ISSN: 2354-6751

Brickets in A Review of The Philosophy of Science

Dwi Annisa Fithry, Lisa Legawati, Dini Aulia Sari Ermal, Cici Maarasyid, Jusnita, Naia Salsabila, Amanda Febrian
Program Studi Teknik Kimia, Universitas Muhammadiyah Riau
Jalan Tuanku Tambusai Pekanbaru
Email: dwiannisa@umri.ac.id

Abstract

Review draft briquettes in context philosophy knowledge this knowledge explains How to approach knowledge and can help us understand the production process, use, and impact environment briquettes. in perspective philosophy knowledge, production briquettes involve the use method scientific, like chemistry and engineering machines, to change biomass to become material burn solid. It involved understanding deep about traits chemistry and physics material standards, as well as the conversion process of energy. Impact environment from the use of briquettes. Using briquettes can influence the ecosystem and impact on the environment. Approach philosophy knowledge helps We dig questions about ethics use briquettes and effort to reduce the negative impact. The Aspect of social economy- related to the production and use of briquettes, like impact on the community local, and how knowledge can help understand the implications of this. This study gives an understanding deep about how briquettes can see through the lens of philosophical knowledge. This thing gives contribution is important in integrating knowledge, ethics, and impact socio-economic in understanding We technology energy alternatives like briquettes.

Keywords: *Under review philosophy, briquettes, knowledge*

1. Introduction

Briquetted charcoal was first discovered and patented by Ellsworth BA Zwoyer of Pennsylvania in 1897. The Zwoyer Fuel Company produced it. After that, Henry Ford popularized charcoal briquettes made from wood and as a by-product from sawdust for car fabrication.

The industrial history of carbon activity began in ancient Egypt. It is also used in metallurgy and materials burning in 1550 BC, Papyrus, a text Egyptian medic, explained the use of various types of charcoal as therapy. Doctors later Certain that charcoal can treat disease. In one the script is also mentioned how good filter water with charcoal for cleaning or purifying. After that, charcoal was used for a long time to change the color of refined sugar, and type charcoal new like charcoal animals and bones first made in the 18th century.

Industry carbon active experience competition fierce and growth fast during ten years next. In some year finally, adsorption carbon active has increase as results from effort for reduce smell No delicious, pigment not delicious, dirt dangerous, and dirt others caused by traffic jams cities and development booming industry, as well for increase purity food, drink, and environment. However, improvement water quality through use method more water filtration Good as well as disposal poison for clean atmosphere and environment in a way whole increase need will carbon active.

Use material burn increases along with growth in population and industry. This can cause more thinning it reserve oil earth. To overcome a problem, this is a necessary effort to get source energy new and updated. Biomass is material of somewhat organic young origin from plants, animals, products cultivation, and waste industry agriculture, plantations, forestry, animal husbandry, and fisheries. Biomass especially consists of cellulose and lignin (often called cellulose lignin). Biomass-free ash and water-free have approximately 53% mass carbon, 6% hydrogen, and 42% oxygen. There is also some nitrogen, phosphorus, and sulfur, each lacking more than 1% of the total mass. Ash content wood is usually not enough than 1% [8]

Biomass is also cheaper than other sources of energy. Condition This can happen Because a

very large and usual amount results from six activity societies, however, with mark heat 3,000–4,500 cal/gr, energy still has very potential for exploitation, esp for generation energy. Biomass is also categorized as a material that burns carbon neutral [8]. Energy biomass is one source of energy renewable that can be obtained from sources of possible energy produced back, like plants that exist in nature. Examples of energy biomass are:

1. Biogas: drum fertilizer
2. Bioarang / bio briquettes: wood, straw
3. Bioethanol, bio propanol: yeast, corn and others.

According to Advances in Waste Processing Technology, 2020, refined and non-refined bio briquettes leave used black in hand is the best. Apart from that, briquettes must fulfill conditions as material burn:

a. Easy switched on;
b. Does not emit smoke;
c. Gas produced from burning no contain poison;
d. If saved for a long time, water content and yield burning no moldy; and
e. Show effort rate good combustion (time, rate, and temperature combustion).

1.1. Established standards for quality briquettes

For evaluating quality briquette charcoal wood, the standard is used Not only from Indonesia but also from other countries such as Japan, the united, United States, and Europe. This is done Because standard briquettes in Indonesia are still low compared to standard briquettes in other countries. Apart from that, the current standard for this arranged quality briquettes is SNI 01-6235-2000 for briquettes charcoal with material mainly wood. Condition good briquettes served in table 1. below:

Table 1.
Standard Brik et Charcoal Quality

No	Properties of Briquette charcoal	Japan	England	USA	Europe
1	Water content (%)	6-8	3-4	6	≤ 15
2	Substance evaporates easily (%)	15-30	16	19	-
3	Ash content (%)	3-6	8-10	18	≤ 3
4	Rate carbon bound (%)	60-80	75	58	-
5	Mark calories (cal/gram)	6000-7000	7300	6500	≥3576
6	Density (g/cm ^{3})	1-2	0.85	1	-
7	Firmness Press (kg/cm ^{2})	60	12.7	62	-

(Source: *Hendra, 1999 in uryanta And Wulur P and **COFORD Europe, 2010)

1.2. Test Characteristics Briquettes

a. Rate Water

Water Content: Water content of briquettes is comparison between deep water concentration briquettes and weight dry briquettes. Briquette weight dry saved during four hours in the oven at 105°C [9]. According to the previous study by [1]. During three hours, mashed with size 40 mesh and mixed with adhesive before printed. Internal water content study This range between 5.0210 and 6.3332% This is due to the fact that more high temperature carbonization material, increasingly lots of water contained the inside evaporates. Because the water vapor is produced the more a lot, the water content of the material becomes higher, so the time required becomes longer.

b. Rate Substance Easy Evaporate (Volatile matter)

Substance liquid, often called flying substances, affects the combustion process of briquettes. The number of volatiles is growing quickly as the temperature rises with fast, productive pores. Reaction This happens faster than an increase slow temperature.

c. Rate Ash

Ash is a substance of inorganic composition from metal or minerals and constitutes the remainder of non-combustion carbon. The more low-rate gray, increasingly Good quality briquettes are made.

Ash content tends to increase along with time carbonization and temperature, which go hand in hand with the theory that the longer the time carbonization, increasingly Lots ashes.

d. Carbon Content Fixed (Fixed Carbon)

Bound carbon content is the carbon fraction found in charcoal apart from the ash, volatile matter, and water fractions. Fixed carbon content or FC is the fixed carbon content found in solid fuels consisting of charcoal. The ash content and volatile matter values of charcoal briquettes affect the amount of bound carbon. Charcoal briquettes with low levels of ash and volatile matter will have higher levels of bound carbon. Carbon content bound influence mark heat burn briquettes charcoal. Higher carbon content

correlated with a rate of more ashes, and vice versa.

e. Mark Heat

Carbon value high bond _ increase mark heat briquettes. Research results show that the rate substance evaporates correlates negatively with the rate carbon remains [10]. This is because the rate of ash and volatile matter affects the rate of carbon.

Under construction briquettes, important to know mark heat Because This is the most important quality parameter for briquettes charcoal as material burns. Calorific value correlated directly with quality briquettes because the more tall mark heat produced by the material burn.

Under construction briquettes, important to know mark heat Because This is the most important quality parameter for briquettes charcoal as material burns. Calorific value correlated directly with quality briquettes because the more tall mark heat produced by the material burn. This is due to facts that the more tall temperature carbonization, the increasingly low rate of substance volatile inside charcoal along with enhanced temperature burning [9] Excessive ash can cause blockage pores on charcoal, which reduces wide surface charcoal [9].

f. Long on Fire (Time Soot)

Speed burning influenced by structure ingredients, content carbon bound, and level density. Because of the content low water, coal briquettes, and shells will light up faster than briquettes shell [9].

2. Base Philosophy Knowledge Philosophy

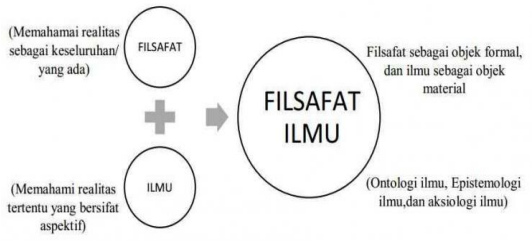

Figure 1. Relationships Philosophy with Science (Moon & Blackman, 2014)

Philosophy is knowledge about everything. It answered the question, " Whether in essence everything above the earth and under the sky?" All that exists This consists of two categories: objects life and objects dead. Everything consists of objects life, things death, and objects, like plants, animals, and humans.

Three main pillars of knowledge: ontology, epistemology, and axiology. The foundation of science is primarily directed at the components that are the pillars of support for the existence of science. There are three types of pillars, namely ontology, epistemology, and axiology. [5]

All types of knowledge own characteristics special about what (ontology), how (epistemology), and for what (axiology). Third base This each other related, so is not possible to discuss etymology deviate from ontology and axiology. For discussion based on thinking models, in fact, all three must always relate One each other [3].

3. Briquettes in review philosophy knowledge

Briquettes in Overview Ontology

Ontology discusses what you want Us to know, or how much Far We want to know. Ontology also studies essence and uses a base For obtaining knowledge, or in other words, the answer question is essence knowledge [3]
What is that briquettes? What are its nature and characteristics? To answer the question, someone must analyze various theories and do tests to support theory.

Briquettes in Overview Epistemology

History of science discussed in epistemology science. Essence and source knowledge, methods for obtain knowledge, and criteria validity knowledge is all topic discussion epistemology [9].

Knowledge created by experts to answer “what” and “why” questions about characteristic materials that exist in nature. Knowledge generated from effort to answer the “what” question is the fact that characteristic material from every briquette that has the same characteristics will produce knowledge descriptive about briquettes obtained through design trials and experiments. Whereas knowledge is produced from effort for answer to the question " Knowledge This obtained through a scientific process, and then appeared and was created something theory. Other researchers will Keep going to prove theory briquettes to strengthen to possibly perfect it Possibly

Briquettes in Overview Axiology

Axiology is a science that speaks about the mark or usefulness of something science. This includes values, and parameters for what is called truth or reality, like in life we, explore various areas, such as social, physical, material, and symbolic, each of which has its own aspect itself

By axiology, scientific knowledge related to good and bad knowledge related theories with human morals. Knowledge will be Good if human morals use it well, and will be bad if human morals use it for No good.
Like knowledge of others, study theory briquettes are beneficial for everyone.

- This study can help us to understand more good natural surroundings and the various processes that occur in them,
- Study process material naturally becomes more products beneficial for humans,
- Reduce pollution environment by utilizing waste.

Third base This each other so is not possible to discuss how etymology deviates of ontology and axiology. For discussion based on thinking models, in fact, all three must always relate One The same waste The reduction of a polluted environment.

4. Conclusion

Draft briquettes, a form of energy increasingly renewable, from perspective philosophy knowledge. Briquettes are material burn solids made _ from waste organic, biomass, or material others are compressed to become form solid. In analyzing this, we ponder a number of aspects important related to briquettes and science knowledge:

1. **Epistemology and Exploration Scientific**: Discuss How discovery and development briquettes relate tightly with epistemology, that is method We obtain knowledge. Discovery process briquettes, including the study of scientific and development technology, illustrate How knowledge grows.
2. **Social and Environmental Influences**: An Overview This also includes the impact of social and environmental from the use of briquettes. Consideration of ethics and responsibility answer social in face change climate and sources of power become part important in the analysis.
3. **Knowledge and Innovation Theory**: In context innovation briquettes, we consider theories of knowledge like positivism, and constructivism. How knowledge is applied in creating solution sustainable like briquettes is a question important thing to explore in an article.
4. **Ethics and Sustainability**: Searching balance between progress technology, sustainability, and values ethical. Philosophy knowledge gives framework Work For ponder consequence ethical in adopting briquettes as alternative energy.
5. **Future Challenges and Opportunities**: Challenges and opportunities faced in integrating briquettes to in society and infrastructure energy moment this, as well impact to development of knowledge and technology in the future.

This Study gives perspective philosophy knowledge and deep knowledge of how innovation like briquettes can change methods We understand, and develop knowledge. It also shows the importance of pondering the implications of ethical and social from technology energy renewable like briquettes in context development knowledge.

Bibliography

[1] Advances in Waste Processing Technology. (2020). In Advances in Waste Processing Technology. Springer Singapore. https://doi.org/10.1007/978-981-15-4821-5

[2] Batubara, B., & Jamilatun, S. (2012). Ignition and Combustion Properties Briquettes Biomass, Coal Briquettes and Wood Charcoal. Ignition and Combustion Properties Briquettes Biomass, Coal Briquettes and Wood Charcoal, 2 (2). https://doi.org/10.22146/jrekpros.554

[3] Fadli, MR (2021). Connection Philosophy with Knowledge Knowledge and its Relevance in the Era of Revolution Industry 4.0 (Society 5.0). Journal Philosophy, 31 (1). https://doi.org/10.22146/jf.42521

[4] Logan, B.E., Hamelers , B., Rozendal, R., Schröder, U., Keller, J., Freguia , S., Aelterman , P., Verstraete, W., & Rabaey , K. (2006). Microbial fuel cells: Methodology and technology. In Environmental Science and Technology (Vol. 40, No. 17, pp. 5181–5192). https://doi.org/10.1021/es0605016

[5] Lukum Hakim, Ishak Isa, MS (2006). USE OF CORN COB WASTE CHARCOAL BRICKETS AS AN ALTERNATIVE FUEL. Occupational Medicine, 53 (4).

[6] Mufid, M. (2009). Ethics and Philosophy Communication In Prenadamedia.

[7] Semnas , P., & Ft Unila , S. (2018). Effect of Carbonization of Activated Charcoal from Coconut Shell in the Adsorption Process to Improve Viscosity and Pour Point of Waste Cooking Oil (Vol. 1).

[8] Supriyatno , & Crishna, M. (2010). Energy Case Studies Alternative Briquettes

Rubbish Environment POLBAN Bandung Campus. Proceedings of the National Seminar on Chemical Engineering " Struggle" Development Chemical Technology for Processing Indonesian Natural Resources, 21.

[9] Batubara & Jamilatun, Advances in Waste Processing Technology, 2020.

[10] Yuli Ristianingsih*, Ayuning Ulfa, Rachmi Syafitri K.SJurusan Teknik Kimia, Fakultas Teknik, Universitas Lambung Mangkurat Pengaruh Suhu Dan Konsentrasi Perekat Terhadapkarakteristik Briket Bioarang Berbahan Baku Tandankosong Kelapa Sawit Dengan Proses Pirolisis, 2015