Interreg North-West Europe WOW!

EUROPEAN UNION

European Regional Development Fund

BIO-OIL

MARKET POTENTIAL - BIO-OIL FROM SEWAGE

Origin:	Cellulose recovered using screening
Customers:	Industry in need for process heat, transport sector
Application:	Process heat / electricity fuel-blending

Sewage contains valuable substances that can be used circularly as a raw material for biobased products. However, this potential is currently underused. The European Interreg project WOW! wants to change this by extracting cellulose, lipids and fatty acids from sewage and producing bio-char (activated carbon), biofuel, bio-oil, acetic acid and PHA bioplastics. This factsheet summarizes the results of the Market Potential Study of bio-oil. Click here to read the full report.

PRODUCTION:

For the production of bio-oil, cellulose obtained from sewage by screening is used as a feedstock. In the first step cellulose is recovered, dewatered and then dried. In a thermal degradation process (pyrolosis) the cellulose is converted into biochar, bio-oil and acetic acid.

QUALITY REQUIREMENTS:

It must be ensured that the quality of the bio-oil will be within a close range. Solids content in the fuel will add to additional particulate matter. The boiler or furnace used must be able to handle the particulate matter load.

PRODUCTION QUANTITIES EUROPEAN UNION:

194,000,000 tonnes fossil fuel per year for space and process heating.

COLLECTABLE QUANTITY AT STP IN NORTH WEST EUROPE (THEORETICALLY):

640,000 tonnes per year bio-oil.

MARKET PRICE FOR CONVENTIONAL PRODUCTS:

330 – 560 €/t comparable to heavy fuel oil on an energy basis.

MARKET PRODUCTION PRICE FOR BIO-OIL FROM SEWAGE:

By-product of biochar production

APPLICATION:

The lower and higher heating value of the prduced bio-oil from sewage is in a comparable range to other bio-oils. The biooil can be used for process heat and fuel blending.

DRIVERS:

The main advantages of bio-oil are sustainability and legal requirements to enhance the renewable energy share in the European Union (RED II).

MORE INFORMATION:

Please contact: Inka Hobus hob@wupperverband.de