

OPERATIONALIZING REGIONAL CIRCULARITY:
BEST PRACTICES FROM TURKU

INCREASING THE CIRCULARITY AMBITIONS OF REGIONAL WASTE MANAGEMENT WITH LOUNAI-SUOMEN JÄTEHUOLTO OY



RESOURCE
MANAGEMENT



At the European level, municipalities are asked to comply with increasingly ambitious recycling rates. However, there is a growing recognition that recycling won't suffice to address current resource challenges if recycled materials are not used in primary production. On average, recycled materials constitute less than 12 percent of the European Union (EU) demand for materials¹. Moving to high-value recycling and circular economy practices that address waste challenges at their source has become a priority in the EU. This case study highlights how a public waste company owned by several municipalities in the Turku region became a hub and innovation center for the circular economy.

CONTEXT

The birth of the Lounais-Suomen Jätehuolto Oy was a continuation of the close waste management cooperation among municipalities in the Turku region. Until 2015, waste management in the region was operated by two companies co-owned by several municipalities. However, the costs of operations were rising along with recycling requirements and increasingly complex waste management practices. In order to avoid raising customer fees, wider cooperation became necessary. The

municipalities pooled the resources of the two companies into a single entity, Lounais-Suomen Jätehuolto Oy (LSJH), with the aim of providing high-quality waste management services with a focus on circular economy innovations.

KEY ACTORS

LSJH is owned by seventeen municipalities in the Turku region, with the city of Turku owning the largest share (23 percent). LSJH is responsible for organizing municipal waste management and waste prevention on behalf of all seventeen municipalities.

The municipalities do not provide funding for company operations. The waste management services are funded mainly by waste treatment and service fees.

Lounais-Suomen Jätehuolto owns four waste treatment centers and eight sorting stations in the areas surrounding Turku, serving 417,000 inhabitants. In the waste treatment centers, waste can be sorted in thirty different fractions, including recyclable, hazardous and electronic waste, depending on the sorting station.

¹ EUROSTAT (2017) Circular material use rate. Accessible via: https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=cei_srm030&plugin=1



ACTION

LSJH has developed into more than a municipal waste management company. Its activities have expanded to support circular economy businesses, develop innovative, high-value recycling innovations and raise awareness on sustainable consumption.

In 2015, LSJH created the circular economy center Topinpuisto around one of its waste treatment centers, Topinoja. The objective of Topinpuisto is to develop innovations and business solutions based on the circular economy. The center organizes regular trainings to help companies solve key challenges such as waste material handling, finding demand for reused materials, service development or communication. These trainings

bring together experts from different sectors, including local universities, to develop concrete tools and methods that will support companies' circular economy efforts.

Topinpuisto is also developing a material library to map all the materials flowing through the treatment center. The library is developed in cooperation with Turku University of Applied Sciences. The aim is to include features that help companies to receive guidance on product design from a circular economy perspective.

Another strong focus of LSJH is textiles recycling. In alignment with the European Union waste framework directive, a separate collection for textiles must be arranged by 2025. Systematic collection and sorting of

textile waste began in early 2016 within LSJH waste treatment and sorting centers. However, for textile waste to be used as raw material by the textile industry, the processors must be able to know exactly what materials the fibers offered to them are made of. This process usually relies on care labels but some textiles might be missing a readable label or the information on the label may be unreliable.

To address this challenge, LSJH has been partnering with universities, business networks and national ministries to develop a processing facility with a mechanical fiber opening line and infrared technology to identify the type of fibers present in textile waste.

Finally, LSJH manages the Kahmari Visitor Center, which functions as a



learning environment and showroom for businesses of the Topinpuisto network. All grade 8 (lower secondary) students in Turku and surrounding municipalities visit the center annually. The exhibition changes focus regularly to cover different types of waste and prevention methods and emphasize the value of natural resources and materials. Business partners of the Topinpuisto network also have the opportunity to display their services, competences and ideas.

SUCCESS FACTORS

- **Understanding companies' needs:** Through the material library and regular exchanges with business and academic partners, LSJH is investing in understanding

companies' operations and needs with regards to materials. This helps to address obstacles early in the supply chain and to raise awareness on the necessity to design products for reuse and recycling.

- **Multi-actor collaboration:** Cooperation between private, public and academic partners has created a fruitful learning environment. The regional sorting and treatment centers offer an appropriate scale for piloting innovative solutions.
- **Addressing waste from a systemic perspective:** Municipalities in the Turku region pooling resources to create a larger public waste management company has enabled waste to be addressed from a systemic perspective.

IMPACTS

- **High recovery rates:** In 2018, LSJH received a total of approximately 144,000 tonnes of municipal waste, out of which 98.5 percent was recovered. Only 1.5 percent of the total amount of waste received went to landfill.
- **Front-running innovation:** Textile recycling innovations developed by LSJH have gathered national and international interest.
- **Circular economy education:** LSJH offers learning opportunities for local students and direct exposure to real-life businesses cases, thereby offering a training environment for future circular economy experts in the region.



NEXT STEPS

The Topinoja sorting station is being renewed to make it easier for residents to leave different materials for reuse and recycling. In parallel, the aim is to build the Topinpuisto Circular Economy Visitor Center and to further increase collaboration with companies and universities.

Topinpuisto also aims at putting the material library into practice and to link it to national efforts to develop material banks as part of the Materiaalitori program. Under this program, from 2020 onwards, waste holders in Finland will have to seek a market-based waste management service for their waste through the national material bank.

Finally, in 2020 LSJH will start building a pilot textile processing plant using the mechanical fiber opening line and further develop the use of infrared sorting technology in the Turku region.