

Stora Enso takes lignin further

The lignin extracted from the pulp production process is a potential new product for the pulp and paper industry. Stora Enso sees lignin as an attractive business opportunity. **TEXT** Andreas Liedberg

In 2015, a new lignin extraction plant successfully started up at Stora Enso's Sunila mill in Finland. Part of the extracted lignin is used in the lime kilns to replace natural gas which has reduced the fossil CO₂ emissions considerably. At the same time large quantities of lignin now are available for the world market. This new lignin extraction plant utilizes Valmet's LignoBoost technology. Stora Enso has been researching lignin and its attributes for more than a decade and lignin is seen as an attractive business opportunity. The company anticipates that the initial markets will be in, for example, the construction and automotive industries where lignin offers a sustainable alternative to the phenols used in plywood and wood paneling glues and the polyols used in foams. Stora Enso is also developing other applications.

The LignoBoost delivery

Stora Enso Sunila mill is equipped with a 50,000 tonnes/year LignoBoost plant from Valmet, a storage facility for moist lignin, a lignin dryer, dry lignin storage, lignin dust burners in the lime kilns and a packaging line. The moist lignin is dried in a ring dryer with off-gases from the lime kilns. The dried lignin, with a dry solids content of about 95%, is pneumatically conveyed to the lime kilns and the packaging line.

Going forward

Valmet's LignoBoost technology works as expected, and production of kraft lignin has now reached commercial volumes. One big benefit of installing LignoBoost is that the load on the recovery boiler is lowered, which allows increased production of pulp. More and more mills are looking for additional products to complement traditional ones. Lignin is a renewable substance that works very well as a fuel, as at the Sunila mill, but it can also be used to make many different products like biomaterials. The pulp and paper industry is in an excellent position to benefit from these opportunities. ■

CONTACT PERSON
Anders Larsson
Director, Biomaterials
anders.larsson@valmet.com
Tel. 031-50 10 00



Stora Enso started its LignoBoost plant at the Sunila mill in 2015. The lignin is being used as fuel in the lime kilns, which has considerably lowered the CO₂ emissions from the mill. Stora Enso has researched lignin and its attributes for more than a decade and lignin is seen as an attractive business opportunity.

Growth in bio-based products

In the future more and more pulp mills will become biorefineries that, in addition to pulp, produce other bio products, adding new sustainable business for the mills.

One of the new products is lignin, which is removed from the wood fibers in the pulp mill's cooking process. Lignin is normally burned in the recovery boiler but with Valmet's LignoBoost it can be separated from the mill's liquor cycle. It has been estimated that the total annual global production of lignin in the pulp and paper industry is more than 50 million tonnes. This means that lignin is a prime candidate as a raw material for a wide range of products that are today manufactured from fossil sources. For example, according to Pöyry Consulting's "Biosight up to 2025" report, the market for bio-based plastics is expected to grow by 1.36 million tonnes between 2013 and 2018.