

MARKET POTENTIAL - ACETIC ACID FROM SEWAGE

| | |
|---------------------|--|
| Origin: | Cellulose recovered using screening |
| Customers: | Sewage treatment plants, agriculture production of CxHy |
| Application: | Carbon dosage (STP e.g digester, denitrification) or pesticide (agriculture) |



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 acetic acid. [Click here](#) to read the full report.

PRODUCTION:

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

QUALITY REQUIREMENTS:

The quality requirements represent a major challenge for the use of acetic acid derived from sewage. In addition to the organic asset, the aqueous fraction includes phenolic compounds, ester, acetals, ketones, formic acid, and many others. These minor components may be critical for some applications.

PRODUCTION QUANTITIES WORLD WIDE:

10 Mio. tonnes acetic acid per year.

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

400,000 tonnes per year of an aqueous fraction containing organic acids (7% solution).

MARKET PRICE FOR CONVENTIONAL PRODUCTS:

0.5 - 0.8 €/kg acetic acid

0.1 €/kg pyroligneous acid (diluted)

MARKET PRODUCTION PRICE FOR ACETIC ACID FROM SEWAGE:

By-product of biochar production

APPLICATION:

It can be used as carbon dosage on sewage treatment plants to improve the denitrification or biological P-Elimination, but the produced amount is relatively low.

DRIVERS:

The main drivers for this market is sustainability and the direct use at the sewage treatment plant.

MORE INFORMATION:

Please contact: Inka Hobus hob@wupperverband.de