

# Exchange of experiences on LCA for waste management and material flows in Satakunta

## Virtual visits/ cases

Fortum Waste Solutions Ltd., Natural Resources Institute Finland, LUT University and Loimi-Häme Waste Management Ltd will give overviews on their work with sustainability issues, research and development work towards improved governance and decision making.

### Fortum Waste Solutions Ltd.

Fortum is a European energy company providing our customers with electricity, gas, heating and cooling as well as smart solutions to improve resource efficiency. Together with the subsidiary Uniper, Fortum is the third largest producer of CO<sub>2</sub>-free electricity in Europe. With around 19,000 professionals and activities in more than 40 countries, the company has the competence and resources to grow and to drive the energy transition forward.

Fortum Recycling & Waste provides recycling and material efficiency services, environmental management and hazardous waste treatment in the Nordics. The goal is to support customers' business by conserving natural resources and promoting circular economy. Fortum works together with the customers to build smart and sustainable solutions for ensuring the circulation of valuable materials and the removal of harmful substances from the material cycle.

[www.fortum.com/fortum-recycling-waste](http://www.fortum.com/fortum-recycling-waste)

The presentation describes as a case study the value chain of post-consumer plastic packaging waste recycling in Finland and views of an industrial operator.

### Loimi-Häme Waste Management Ltd.

Loimi-Häme Waste Management Ltd (Loimi-Hämeen Jätehuolto Oy, LHJ) was founded in 1995. The company is 100% owned by the 16 municipalities covering regions in Southern Finland. In total, 135,000 inhabitants live in the operating area.

LHJ's the main purpose is to provide waste management services of its owner municipalities. The company has processing centres in two locations, Forssa and Säskylä. In addition to the basic task, LHJ Group, formed by five companies, operates in connection with LHJ group, offering services to industry, public administrations and producer organizations in the areas of electronic waste, contaminated land and special waste, as well as safe disposal of data protection materials.

In the presentation, from a company perspective, various aspects about separate collection and recycling of waste, will be given. Life cycle assessment has been utilised to obtain information for decision-making of waste collection systems. Views of the use and potential of the database of waste, Material market, is given.

## Natural Resources Institute Finland

Natural Resources Institute Finland (Luke) promotes bioeconomy and sustainable use of natural resources. Luke's research is divided into four research programmes: Boreal Green Bioeconomy, Innovative Food System, Blue Bioeconomy and BioSociety. In addition, Luke has many authority and expert services. The research programmes aim to create new bio-based products and business opportunities, increase productivity by digitalization, support regional vitality by circular economy, create well-being from immaterial values, and support the profitability of healthy food production.

Luke monitors the developments in the Finnish bioeconomy using indicators that are based on the national accounts, compiled by Statistics Finland. The indicators are also used to assess the attainment of the goals set up in the Finnish Bioeconomy Strategy. Luke brings together experts in natural resources and sustainable food production, and is one of the most multi-disciplinary research institutes in the area worldwide. Luke also carries out statutory government work by monitoring natural resources, certifying plant production, inspecting control agents, storing genetic resources, producing data on greenhouse gases, supporting natural resource policies and producing Finland's official food and natural resource statistics.

The presentations illustrate the collection and utilisation of biomass data for creation of tools for nutrient availabilities and potentially as a basis for life cycle assessments.

## LUT University

LUT University (Lappeenranta-Lahti University of Technology LUT) is a pioneering science university in Finland, bringing together the fields of science and business since 1969. LUT has about 6,500 students and experts engaged in scientific research and academic education. Clean energy, water and air are resources for which LUT University seeks new solutions with the expertise in technology and business. University helps society and businesses in their sustainable renewal.

LUT has a tradition of strong links with the business community. The Finnish business journal "Talouselämä" has ranked LUT as the best university in business technology cooperation in Finland. LUT promotes business generated by scientific research. This is demonstrated by the university's own investment company Green Campus Innovations, which supports LUT's research-based start-up companies. LUT aims to be a forerunner in education by securing international quality labels for degree programmes as a sign of excellence in the teaching.

Presentation deals utilizing life cycle assessment in environmental impact assessment of biodegradable waste management. Examples include facility scale study (carbon footprint calculation conducted for recycled nutrients from a biodegradable treatment facility) and estimates of environmental impacts of different manure treatment chains on a more wider system level.

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