	Lubuk Mandarsah Kec. Tengah Ilir	210.356 ton	4.915-4.957
5.	Mangupah Kec. Tengah Ilir	Singkapan	
<b>C.</b>	<b>Kabupaten Sorolangun</b>		
6.	Mengkus Kec. Limun	Tereka 58 juta ton	4.685-5.630
7.	Mensau Kec. Limun	Terukur 1,5 juta ton Tereka 34 juta ton	4.980-6.885
8.	Air Meruap Kec. Sorolangun	Terukur 32,4 juta ton	5.250-5.640
9.	Guruh Baru Kec. Mandiangin		4.820-5.455
10.	Lubuk Resam Kec. Limun	Singkapan	
11.	Sei Telisa Kec. Pauh	Singkapan	
12.	Lubuk Kepayang Kec. Pauh	Singkapan	
13.	lubuk Napal Kec. Pauh	Singkapan	
14.	Sei DinginKec. Limun		3.318-6.359
15.	Sekeladi Kec. Batang Asai	Singkapan	
<b>D.</b>	<b>Kabupaten Merangin</b>		
16.	Sei. Gedang Kec. Pamenang	Terukur 2,25 juta ton	4.171-5.750
17.	Lubuk Gaung Kec. Bangko	Singkapan	
18.	Bedeng Rejo Kec. Bangko	Singkapan	
19.	Tanjung Pulus Kec. Tabir Ulu	Singkapan	
<b>E.</b>	<b>Kabupaten Batang Hari</b>		
20.	Jangga Kec. Batin XXIV	Singkapan	
21.	Jebak Kec. Muara Tembesi	4.700.000 ton	4.712-5.410
22.	Ladang Peris Kec. Muara Bulian	390.000 ton	4.000-4.500
23.	Bajubang Kec. Bajubang		5.000-5.500
24.	Petaling Kec. Jambi Luar Kota	Singkapan	
<b>F.</b>	<b>Kabupaten Tanjung Jabung Barat</b>		
25.	Lubuk Kambing Kec. Tungkal Ulu	Singkapan	
26.	Lubuk Bernal Kec. Tungkal Ulu	Singkapan	
27.	Suban Kec. Tungkal Ulu	Singkapan	
28.	Mudo Kec. Merlung	Singkapan	
30.	Rantau Benar Kec. Medung	Singkapan	
<b>G.</b>	<b>Kabupaten Muarojambi</b>		
31.	Sukadamai Kec. Mestong	Singkapan	
32.	Desa Baru Kec. Mestong	Tereka 7 juta ton	

Source: *Peluang Investasi Pertambangan dan Energi di Propinsi Jambi, Dinas Pertambangan dan Energi Propinsi Jambi (2007)*

## Potential of Coal in North Sumatra Province

North Sumatra Province bordering Pasaman. Pasaman mineral coal also has a substantial amount as shown in table 9. So the mineral content found in North Sumatra earth almost simultaneously with that found in West Sumatra. Coal minerals found in North Sumatra is also a good calorie (6000kcal/kg up) and many medium and low calorie (4000 to 5000 kcal / kg). However, coal reserves that have not been measured also still very much. For more details can be seen in table 9.

**Tabel 9**  
**Potentiality of Coal in North Sumatera Province**

No.	Location	Reserve	Explanations
<b>A. Kabupaten Madina</b>			
1.	Desa Rantau Panjang, Kecamatan Batang Natal	Penyelidikan pendahuluan	6.050 – 7.630 Kkal/Kg
2.	Desa Muara Sipongi, Kecamatan Muara Sipongi	Peninjauan umum	
<b>B. Kabupaten Tapanuli Selatan</b>			
3.	Desa Pergarutan, Kecamatan Padang Sidempuan Timur	1.000.000 ton (hipotetik)	4.000
4.	Desa Tanah Tombangan, Kecamatan Sayur Matinggi	peninjauan	
<b>C. Kabupaten Tapanuli Tengah</b>			
5.	Desa Aloban Bair, Kecamatan Sibolga		7.200
6.	Desa Hudopa Nauli, Kecamatan Kolang	500.000 ton (hipotetik)	1.470 – 5.241 Kal/gr
Kabupaten Padang Lawas Utara			
7.	Desa Sobar, Kecamatan Binanga	Penyelidikan Pendahuluan	
8.	Desa Tanjung Marulak, Kecamatan Gunung Tua	Penyelidikan Pendahuluan	
Kabupaten Padang Lawas			
9.			
10.	Desa Handio, Kecamatan Sibuhuan	Eksplorasi	
11.	Desa Martona, Kecamatan Sosopan	Penyelidikan Pendahuluan	
<b>D. Kabupaten Langkat</b>			
12.	Desa Tanjung Naman Dagang, Kecamatan Bohorok	Eksplorasi	6356 Kkal/kg
13.	Kecamatan Besitang, Kabupaten Langkat	Penyelidikan Pendahuluan	
14.	Kecamatan Sei Lapan, Kabupaten Langkat	Penyelidikan Pendahuluan	
<b>E. Kabupaten Labuhan Batu</b>			
15	Desa Tj. Beringin, Kec. Kualuh Huluh, Kabupaten Lab. Batu	600.000 ton (terbukti)	3.270 – 7.480 Kkal/kg
<b>F. Kabupaten Nias</b>			
16.	Desa Hilimbowo Kare, Kec. Alasa	19.200.000 ton (hipotetik)	
17.	Desa Najalow Aloa, Kec. Hiliduho, Kabupaten Nias	1.000.000 ton (hipotetik)	
18.	Desa Onositoli, Kec. Gn. Sitoli, Kabupaten Nias	1.000.000 ton (hipotetik)	
<b>G. Kabupaten Asahan</b>			

19.	Desa Marjanji Aceh, Kec.Bandar Pulau,	Penyelidikan Pendahuluan	
<b>H.</b>	<b>Kabupaten Tapanuli Utara</b>		
20.	Kecamatan Sipoholon, Kabupaten Tapanuli Utara	Penyelidikan Pendahuluan	

Source : Pemerintah Propinsi Sumatera Utara, Dinas Energi dan Sumberdaya Mineral

### Potential of Coal at Bengkulu Province

Bengkulu is also the neighboring provinces that are adjacent to the West Sumatra. Bengkulu exactly adjacent to the South Coastal District toward the coastal areas of West Sumatra. Bengkulu also has a coal minerals are many and scattered in several locations. This situation can be seen in Table 10 below.

**Tabel 10**  
**Potentiality of Coal in Bengkulu Province**

No.	Location	Reserve	Kualitas/Kalori
<b>A.</b>	<b>Kabupaten Seluma</b>		
1.	Desa Padang Capo Kec Sukaraja	1.652.000 ton	5.595-7.825
2.	Hulu Air Seluma Kec Seluma	hipotek	4.486-5.891
3.	Air Simpur Kec Talo	hipotek	
4.	Air Dedabuk	hipotek	5.375
5.	Bukit Kubu Air Masegar Kec Seluma	terukur	4.486-5.891
6.	Air Seluma, Air Pilubang Kec Seluma	Terukur 3.718.668 ton	5.066-6.179
7.	Kec Sukaraja	Terukur 3.044.213 ton Layak tambang 2.496.281 ton	
8.	Kec Talo SP II, Pagar Banyu	hipotek	6.260-6.698
9.	Air Petai Kec Tais	hipotek	
10.	Lubuk Bunta Kec Talo	hipotek	
<b>B.</b>	<b>Kabupaten Bengkulu Utara</b>		
1.	Tanjung Dalam Kec Ketahan	Terukur 5.860.260 ton Terunjuk 812.300 ton Layak tambang 3.798.514 ton	6.250
2.	Sekayun Kec Pondok Kelapa	Terukur 300.000 ton	7.703
3.	Air Banai Kec. Kerkap	Terukur	5.600-6.600
4.	Air Tenang Senabah, Putri Hijau	hipotek	5.668-6.218
5.	Pondok Bakit Napal Putih Kec Ketahun	Tereka 2.290.195 ton	3.825-4.800
6.	Air Arang, Kec. Talang Empat	Tereka 500.000 ton	
7.	Bukit Berlian Kec Ketahun	Tereka 7.141.014 ton	3.175-5.555
8.	Air Besi Kec Lais	Survey Awal	
9.	Tanjung Karet Kec Ketahun	Tereka 5.288.954	7.000-7.700
10.	Air Kotok Lubuk Durian	Terunjuk	4.640-5.297
11.	Air Kotok Lubuk Durian Batu Raja Kec Kerkap	Terunjuk 8.840.000 ton	4.486-6.796
12.	Desa Aur Gading Kec Napal Putih	Terunjuk 630.000 ton	4.480-6.795
13.	Daerah Suka Maju	Terunjuk 1.767.000 ton	
<b>C.</b>	<b>Kabupaten Muko-Muko</b>		
1.	Muko-Muko Utara	Survey Awal	
2.	Sungai Kiang Kec Lubuk Pinang	Survey tinjau	4.500-5.800
3.	Kec Muko-Muko Utara	Tereka	4.134-6.590
4.	Sungai Sepai Kec Muko-Muko Selatan	Tereka 800.000 ton	
5.	Kec Pondok Suguh	Tereka	

6.	Desa Gajah Makmur Kec Muko-Muko Selatan	Tereka	
7.	Desa Pondok Bakil Kec Napal Putih	Terunjuk 4.095.000 ton	3.853-4.800

	Location	Reserve	Kuality/Kalori
<b>D.</b>	<b>Kabupaten Rejang Lebong</b>		
1.	Kota Padang	hipotik	
<b>E.</b>	<b>Kabupaten Kepahyang</b>		
1.	No.	Tereka	5.595-7.825
2.	Desa Taba Padang Lubuk Saung	Survey Awal	
3.	Desa Tanjung Alam	Survey Awal	4.500-5.200
<b>F.</b>	<b>Kabupaten Kaur</b>		
1.	Tebing Rambutan	Tereka	5.595-5.825

Source: Pemerintah Propinsi Bengkulu, Dinas Energi dan Sumberdaya Mineral

### Potential coal in Riau province

Riau is bordering West Kabupaten 50 Kota. The number of coal mineral reserves located in Riau quite much, well worth the high calorie or low. For more details, potential mineral coal contained in Riau can be seen in Table 10 below.

**Table 10**  
**Potential of Coal in Riau province**

No.	Location	Reserve	Kuality/Kalori
<b>Kabupaten Kampar</b>			
1.	Kec. Desa Muara Selaya/ Desa Batu Sasak Kec. Kampar Kiri	55.000.000 ton	4600-5100 kal/gr
2.	Kec. Desa Tabing, Desa Tanjung, Desa Siberuang, Desa Bandar Kec. XIII Koto Kampar	45.000.000 ton	5900 – 6850 kal/gr
3.	Kec. Keritang, Kec. Kemuning Kab. Inhil dan Kec. XIII Koto Kampar	60.480.000 ton	6100 – 6500 kal/gr
<b>Kabupaten Rokan Hulu</b>			
4.	Kec. Rokan IV Koto	140.750.000 ton	6580 kal/gr
<b>Kabupaten Kuantan Singingi</b>			
5.	Petai Kec. Singingi	3.000.000 m <sup>3</sup>	7000 – 7200 kal/gr
6.	Bukit Medang Kec. Singingi	11.313.900 m <sup>3</sup>	6500 – 6800 kal/gr
7.	Sungai Jernih Kec. Singingi	6.500.000 m <sup>3</sup>	
8.	Pangkalan Indarung Kec. Singingi	20.056.100 m <sup>3</sup>	
9.	Bt Lubuk Buntal Kec. Singingi		
10.	Kec. Singingi Hilir	12.106.668 ton	6800 – 7100 kal/gr
11.	Kec. Sengingi Hilir	3.775.200 ton	6106 – 7108 kal/gr
12.	Kec. Sengingi Hilir	4.000.000 ton	6106 – 7108 kal/gr
13.	Kec. Cerenti dan Peranap	3.170,98 milyar ton	4510 - 4695 kal/gr
14.	Kec. Cerenti	50.653.414 ton	4121 – 5522 kal/gr
15.	Kec. Desa Pangkalan Ibul Kec Lubuk Jambi	35.000.000 ton	5100 – 5650 kal/gr
<b>Kabupaten Indragiri Hulu</b>			
16.	Kec. Siberita Kab Indragiri Hulu Kec. Keritang Kab. Indragiri Hilir	16.851.020,33 ton	6285 – 6940 kal/gr
17.	Kec Cerenti dan Peranap	3.270,98 milyar ton	4510 – 4695 kal/gr

No.	Location	Reserve	Kuality/Kalori
<b>Kabupaten Indragiri Hilir</b>			
18.	Kec. Keritang, Kec.Kemuning dan Kec. XIII Koto Kampar	16.851.020,33 ton	6285 – 6940 kal/gr
19.	Kec. Keritang, Kec.Kemuning dan Kec. XIII Koto Kampar	60.480.000 ton	6100 – 6500 kal/gr

Source: Pemerintah Propinsi Riau, Dinas Pertambangan dan Energi

### **Demand Analysis**

The sector which many use briquettes coal is small industries such as chicken farms, restaurants (catering), dormitory / boarding schools, the burning of limestone, pottery, drying tobacco, burning brick / tile, drying rubber and so on. That industry in West Sumatra much enough, especially industrial chicken farms, restaurants (businesses catering), the burning of limestone and brick, pottery, drying tobacco and drying rubber. That means if the business briquettes developed in West Sumatra likely demand for briquette coal will also develop, and use of stoves briquette coal will also grow. Industrial manufacturing stove briquette coal in West Sumatra also well developed. In West Sumatra, there are also industrial vessels that usually only makes the products of clay in the form of kitchen equipment and fas. This industry also need fuel for combustion. Here are given the picture number of business units for each type of industry above.

### **Business Combustion Bricks**

In West Sumatra, business bricks is very much, as in West Sumatra are many hills that contain clay. Almost every district and town in West Sumatra has a business bricks. It requires fuel to burn bricks that have been printed. During this wait-burning brick using fuel in the form of firewood, which over time the amount of firewood that can be found less and less. With growing industry of making briquettes, coal in West Sumatra are expected fuel requirements for the business of burning bricks can be overcome besides that it is also expected to attempt making bricks can be more efficient by using fuel more cheaply.

### **Business Restaurant**

Business restaurant is very much there in West Sumatra, small restaurants (a stall) and house a large dining (restaurants). Several types of cuisine in West Sumatra require cooking process long as rendang, Kalio or type of curry. These foods require cooking process is long and, of course, requires much fuel. With the briquette coal in West Sumatra is expected business restaurants can more efficient.

Stove briquettes using three stoves have been found by experts briquettes in Tekmira (Sofaeti, 2006). Stove briquettes with three stove was only used briquettes in the furnace main, while the stove the second and the furnace three only get heat flows from the furnace first. Stove briquettes with three stoves are very good for restaurants, dormitories, hospitals and home detention. With a sense of the word, stove briquettes with three stoves are very efficient to use for cooking. That's why restaurants are using the stove with three stoves are very efficient in using fuel. A furnace that contains briquettes coal (stove primary) is used for cooking which requires high heat, stove two who got the heat flows from the furnace first medium-high heat used in cooking that does not require high heat such as steaming, cooking curry and stove third that also only a flow of heat from the furnace both are used for cooking which only requires low heat as for frying and even to dry rendang. Can be estimated how much fuel can be saved by the efforts restaurants if using stove-fuel briquettes. Moreover, using a stove with three wait for this.

### **Business Chicken Farm**

In West Sumatra, quite a lot there farm chicken, a small-scale or scale of being. No farm chickens in West Sumatra who use the briquettes, coal for heating chicks. Expected with the development of business briquette coal, farm chickens may use briquettes for heating fuel. By using briquette coal company's chicken farms can save fuel costs. Besides, the use of briquettes can be more secure because it does not worry about an explosion or other dangers.

### **Business Pottery**

Business vessels that produce goods of clay are also found in West Sumatra. Although not too much, but almost every area there. If during this attempt vessels only produce kitchen utensils (such as pots, pots and the like then), with the development of business briquettes is expected business vessels also grow. Stove briquettes made from the type of business of pottery. Certain industry cluster briquettes, coal will emerge and grow in West Sumatra. With the development of core business briquettes, coal is of other businesses that may be developed are: making business stoves briquettes, depot sales and distributor of briquettes, mining coal, the business of collecting coal is low-calorie, business transporting briquettes, business transportation shell oil palm and the type of other small business. We can estimate how much labor can be absorbed in the sector and industry cluster briquettes coal later.

### **Prospect Cultivation Brequets Judging from the interest Entrepreneurs (Prospective Investors)**

Of the ten respondents businessmen contractors coal sample, 80% answered willing to become entrepreneurs briquettes. They realized that the use of briquettes is helping communities get the fuel. However, they do not fully understand the technology briquette coal. Besides, some employers contracting coal mining located in Jambi are also interested and agreed to become entrepreneurs briquette coal. From interviewing the researcher with the official Chamber of Commerce (Chamber of Commerce and Industry) West Sumatra, they are also willing to invest the funds in the business briquette coal.

### **Prospect Cultivation Business Briquets Judging from Support Local Government Local**

From the results of interviews with officials of Mining and Industry in the three sample areas, all of them very supportive if the business briquettes coal was developed in West Sumatra. And they also promised to provide facilities for the management of a business license and is also willing to provide the facilities needed. Means there is no problem in the development of making briquettes of coal in West Sumatra in terms of support for local governments. Besides the three sample areas of Sawahlunto, Sijunjung and Solok there are three areas that many of the minerals of coal in West Sumatra, the Country Pesisir Selatan, 50 Kota dan Pasaman.

### **Closing**

### **Conclusion**

Prospects of business briquettes coal in West Sumatra is very good in terms of aspects of supply and demand. This is seen by many raw materials in the form of coal available, in West Sumatra or in Povinsi other adjacent to West Sumatra as Jambi, Bengkulu, South Sumatra and North Sumatra. For business briquette coal is expected to also be done by the Cooperative or Small and Medium Enterprises (SMEs), because the investment for business briquettes, coal can be exploited by small and medium enterprises. Special concessions in the West Sumatra coal briquettes can be made by employers (contractors) existing coal. From the results of interviews with several entrepreneurs (contractors) of coal that is all they agreed to do business briquettes coal if the coal used low-calorie, because it is a waste. Knowledge society of West Sumatra about technology business briquettes are very limited. By disseminating information about technology this business likely the prospective entrepreneurs and potential investors interested in

doing this business. It is expected that the role of local governments and also the person responsible in disseminating information and guidance briquette coal.

Besides it also means the use of briquettes coal and also knowledge about the price and the other is very necessary socialized in West Sumatra. Only few people of West Sumatra knew what it was briquette coal and use it. With increasing knowledge about business and use of briquettes in West Sumatra, it will be develop well. Socialization foremost should be given to the community prospective users, the businesses making bricks, entrepreneurs restaurants, businesses poultry, entrepreneurs vessels. Besides, it is also possible for the household to use the stove briquettes, because the high price of fuel oil and too difficult to get the gasoline.

### **Advice**

Prospects of business briquettes coal in West Sumatra is very good in terms of aspects supply and demand. With the government's role in disseminating information to potential consumers (public users) briquette coal as well as to prospective employers or prospective investors, certain this businesses can be a source of competitive advantage West Sumatra in general and some areas in West Sumatra in particular . Government motivation is needed to improving this business, in terms of management of a business license, training about technology and business management. Providing socialization of briquettes coal can be done by using the print media or electronic media such as broadcast TV Local is already common in West Sumatra.

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