

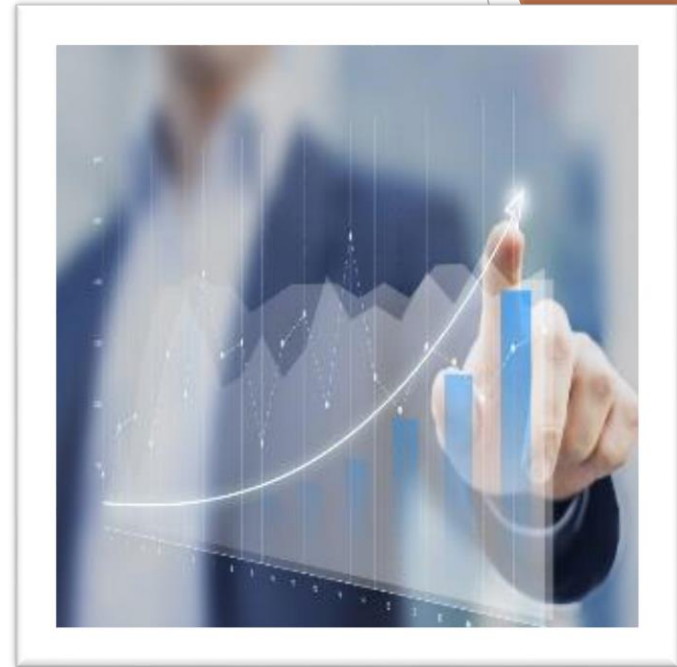


PT. WIRANATA ASIA PASIFIK



**Provide All Your
Commodity Needs**

OUR BioMASS BUSINESS



INTRODUCTION

Biomass is renewable energy that come from plant and it is sustainable resources that Indonesia own like wood pellets, charcoal, and palm kernel shell

A local factory based in Indonesia provide high quality charcoal whether in lump or briquettes with excellent quality with production capability reach 10.000 ton/month in total

Providing a material with high quality of coconut shell charcoal, hardwood charcoal, sawdust charcoal, charcoal briquettes which successfully reach a international market

Furthermore, Indonesia forestry own a tremendous wood resources with high sustainability and renewable that able to convert it to wood pellets as alternative energy

In addition, as world biggest palm oil producing country, Indonesia possess rich of palm kernel shell that able to be use as heating fuel



Charcoal

What is charcoal & briquette

Charcoal is a lightweight black carbon residue produced by removing water and other volatile constituents from animal and plant materials and briquette is a block of compressed **charcoal, sawdust, coconut shell, and palm kernel shell**. Charcoal is not like clay. Charcoal is a material without plasticity and can not be mold into shape without adding a binding material. Our charcoal briquette made with the best quality of raw materials from sawdust, palm kernel shell and coconut shell



Function of Charcoal

- Used in the architectural industry for simplifying concrete drying
- Used for cooking and for burning process
- Alternative energy that is environmentally friendly
- Shisha/hookah
- Activated carbon for water treatment, mining, and other Industrial



Charcoal

General specification

- Moisture content : <10%
- Fixed Carbon : >80%
- Ash content : <10%
- Volatile compound : <15%
- Heat of Combustion : >7000 Kcal/Kg
- Material :
 - Coconut / palm kernel shell
 - Tamarind wood, Rosewood, sandalwood, etc
 - Sawdust
- No spark No smoke No odor
- Good Burning Time

Coconut shell charcoal



- Moisture content : <10%
- Ash content : < 3%
- Dimension : > 0.5 mm, granule
- Suitable for activate carbon, industrial carbon material, shisha/hookah



- Moisture content : <10%
- Ash content : < 3%
- Shape : cube, hexagonal, cylinder
- Excellent for shisha/hookah

Hardwood charcoal



- Burning time : 4 – 5 hours
- No smoke no spark no odor
- Dimension : > 50 mm, lump
- Suitable for BBQ and grill, restaurant, heating, able to process to activate carbon



- Burning time : 5 – 6 hours (able to customize up to 10 hours)
- Shape : Hexagonal
- Length : 120 mm (able to customize)
- Width : 40 mm
- No smoke no spark no odor
- Suitable for BBQ and grill, restaurant, concrete drying, industrial combustion, heating

Sawdust charcoal



- Burning time : 3 – 5 hours
- Shape : Hexagonal
- Length : 150 mm up
- Hexagonal width : 40 mm
- No smoke no spark no odor
- Suitable for BBQ and grill, restaurant



Wood Pellet

What is Wood Pellet?

Wood pellet is a solid fuel that is produced by crushing and densifying waste timber like sawdust. The length is ≤ 32 mm and the diameter is generally 6~8 mm. Our wood pellet product made from the high quality trees, such as *Gliricidia Sepium* (Gamal), *Swietenia Mahagoni* (Mahoni), *Acacia Denticulosa* (Akasia), *Caliandra Calothyrsus* (Kaliandra) and *Leucaena Leucocephala* (Lamtoro).



Specification

- Density : $\geq 600 \text{ Kg/m}^3$
- Moisture : $\leq 10 \text{ \%wt}$
- Calorific Value : $\geq 4,200 \text{ Kcal/Kg}$
- Ash Content : $\leq 3.0 \text{ \%wt}$
- Fines : $< 2.0 \text{ \%wt}$
- Durability : $\geq 95\%$
- Chlorine : $< 0.05\% \text{wt}$
- Sulfur : $< 0.2\% \text{wt}$
- Nitrogen : $< 0.3\% \text{wt}$
- Sodium Content : $< 10 \text{ mg/kg}$
- Potassium content : $< 3000 \text{ mg/kg}$



- **Wood Pellets as an alternative to LPG**, oil or other solid fuels for domestic or community space heating and hot water provision
- **Home heating and cooking:** wood pellets are used in specialized pellets stoves. Compared with coal and firewood, it has higher combustion ratio, easy to store and transport.
- **Industrial boiler:** To reduce cost and air pollution, many factories adopts biomass industrial boilers to replace coal and heavy oil.
- **Electricity generation:** wood pellets can serves as fuel for power plant. The heat value of 10 thousand tons of biomass fuel equals that of 8 thousand tons of standard coal. And the pollutant emission is much less.



Palm Kernel Shell

What is Palm Kernel Shell

Palm kernel shell is a waste product from crude palm kernel oil processing facility which is through screening process to yield an acceptable quality that able to be used as renewable fuel for boiler at industrial, and meet client request. Our palm kernel shell resources are come from various region across Indonesia with huge amount of quantity and able to assure supply steadily.



General specification

- Caloric value: 3600 – 4200 kcal/kg
- Moisture: < 18%
- Ash content: < 12%



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