Turning your waste into **clean energy**.

Bernburg energy plant (EAB) – for safe and effective energy supply

A company of the Tönsmeier Group
Waste technology is gaining steam.

The EAB Bernburg energy plant, in which the chemical and pharmaceutical company Solvay as well as the Tönsmeier Group has been in operation since 2010. The thermal waste treatment plant is putting the energy supply for the Bernburg Solvay location on a firmer footing; the previous power plant ran exclusively on gas. Now also refuse-derived fuels (RDF) serve as the energy source. The generated steam is either used directly at the Solvay plant or transformed into electric energy by means of a turbine. With an energy efficiency of 0.78, the EAB heating power plant clearly surpasses the requirements set out by the Waste Framework Directive.

The facility sets a good example in other respects: for instance, tight controls based on a multilevel quality assurance system ensure the highest possible safety*. Suppliers are obliged to maintain fuel quality and document it prior to their first delivery. The results are verified by EAB and external auditors on site at the supplier’s facility, on delivery and during the combustion.

This also includes a computerized goods inward reporting system with screening and registration of the RDF at the gate. Samples are regularly taken and analyzed in the laboratory. Additionally, there is a two-step visual inspection at the bunker gates and in the actual bunker. For continuous monitoring and documentation of exhaust air, the facility is equipped with measuring points for individual data collection as well as a certified remote monitoring system of emissions values. It transmits the recorded data directly to the environmental authorities.

RDF are waste components which have been treated according to given specifications (municipal, commercial and industrial waste) with a defined calorific value. They are recovered by Tönsmeier, among other sources, at their Oppin location in Saxony-Anhalt – by means of special sorting technologies in mechanically operated treatment plants for household and industrial waste. During the treatment, metals and harmful combustibles are separated and the high-calorific-value components are shredded. Depending on the consistency of the supplied material and the required treatment depth, more than one ton of RDF can be produced from two tons of waste. In terms of calorific value, this is comparable to some brown coal types or good-quality firewood.

A good car radio has RDS. A good power plant has RDF.

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These fuels are used to produce steam in the heating power plant, which not only complies with all legal requirements for the protection of individuals and the environment, but is also equipped with highly efficient state-of-the-art technology. For instance, the integrated flue gas filtering is listed by the EU as one of the “best available technologies”. In order to keep emissions as low as possible, flue gases generated during combustion pass through a multilevel filtering process. This is where, among others, the SOLVAIR® process comes into operation. It is well-tried and makes it possible to easily comply with the threshold values set in the 17th Federal Immission Protection Ordinance (BlmSchV).

Waste meets high tech: perfectly normal in Bernburg

"Complies with the legal requirements for certified waste management operators laid out in Section 52 of the Waste Recycling and Management Law"
The results are highly presentable.

If, as in the case of Bernburg, renewable energies have to be ruled out due to the local conditions, waste recovery in the form of refuse-derived fuels represents an interesting alternative. Solvay has a very high steam demand: in order to produce two tons of soda, it needs more than three tons of steam. The use of RDF ensures a sufficient, continuous and reliable supply of steam power.

But the advantages do not stop there: the environment and our climate also benefit from this method. This is because non-renewable resources like coal or natural gas, which otherwise would have to be used, are saved. Besides, the carbon dioxide released in the combustion of alternative fuels is much less harmful than the methane gas which would be generated in the case of landfills. The thermal utilization of refuse derived fuels is significantly more friendly to the environment than coal combustion.

With their investment in an independent national energy supply, both Solvay and Tönsmeier are creating and securing jobs in the region. The new heating power plant helps to safeguard the future of the Solvay facility and its more than 400 employees, even in times of a challenging economy. Furthermore, 50 new jobs have been created. About the same number can be added again, counting also external service providers in the region, e.g. in sorting facilities, logistics providers and truck workshops.

A power plant of the latest generation:
We get the best out of it!

- Utilization of refuse derived fuels (RDF) is climate-friendly
- Waste is processed efficiently, not simply disposed of
- Energy efficiency of 0.78 easily surpasses legal requirements
- Preserves non-renewable resources like coal or natural gas
- Sophisticated flue gas filtering reduces harmful substances
- Certified safety thanks to close monitoring system
- Jobs in the region are created and secured
- Security of disposal is at the highest level
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