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New design for more efficient recycling stations

Have you also experienced messy recycling stations? With materials being dumped outside and in some cases thrown in the wrong containers? Semcon is, together with Swedish FTI and RISE, conducting a new research project aimed at creating more effective handling at recycling stations, which will also reduce energy consumption during material collection.

When the materials for recycling end up in the wrong place, it causes problems, which in turn lead to increased energy use in the handling chain. This includes rubbish and other waste that is dumped outside the recycling bin, which requires additional trips by heavy vehicles. Or, that people quite simply put the wrong materials in the wrong containers, which increases handling times and leads to deteriorated material quality as well as other problems further along in the recycling. The goal of the new research project is to achieve more efficient sorting.

“When I was working from home in 2020 and went for walks at lunch, I started thinking about the recycling stations in my neighbourhood. Why do they look like they do and why isn’t the recycling working better? Might a new approach sort out the littering and all the sorting errors?” says Lotta Svärd, Industrial and Service Designer at Semcon, who is leading the project.

These thoughts prompted her to contact the Swedish nationwide recycling company Förpacknings- och Tidningsinsamlingen [FTI], and then research institute RISE. This, in turn, resulted in the new research project TJÅRVEN, which aims at service innovation for recycling from an energy standpoint.

During the project, changes will be made at recycling stations so that the research team can test what works and what doesn’t. The design methodology in the project is to investigate what is creating the problem, address it, and then measure whether or not the interventions have made a difference. Interventions may include clearer information, new recycling containers or digital information support.

“We are starting out by looking at people’s behaviours and needs, and will together aim to achieve a more efficient handling that makes people recycle more,

sort correctly and not leave the wrong things at the recycling stations," says Lotta Svärd.

"If more waste can be recycled, the need for new raw materials will also decrease, which leads to better use of energy and resources from a life cycle perspective, says Inger-Lise Svensson, Director of Energy and Environmental Systems Analysis at RISE Research Institutes of Sweden.

The project team will work with these issues using the design process and service and product development. The project might result in new products, information, digital services or mobile apps - it all depends on what the process shows that people in that specific area need.

The TJÄRVEN research project

Led by Semcon with partners [RISE Research Institutes of Sweden](#) and [FTI](#), [Förpacknings- och tidningsinsamlingen](#). The project is partly financed by the Swedish Energy Agency and is expected to run for one year starting in February 2021.

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