



Partnership

Lead partner:

- Savonia University of Applied Sciences, Finland

Partners:

- Ostfalia University of Applied Sciences, Germany (WP4 leader)
- Marshal Office of Lower Silesia, Poland
- Klaipeda University, Lithuania
- Mälardalen University, Sweden
- Estonian Regional and Local Development Agency, Estonia
- University of Eastern Finland, Finland

Key technology provider and expert of microbiology and the bioprocess for Pilot A investment and testing:

- Finnoflag Oy, Finland

Service provider for the Polish tests and the related activities:

- Wroclaw University of Technology

Lively period around Pilot A



Adj. Prof. Elias Hakalehto at the final phase of the preliminary testing of ABOWE Pilot A at Savon Sella waste water treatment plant in April 2014.

Between December 2013 and May 2014 Pilot A was completed in Kuopio, transferred to the first testing site in Kuopio, tested there, trained to future testing personnel, nationally presented in the Finnish Science Centre Heureka, Vantaa, transferred to Poland and started up in the second testing site.

The goals of the ABOWE project and the Pilot A designed and manufactured in Finland by Savonia University of Applied Sciences is to provide "proof of concept" on the ways,

how biomass based waste materials could be used for producing, with the help of microorganisms, biofuels, organic chemicals, fertilizers and nutrients in an economically feasible way.

A coherent objective is to achieve industrial action which is implementing same principles that are maintaining the ecosystems. In Nature there are not e.g. landfills anywhere, but all organic material is recycled.

Future biorefineries are industrial fields, where side-streams from industries and municipalities are treated and refined into useful products in successive process solutions. All waste is then integrated as a raw material into them.

Elias Hakalehto, Microbiologist and Biotechnologist, Finnoflag Oy, Adjunct Professor in Biotechnical Microbe Analytics, University of Eastern Finland, Kuopio





Associated partners

Six testing sites in five countries:

- Farm of Rima Dauksiene, Lithuania
- Savon Sellu Oy, Finland
- OÜ Kaarli Farm, Estonia
- ZGO Gać Ltd, Poland
- Vafab Miljö AB, Sweden
- Hagby Gårdsfågel AB, Sweden

Other associated partners:

- Telemark University, Norway
- North Savo Centre for Economic Development, Transport and the Environment, Finland
- Jätekuikko Oy, Finland
- Berndt Schalin Board Advisors Oy, Finland

Pilot A Training and the 1st Testing period completed



International training of Pilot A biorefinery operation was organized in February in Kuopio. Two-day theory part was followed by five-day practical part at Pilot A at Savon Sellu waste water treatment plant.

As participants there were future testing persons from partner countries; four from Poland and two from Sweden. As trainers were experts from Finnoflag Oy and Savonia UAS Technology unit.

The first testing period of Pilot A took place at Kuopio, Finland at Savon Sellu cartonboard factory's waste water treatment plant during February and March 2014.

Products from these test runs were:

- Ethanol
- Butanol
- 2,3-butanediol
- Organic acids
- Hydrogen
- Fertilizer biomass/ biogas
- Purified water
- Decreased waste treatment expenses
- Lesser environmental and climate load

Testing report and other reports based on Finnish testing period will be soon published at the ABOWE web-site.





Pilot A at Heureka

The presentations and showing the Pilot A can be seen as videos through the ABOWE web-site.

Introductory Seminar and Investor Event on Finnoflag Biorefinery Technology and the Pilot plant at Heureka



Introductory Seminar and Investor Event on Finnoflag Biorefinery Technology and the Pilot plant was held on 25.4. at Finnish Science Centre Heureka, Vantaa. Adjunct Professor Elias Hakalehto held the main speech about Finnoflag biorefinery technology and its impacts. Finland-scale feedstock potentials were introduced by researcher Tuomas Huopana, University of Eastern Finland.

Almost 90 interested stakeholders and potential investors participated and approximately dozens via live netstreaming. Pilot A was showed in the Heureka's exhibition yard.





Pilot A in Poland

The investor event around the Polish implementation opportunities in Wroclaw on 2.7.2014, including a site visit to Pilot A testing site in Gac.

Pilot A transferred to Poland and the 2nd Testing period started



Pilot A was safely transferred to Gac, Poland. Photo: Mika Ruotsalainen

After Heureka event the journey of Pilot A continued to the Polish testing site ZGO Gac Ltd, a regional waste management centre in Lower Silesia. As the primary feed-in potato waste from a nearby chip factory is used in the Polish tests. Also separately collected biowaste will be gradually added. The Polish tests will last until July.



Provisional testing in Poland with potato waste and sorted biowaste has now given some good results in the biochemical production by the end of June 2014.





National Award

ABOWE was chosen as the winner in series Applied Research Knowledge and Innovations

ABOWE won the Finnish KÄRKI (SPEARHEAD) competition

ABOWE project was chosen as the winner among the projects of all Finnish universities of applied sciences in the series Soveltava tutkimustieto ja innovaatiot (Applied Research Knowledge and Innovations) in the national KÄRKI (SPEARHEAD) 2014 competition.

The Award was announced on 13.5.2014 at Sibelius House in Lahti as part of the Evening Gala of national Universities of Applied Sciences Days. Project Manager Ari Jääskeläinen from Savonia University of Applied Sciences received the Award on behalf of the whole ABOWE team. He also brought greetings from Adjunct Professor Elias Hakalehto who was participating in Biotech Japan 2014 Conference.

The thanks speech as well as greetings can be read from the ABOWE web-site.



Photo: Jussi Nahkuri

