Fuels from Refined Lignite

Schwarze Pumpe Refining Plant





Welcome to LEAG!

Schwarze Pumpe Refining Plant

Energy from Lusatia and Central Germany has a new name — LEAG. The LEAG company, Lausitz Energie Bergbau AG, operates the Lusatian opencast mines, extracting about 60 million tonnes of lignite from there every year. Lausitz Energie Kraftwerke AG is responsible for the power plant park. Approximately 8,000 employees work at LEAG. This makes it the largest East German energy company and one of the largest private sector employers in the region. LEAG also owns the Schwarze Pumpe refining plant – one of the most modern and innovative of its kind in Europe.



employees work at LEAG

Turning raw lignite into a high-quality fuel

In other words, a raw material is processed to become a high-quality product. This is exactly what we do with five percent of the lignite mined in Lusatia, producing high-quality, high-energy fuels such as briquettes, pulverised lignite and fluidised bed lignite. By processing, drying and forming the lignite in the refining process, we increase its calorific value and improve its performance properties. In doing so, we pursue a clear objective at LEAG: On the one hand, we want to make the use of domestic lignite as efficient and as environmentally friendly as possible. On the other, we want to offer our customers a reliable and competitive energy solution. Schwarze Pumpe Industrial Park

Refining Plant Site Map



Fuels from Refined Lignite

At the refining plant, we produce REKORD briquettes, as well as LignoPlus pulverised lignite and fluidised bed lignite. Using modern dust extraction equipment, we ensure a low-emission operation. We not only meet the requirements of the Federal Immission Protection Ordinance (BImSchV) and the Technical Instructions on Air Quality Control (TA Luft) but also exceed them.



REKORD Briquettes

We produce briquettes in various forms suitable for the particular place of use and offer them as packaged, bundled or loose bulk goods. They are of high quality and are distinguished by their excellent heating performance: They are easy to ignite, burn excellently and have long-lasting embers.



LignoPlus Pulverised Lignite

LignoPlus is a highly refined, fine-grained and free-flowing premium fuel for boiler- and processcombustion. Its free-flowing form means it can be used with great versatility. It is used in many sectors of the economy as a safe and cost-effective alternative to natural gas, heating oil and coal.



Fluidised Bed Lignite

Fluidised bed lignite is a high-quality fuel and is ideal for combustion plants that use modern fluidised bed technology. This procedure for generating electricity and heat is distinguished by a high degree of efficiency and low emissions. Fluidised bed lignite has good flowability, a high calorific value and very good ignitability.



At a glance



From Raw Lignite to the Product

The raw lignite processed at the Schwarze Pumpe refining plant is delivered by train via the LEAG rail network from the Welzow-Süd and Nochten open cast mines. What is special about this raw lignite is its low ash content and sulphur content.



The dry plant with tube dryers

For the main lignite refining process, which is drying, we use the heat generated in the production of electricity at the neighbouring Schwarze Pumpe power plant. This cogeneration procedure is highly energy efficient and environmentally friendly.

1. The coal bunker

Every day, between 10 and 20 trainloads are delivered from the open cast mines and unloaded into the bunker, which has a capacity of 24,000 tonnes.

2. Preparation

The lignite, which is first crushed to 200 mm by blade crushers, still has a water content of 56 percent. It is further crushed in hammer mills and then classified using sieves. The resulting raw fine lignite has a granulation of 0 - 6.3 mm.

3. Drying

The coal is dried in a total of 16 tube dryers. In addition to the main product, which is dry lignite with various water contents, vapours consisting of a mixture of air, water vapour and carbon dust are also produced. The vapours are then cleaned in high-performance filters. The separated dust passes directly into the product stream for LignoPlus pulverised lignite.



4. Briquetting

Dry coal post-processing

In order to be able to produce quality briquettes, the granulation must be further improved. This is why the lignite is crushed again in hammer mills and classified using sieves. The dry lignite produced in this way for briquetting has a granulation of 0 - 2.5 mm and more than twice the calorific value of raw lignite.

Pressing

Under high pressure and without the addition of binders, the dry lignite for briquetting is made into a briquette at more than twice the density with a high form value.

Packing and Loading

We offer quarter, half and full stone briquettes in loose form. They are loaded onto the wagon by conveyor systems in order to be shipped by rail and transported to the local loading points for road transport. The proportion of packed briquettes is continuously increasing. The packaging and palletising process for the customer-friendly 10 kg bags and 10 kg foil packs, as well as the 10 or 25 kg bundles at the packaging plant is fully automated. Efficient packaging machines in the bundling hall

5. LignoPlus Pulverised Lignite

LignoPlus pulverised lignite is produced in the milling section of the plant from dry lignite with a water content of approximately 10.5 percent. The fluidisable fuel is obtained through a process of crushing in roller mills and from the drying process filter systems.

It is transported pneumatically to the five stock and loading silos with a total capacity of 5,400 m³. The loading equipment for rail and road shipping is positioned under these silos.

6. Fluidised Bed Lignite

Fluidised bed lignite is produced in the drying process with a water content of 18 per cent and a granulation of 0 - 6.3 mm. The silo and loading facility for the fluidised bed lignite consists of two silos with a total capacity of 2,400 m^3 and a loading system for rail transport.

7,800 m³ Capacity of silos for LignoPlus pulverised lignite and fluidised bed lignite



Loading plant for LignoPlus pulverised lignite

Central Systems and their Parameters

1 Raw coal bunker:

Capacity 24,000 tonnes

3 Blade crusher and 5 Hammer mill: Crushing from 250 mm to 6.3 mm

6 Tube dryer:

Diameter 5 metres; length 8 metres; Heating surface $4,000 \text{ m}^2$

Milling facilities for pulverised lignite:

3 mills with a capacity of 180 tonnes per hour

13 Briquette press:

19 presses, each with four lines; up to 80 briquettes per line per minute

4 15 Loading:

Separate for **briquettes** (loose or packed), **LignoPlus pulverised lignite** (5 silos totalling 5,400 m³), **Fluidised bed lignite** (2 silos totalling 2,400 m³)





Definitely worth visiting

We are delighted that you are visiting our company and are glad to show you our facilities. Your safety is our utmost priority, and is also an integral part of our philosophy. We would therefore ask that you read and strictly observe the following instructions while you are on site.

Wear sturdy shoes, a safety vest, a helmet, ear protection and overalls.



Smoking and the handling of fire or naked flames are prohibited at our plant.



You may not take photographs or use telephones at our plant.



Please use only the marked visitors' paths and always follow the instructions of your guide.



Please do not touch any moving machine parts and do not perform any switching operations at aggregates.



In the unlikely event of a fire or during start-up and shut-down operations, follow the instructions of the operating personnel and leave the plant immediately.





Lausitz Energie Bergbau AG Refining Plant An der Heide 03130 Spremberg/Germany

Production T +49 35646 96965

Sales T +49 3564 94100 veredlung@leag.de

