

ADVANCED
BIOFUELS
COALITION

LSB



Industry platform driving development of advanced biofuels in Europe

LSB is a coalition of leading advanced biofuel producers and technology developers committed to making a significant contribution to meeting the EU ambitions of reducing transport emissions. Sustainable advanced biofuels are a fast track solution and they bring multiple benefits in terms of CO₂ reduction, investments, increased revenues for farmers and forestry, and an increase in energy security.

CLARIANT

www.clariant.com

Clariant is a focused and innovative specialty chemical company. "Focus on innovation and R&D" as well as "Adding value with Sustainability" are two pillars of the company's corporate strategy, which are reflected in Clariant's offering of integrated technologies and solutions for converting agricultural residues such as wheat straw, rice straw, corn stover and sugar cane bagasse. Its sunliquid® technology offers such a fully integrated process design, built on established process technology using enzymatic hydrolysis, to sustainably produce cellulosic sugars & ethanol from agricultural residues.

UPM's Lappeenranta Biorefinery is the world's first producer of wood-based renewable diesel and renewable naphtha for the transport and petrochemical sectors with a capacity of 130,000 tonnes. UPM BioVereno reduces greenhouse gas emissions by over 80%. UPM has announced its intention to grow in advanced biofuels and is studying an investment option for another biorefinery with a 500,000-tonne capacity.

UPM **BIOFORE**
BEYOND FOSSILS



www.upmbiofuels.com



ENVIRAL
Member of Enviengroup

www.enviengroup.com

ENVIRAL Slovakia, the first bioethanol producer in Slovakia is part of ENVIEN group – the leading CEE biofuels holding with 9 companies in 4 countries producing both conventional biodiesel and bioethanol. Since 2007 ENVIRAL operates production plant in Leopoldov Slovakia with current annual production capacity of 145.000 m³ of bioethanol. ENVIRAL is actively looking at the development of advanced biofuels production. www.enviengroup.eu

St1 is a Nordic energy Group whose vision is to be the leading producer and seller of CO₂-aware energy. St1 focuses on fuels marketing, oil refining, advanced biofuels, industrial wind power and geothermal heat. St1 also operates waste to bioethanol plants in the Nordics. Based on St1's proprietary technology, a first of a kind Cellunolix® unit that produces advanced ethanol from saw dust, is in operation in Kajaani, Finland. Company's turnover in 2018 came to 6,9 billion euros. www.st1.eu

st1

www.st1biofuels.com

TechnipFMC

www.technipfmc.com

TechnipFMC is a global engineering and construction company in subsea, onshore, offshore and surface technologies contributing to the energy transition. TechnipFMC supports companies to grow and implement their sustainable technology which contributes to an improved global environment. Together with BTG-BTL we offer full service implementation of their Fast Pyrolysis technology and recently have been awarded two turn-key EPC projects in Finland and Sweden. With TechnipFMC's complementary FCC technology knowledge we can offer a complete Biomass-to-Fuel value chain to our clients.

Enerkem makes biofuels and renewable chemicals from urban waste. With its proprietary technology, Enerkem converts non-compostable and non-recyclable municipal solid waste into methanol, ethanol and other chemicals. The company offers a smart alternative to landfilling and incineration and helps develop a circular economy where waste becomes a resource to make sustainable products. In Europe, the company is partnering with world-leading companies comprising Air Liquide, Nouryon (formerly AkzoNobel Specialty Chemicals), the Port of Rotterdam and Shell for the construction of a waste-to-chemicals and biofuels plant to be located in the Port of Rotterdam.



www.enerkem.com



www.ored.com

The Ørsted vision is a world that runs entirely on green energy. Ørsted develops, constructs and operates offshore and onshore wind farms, bioenergy plants, innovative waste-to-energy solutions and provides smart energy products to its customers. Headquartered in Denmark, Ørsted employs 6,080 people. Ørsted's shares are listed on Nasdaq Copenhagen (Orsted). In 2018, the group's revenue was EUR 10.7 billion. www.ored.com

SEKAB is a producer of bio-based Chemicals and Biofuels in Sweden. ED95 and advanced forest bioethanol are key biofuels. We contribute with CELLUAPP® technology, transforming forest- and agricultural waste into biobased sugars, biogas and lignin, in many value chain projects in the EU. www.sekab.com



www.sekab.com



www.btgworld.com

BTG (www.btgworld.com) is private consultancy, project development and research & technology development company specialized in bioenergy, advanced biofuels and biobased materials. BTG is a SME and based in the Netherlands. Through its' spin-off company BTG-BTL (www.btg-btl.com) the flash pyrolysis technology is rolled-out. Pyrolysis oil production plants have been sold in The Netherlands, Finland and Sweden. BTG-BTL is, in partnership with TechnipFMC, focusing at co-processing of crude pyrolysis oil in existing refineries, while new BTG-companies will focus at the development of new stand-alone biorefineries producing advanced biofuels based on pyrolysis oil.

Global Bioenergies is the only company in the world to have developed a conversion process for renewable resources (residual sugars, agricultural and forestry waste) into isobutene, one of the petrochemical building blocks that can be converted into ingredients for cosmetics, petrol, kerosene, LPG and plastics. Global Bioenergies continues to improve the performance of its process, conducts trials on its demo plant in Germany and is preparing the first full-sized plant in a Joint-Venture with Cristal Union. Global Bioenergies is listed on Euronext Growth in Paris.



www.global-bioenergies.com



www.neot.fi

North European Oil Trade (NEOT) is a significant fuel procurement company in the Baltic Sea region with a revenue of EUR 5.5 billion. Annually NEOT provides around 7 billion litres of competitive and sustainable fuel solutions for its owners St1 and SOK in Finland, Sweden and Norway. Together with our owner St1 we are developing renewable diesel production into St1 Gothenburg refinery focusing on various feedstocks. Additionally, together we have developed advanced renewable ethanol production capacity from forest industry residues in Finland.

www.sustainablebiofuelsleaders.com

