Deliverable T6.3.1 Workshop for creating a direct exchange component for Nutribute

Due date of deliverable: M30

Responsible organisation for this deliverable: John Nurminen Foundation

EUROPEAN UNION
European Regional
Development Fund

Interreg
Central Baltic

NutriTrade
Nutrient Offsetting for the Baltic Sea

List of content

Introduction

In Pilot Nutrient Exchange, opportunities related to the utilisation of excess nutrients by someone in demand of nutrients have been mapped, both in selected industries, namely biogas and pulp and paper (D T6.1 and D T6.2), and in organisations potentially involved in the Nutribute platform (D T6.3). The conclusions so far include

- Nutrient Exchange is at an early stage of development and the number of companies currently involved is limited.
- At the same time, the location of supply and demand next to each other is crucial as one of the main obstacles is the transportation cost involved.
- There are existing nutrient platforms focusing on information sharing and networking. However, the only online market (eMarket initiated by ESPP) is not in operation any more due to lack of funds.
- There are functional databases for recycled materials in the frameworks of circular economy, industrial symbiosis and material use efficiency.

Workshop

The aim of Nutrient Exchange Workshop, organized 22 March 2018 in Helsinki, was to plan the development of a nutrient exchange component in Nutribute. There were first two expert presentations on the topic, followed by a group discussion and ideation. Due to the current small volumes of recycled nutrients, the idea was to look for cooperation opportunities:

- The first presentation gave an overview of a well-functioning, facilitated database for industrial symbiosis. The participants discussed the feasibility of including nutrients in this context.
- The second presentation focused on available opportunities for joining forces with an existing platform specialized on nutrient exchange. Several alternatives were discussed.

Presentation on the Finnish Industrial Symbiosis System (FISS)

Ilkka Hippinen from Motiva presented the Finnish Industrial Symbiosis System (FISS), which is a concrete tool for facilitating circular economy. In fact, FISS is a cooperation model, which aims at helping companies and other organisations to create partnerships to efficiently use and share their resources and to develop new business opportunities related to circular economy.

In industrial symbiosis, companies generate added value by effectively utilizing each other's side streams, technology, expertise, or services. Thus the side stream or waste of an operator turns into a productive resource for another and saves both parties' costs while also reducing adverse environmental impacts. In the best case, the industrial symbiosis creates commercially successful high value-added products.

The FISS model is based on an active promotion of industrial symbiosis, i.e. facilitation and co-development. Motiva acts as a national coordinator and is building a network of regional practitioners to activate companies to exchange information and to facilitate match-making between resource providers and users on the local level (Figure 1). In early 2018, activities are already underway in 14

regions and more than 650 companies are involved.

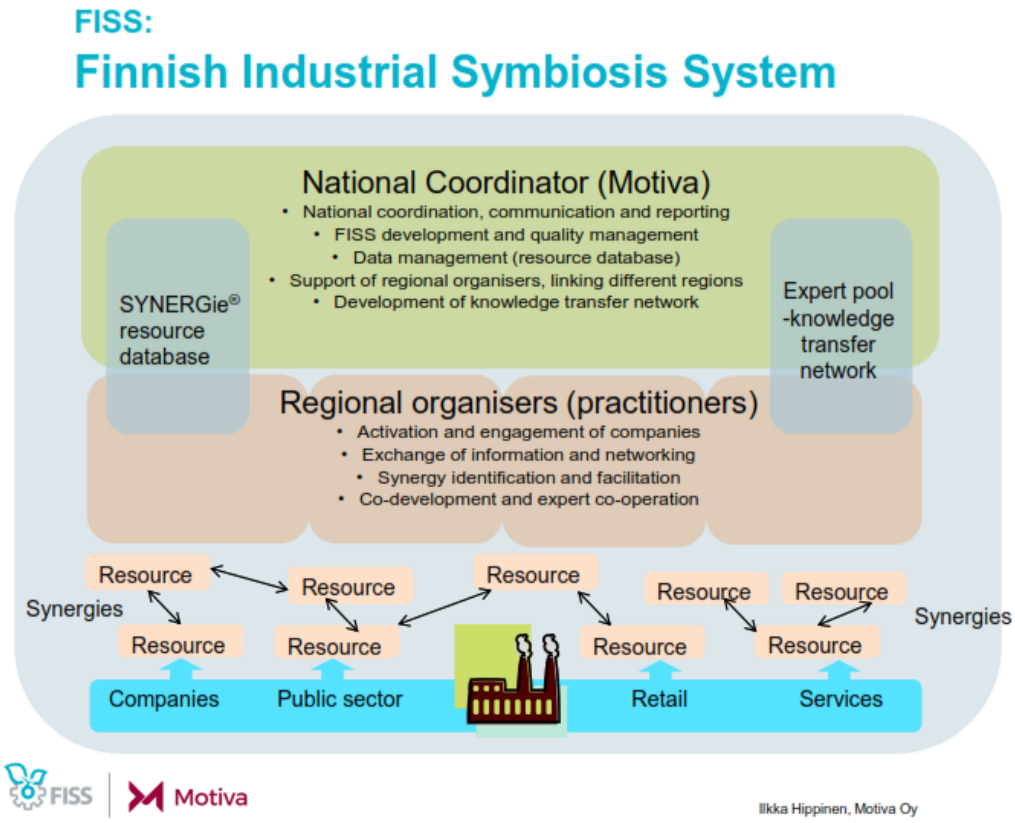


Figure 1. An overview of the Finnish Industrial Symbiosis System

A central tool in this activation work is resource database "SYNERGie" including information of material supply and demand. Only regional facilitators appointed by Motiva have access to the database. They organize activation workshops which aim at encouraging companies to exchange information and to network, and list identified synergies to interested companies. They in turn negotiate to implement the symbioses. In other words, contracts take place between companies, the facilitator is only a matchmaker. By 2018, 4841 resources have been listed and more than 2500 synergy opportunities have been identified.

"SYNERGie" database was originally developed for the British National Industrial Symbisis Program NISP. It includes information on available and wanted resources (materials but also expertise, business premises, machinery and logistics). For materials (including wastes, by-products and raw materials), the information provided is as follows

- Resource + its description
- Amounts+ specifications (batch/continuous)
- Site
- Have / want
- Type: Batch / continuous
- Valid from___ to ____
- Total (used, remaining) quantity

- Unit of measure
- Waste hierarchy position: Recycled / Waste to energy etc
- Keywords
- Monetary value
- Potential benefits
- Contacts

Presentation on MoE digital marketplace for wastes and side streams

Ilkka Hippinen also presented the idea of a forthcoming marketplace for wastes and side streams to be developed by the Finnish Ministry of the Environment (MoE). The motivation for the development of such a platform derives from the regulatory limits for waste trading by public waste management companies. As a result, the MoE plans to create an open marketplace where companies can offer their wastes/side streams. If realised, Synergie will be merged to the marketplace as it does not make sense to maintain two parallel systems. According to plans, the marketplace will be available in spring 2019.

Presentation on secondary products and existing marketplaces

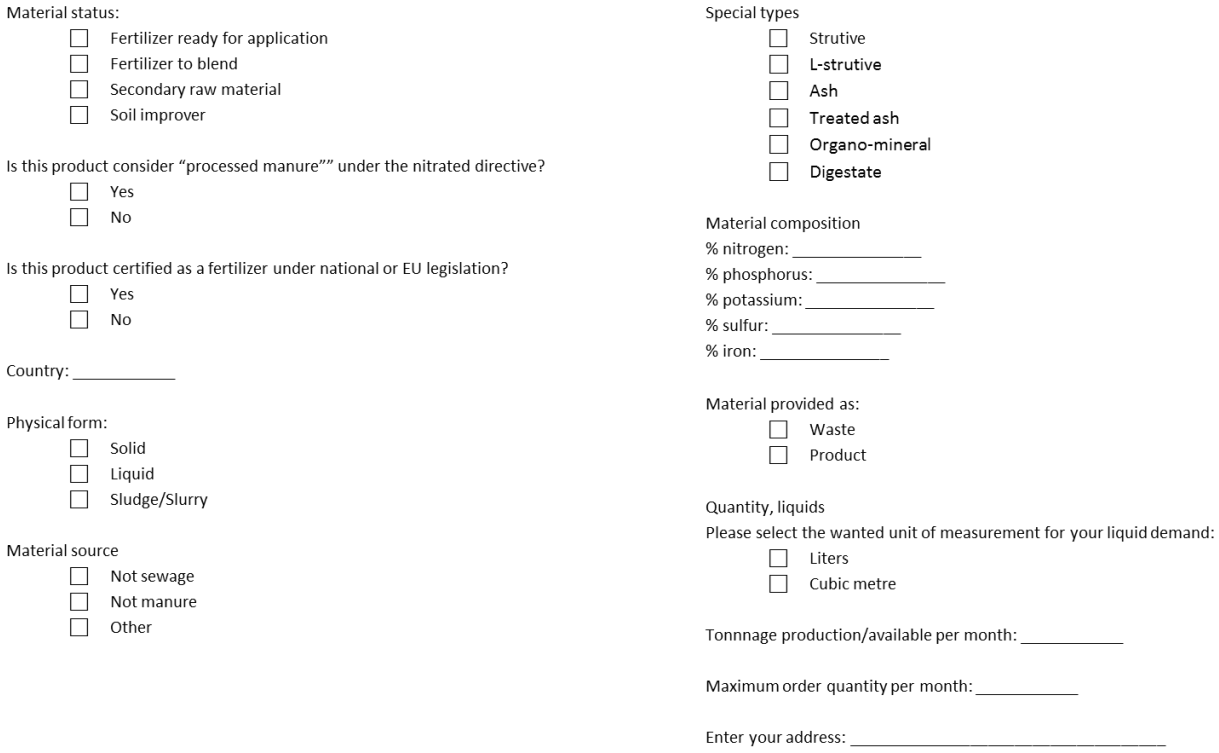
Jenny Wallström from Anthesis Enveco gave an overview of implemented or planned measures to reduce eutrophication in Sweden and Finland and possible use of their secondary products. The side products mainly include biomass and removed sediments and have potential in energy production, as a fertilizer and as feed/food.

In a review of existing mechanisms for recycled nutrients, 7 platforms and organisations were identified:

- Nutrient Platform, Netherlands
- European Sustainable Phosphorus Platform (ESPP), Belgium
- eMarket (www.e-market.phosphorusplatform.eu)
- Sustainable Phosphorus Alliance, US
- The UK Nutrient Platform, UK
- Baltic Sea Action Group (BSAG), Finland
- German Phosphorus Platform, Germany

Most of the platforms serve as a knowledge hub and a networking platform. Match making between suppliers of recovered nutrients and potential end-users takes place in the eMarket of the ESPP. The platform is currently not in operation due to lack of funds, however.

At the eMarket, the recycled nutrients are characterized by providing information e.g. on their origin, form, composition and certification status (Figure 2).


Material status:
- ☐ Fertilizer ready for application
- ☐ Fertilizer to blend
- ☐ Secondary raw material
- ☐ Soil improver

Is this product consider "processed manure"" under the nitrated directive?
- ☐ Yes
- ☐ No

Is this product certified as a fertilizer under national or EU legislation?
- ☐ Yes
- ☐ No

Country: _____

Physical form:
- ☐ Solid
- ☐ Liquid
- ☐ Sludge/Slurry

Material source
- ☐ Not sewage
- ☐ Not manure
- ☐ Other

Special types
- ☐ Strutive
- ☐ L-strutive
- ☐ Ash
- ☐ Treated ash
- ☐ Organo-mineral
- ☐ Digestate

Material composition
% nitrogen: _____
% phosphorus: _____
% potassium: _____
% sulfur: _____
% iron: _____

Material provided as:
- ☐ Waste
- ☐ Product

Quantity, liquids
Please select the wanted unit of measurement for your liquid demand:
- ☐ Liters
- ☐ Cubic metre

Tonnnage production/available per month: _____

Maximum order quantity per month: _____

Enter your address: _____

Figure 2. Information requested about suppliers and users of recycled nutrients at eMarket

Discussion: Promoting nutrient exchange in Nutribute

Due to the existence of solutions for recycled nutrients, and their current challenges, the participants of the workshop took a cautionary view on implementing a new marketplace. Instead, the invitation to cooperate with existing match-making mechanisms was warmly welcomed. Issues such as publicity and transaction costs were discussed, too.

The conclusions for Nutribute were as follows:

- On the supply side, Nutribute can promote nutrient exchange by asking the project owners about the secondary products formed in their nutrient reduction measures, and by encouraging their recycling via an appropriate platform (e.g. SYNERGie). This will be implemented as part of the campaign review which takes place before publishing a campaign at Nutribute.
- Nutribute will maintain contacts to existing platforms and follow the development of an eventual MoE marketplace in Finland.