

# **Stories from the Circular Hub**

 Uusimaa on the road to the circular economy All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of CLIC Innovation Ltd and Helsinki-Uusimaa Regional Council.

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# From circular economy **to overall sustainability** in Helsinki-Uusimaa

The circular economy offers solutions for the development of vitality and innovations, the mitigation of and adaptation to climate change, global nature goals and strengthening the employment situation for instance in life cycle services and material recycling. The circular economy is no one man's game - the Helsinki-Uusimaa Circular Hub has been a pilot project about developing the regional ecosystems. It has been an active built-up of a platform for a network of actors in circular economy, where new solutions and directions of advancement are looked for dynamically.

By ecosystems, network cooperation and efficient communication, the best practices and ideas are widely spread, leading to the possibility to utilize the experiences of various actors and to speed up the transition to more sustainable solutions. The makers of the Circular Hub have learnt that even if good practices are shared globally, often you do not need to look for inspiration and best examples outside of your own region. We have compiled these results and examples in this story of Helsinki-Uusimaa Circular Hub.

However, this story does not end here but goes on according to the goal settled. Immediately after the hub a project about regional home bases - **supporting and piloting green deal commitments in circular economy (KOPPI project)** is started. Home bases for regional circular economy are created as a cooperation project between the region Pirkanmaa and Helsinki-Uusimaa. The project seeks to speed up pilot projects and new concrete actions, especially regarding foresighting coordination of land masses, as well as the recycling of building elements in circular economies for built environments - in cooperation with municipalities.

We would like to express our thank-you to the expert team for two years of good work and also for compiling this summary. We wish it to be useful for our stakeholders when identifying new possibilities. **Pia Tynys** pia.tynys@uudenmaanliitto.fi Head of Sustainability Helsinki-Uusimaa Regional Council





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## **Rethinking** construction

Circularity in the construction sector has become a key theme in the Helsinki-Uusimaa Region as a way of reducing construction waste and promoting sustainable development. In this interview, **Mira Jarkko**, Green Transition and New Technologies team leader from Business Helsinki, shares her views on the related challenges, opportunities and future trends.

Helsinki-Uusimaa

Circular Hub

The Green Transition and New Technologies team has been involved in the Helsinki Circular Economy Cluster Programme, which runs under the auspices of Business Helsinki with Jarkko in charge of the programme for several years. Business Helsinki is a services hub whose key task is to accelerate business and enable innovations.

The Circular Economy Cluster operates as a testbed for experiments that in the best-case scenario could benefit the entire industry.

## Barriers to improving circularity in construction

According to Jarkko, the recycling and reuse of materials represent the biggest barriers to transitioning to a more circular construction sector.

"Separating and cleaning building materials after demolition is very resource and technology intensive, and therefore costly and time-consuming," she explains. Other obstacles for a circular economy approach include shortcomings in legislation and standards. When secondary materials are used in construction, their structural integrity is a concern. Uncertainties are also involved in how to remove waste status from materials. To eliminate any exploitation, legislation is very restrictive about which materials can be used and for which purpose.

"Legislation can thwart positive initiatives in the fear of someone taking advantage of the system," Jarkko says.

She identifies similar challenges related to taxation, liability and insurance in the sharing economy and in the circular economy in general. The circular economy is not a justification for overconsumption, she says emphatically.

"If we truly want to promote the circular economy, we need to reorient our thinking from the current linear model to a more circular one. In general, we should reduce material consumption."

### Exchanging ideas over a cup of coffee

Despite many challenges, the circular economy of construction also offers significant opportunities. Mira Jarkko is pleased with the progress made in the circular economy of construction. The sector has offered opportunities to start off with concrete experiments that have move forward one thing at a time. Mira Jarkko mira.jarkko@hel.fi Lead Expert, Team Manager Green Transition and New Technologies City of Helsinki Business Helsinki, Innovation Services



Mira Jarkko has presented the Circular Economy Cluster Program at several events. Photo: Jenni Valtakari





Action is most needed when progress has begun but is not yet complete. "With pioneer companies, we have explored the fundamentals of the industry to identify so-called seed ideas for further refinement. The Kaikukatu property, featuring reused windowpanes, is a shining example of out-of-the-box thinking and bold experimentation," she says.

New innovations and technologies enable more efficient recycling and reuse of materials. The circular economy also provides new opportunities for businesses and job growth in the region. To capitalise on these opportunities, it is vital for the region's players to engage in cross-sectoral cooperation.

"Collaboration with research institutes is needed to translate theory into practice. The Closing Loops project is a case in point: the reuse design process will be discussed in doctoral dissertation articles and scientific studies," Jarkko says.

She feels it is important that architects and design engineers share a vision of reuse and the opportunities involved. To that end, the Re:imagine Spaces and Re:imagine Buildings projects aim to bring architects and design engineers together and dispel any doubts they may have regarding reuse.

"Architects and design engineers are the ones creating images, both literally and figuratively. We need their design and visualisation skills and competence to help others understand what the projects envision."

Ever since the circular economy cluster was launched, network building has been essential.

Sharing information and experiences is vital as it encourages others to carry out experiments.

"We need to offer a venue where people can meet and openly share their views and experiences. That is why we hosted several informal meetings over a cup of coffee in the circular economy cluster, and have noticed that other organisations are following suit," Jarkko says.

### Building the future: digitalisation and sustainable innovation lead the way in the circular economy

The construction industry is expected to be increasingly circular in the future, with digitalisation and smart technologies such as artificial intelligence and IoT making materials management and recycling more efficient.

"What we should bear in mind, however, is that recycling and reuse alone do not eliminate the carbon footprint of the materials. Reducing the consumption of natural resources should always be prioritised, and overall feasibility should be considered with all circular economy projects," Jarkko says.

In construction, increasingly stringent environmental requirements steer the transition to the circular economy. Other contributing factors include rising prices that reflect on the adequacy of resources and the availability of labour. Reducing transportation could be a good way to reduce the climate impact of construction.



"On a global scale, materials are transported over long distances. No study has yet been carried out that would compare the CO2 emissions from logistics with material reuse or on-site recycling. Another thing to consider is the environment in which a product will be reused. A window that has been used for 20 years here in the north can still be entirely usable somewhere further south," Jarkko notes.

Jarkko envisions a renaissance of handcrafts and growing appreciation for craftsmanship. Repairing furniture is already popular among households, and this trend is expected to expand to an industrial scale. "Not all new buildings need to have their interiors designed according to a brand manual; other alternatives are available. Big construction companies play a major role here as trendsetters: as soon as a big player adopts a circular economy approach, others will follow," Jarkko says.

### Experiments and pilot projects

A number of concrete circular economy experiments and pilot projects have already been carried out. In a commercial property on Kaikukatu, the reuse of salvaged windowpanes was a significant step forward. Using old windowpanes in a new building required the courage to think differently and implement new solutions. Another good example is the Closing Loops project, which involved working together with the city facilities services to create methods for testing the reuse of building components. This project produced valuable information and experiences that will help to drive the circular economy of the construction sector.

### The rise of networks

In summary, the circular economy of the construction industry in the Helsinki-Uusimaa Region is an area showing great complexity and great promise. Despite challenges, the future looks bright, and future trends point the way to more sustainable and efficient construction.

"The circular economy needs more participants and more collaboration. It has been such a pleasure to see how networks emerge and thrive in Finland, and that solutions encourage players to work together," Jarkko concludes.



A pilot project was carried out on Kaikukatu, where discarded windows were repurposed as interior partition walls. Photo: Martin Sommerschield



# The transformative food system of the future is created in **innovation communities**

EIT Food is the food innovation community of the European Institute of Innovation and Technology (EIT). It focuses on building a sustainable food system and promoting the circular economy.

#### **EIT Food has three missions:**

- 1. Healthier lives through food
- 2. Net zero food system

3. Reducing risk for a fair and resilient food system. **Susanah Aalto** is the Ecosystem Manager for Nordics at EIT Food.



Laura Forsman laura.forsman@helsinki.fi Director Viikki Food Design Factory

More information https://www.helsinki.fi/en/ viikki-food-design-factory The Viikki campus is home to Viikki Food Design Factory, another new kind of food innovation hub. VFDF, the workplace of **Laura Forsman**, calls itself the orchestrator of the innovation ecosystem for the food system's sustainability transition. Forsman's job involves conceptualising and promoting various science-based food system solutions in collaboration with a large number of other players. In this collaboration, Viikki Food Design Factory plays the facilitator's role.

Collaboration between EIT Food and Viikki Food Design Factory includes the Food Accelerator Network, which supports innovative agri-food startups. The network has given birth to successful startups such as Solar Foods and Onego Bio.

More broadly, promoting sustainable food innovation and the circular economy requires the involvement of the whole food system value chain. Aalto stresses that food production should be based on a systems approach that identifies interdependencies and brings together players across the entire value network, from research and education to the business sector. The need for closer cooperation has been identified, especially between cities and the third sector. Finland has the resources for good **Susanah Aalto** susanah.aalto@eitfood.eu Ecosystem Manager, EIT Food

More information https://www.eitfood.eu/



public-private cooperation in areas such as circular economy clusters and networks.

## Focus on side streams, nutrient cycling and protein diversification

Reducing food waste and improving nutrient cycling are key to building a sustainable food system. Nutrients should be recycled back to the soil and to plants, thereby reducing the need for fertilisers and, consequently,





ustainable food production minimizes waste and maximizes resource efficiency.

the environmental impact. The public sector plays a key role here. It should be more supportive of projects and businesses that focus on minimising waste across the food chain from field to table. Upgrading biogas plants, making more efficient use of raw material side streams and supporting sustainable, diverse farming systems will help reduce waste and improve resource efficiency.

"By promoting new agricultural technologies, we can create new ways to develop sustainable production. Regenerative farming holds great potential, as it improves the soil's ability to sequester carbon," says Aalto.

Viikki Food Design Factory designs sustainable food systems through new foods, service innovations and business models. The circular economy is one of the pillars of a sustainable food system, which is why circular economy solutions are an integral part of almost all projects and activities. The reuse of various food-grade side streams, the recovery of nutrients and returning them to food production as fertilisers, and the co-creation of service products that promote the circular economy in food systems are examples of solutions that the organisation supports together with companies and researchers.

Other methods of improving the sustainability and self-sufficiency of food systems include protein diversification. Consumers are inspired by the wide range of new proteins now available. While EIT Food sees great potential in them, the current EU regulation and high initial investment are slowing down development in the sector and discouraging investors. We also need more opportunities to test and try out new protein products, especially through joint efforts between start-ups and large companies. These challenges are addressed by EIT Food's Protein Diversification think tank, which brings together experts to develop solutions for protein diversification.

## Actions speak louder than words in Finland

Finland boasts enormous potential when it comes to developing and utilising circular economy solutions in food production. A high degree of self-sufficiency, advanced agricultural technology, and strong research, development and innovation (RDI) activities provide an excellent framework for a circular economy. Forestry and packaging by-products, bioeconomy expertise and engineering skills support new innovations. Large Finnish companies, such as UPM and Huhtamäki, have already led the way in the global arena by developing new solutions from forest industry by-products and new packaging materials. The agricultural sector has also recognised the importance of nutrient recovery and reuse, as evidenced by Valio's climate programme.

The promise to promote the circular economy is not just empty words: Finland runs a number of support programmes and projects and provides financial incentives to facilitate the transition to sustainable production. In the same vein, tax deductions and



RDI subsidies encourage companies to invest in the circular economy.

Finland is a pioneer in biogas technology. Biowaste collection and treatment are well organised, and biogas plants produce both energy and recyclable nutrients. But there are challenges, too. Building a bioeconomy requires large upfront investments, profitability is uncertain, and logistical solutions are challenging. In addition, improving the efficiency of nutrient recycling in biogas plants requires continuous input.

According to Forsman, one of the biggest challenges in the circular food economy is the development of business and revenue models. "Circular economy solutions are very context-specific and their revenue potential varies widely. Solutions almost always require not only a new business model, but also a new revenue model that is different from the traditional models of companies doing the same thing," she says.

### Innovating for the future

EIT Food's near-term plans include setting up a biotechnology cluster and an EU-level biotechnology alliance. "We aim to promote sustainable food production, reduce food waste and put side streams to good use. Innovative solutions featuring microbes and enzymes are being actively explored. We also want to see food waste being processed into biogas, fertilisers or even new foods," Aalto says.

With these actions EIT Food hopes to create a more socially responsible circular food ecosystem across Europe.

Forsman has similar views regarding the future of food. A multitude of experiments is needed to find solutions to promote a circular economy in the food system. The industrial sector in particular is interested in processing large side streams for reuse. Rethinking the future of the agriculture sector is another emerging trend. The agroecological symbiosis model for adaptive and resilient food production aims at self-sufficiency in terms of nutrients and energy. This reduces dependence on external, including foreign, inputs. The production model offers one solution to the fundamental challenge: how to ensure sustainable food security and self-sufficiency in a changing global environment.



Regenerative farming holds great potential, as it enhances the soil's ability to absorb carbon.



# The textile industry's circular economy in transition

The textile industry's circular economy in transition In the textile industry, the circular economy is currently undergoing a transition as extended producer responsibility is waiting in the wings, but there is lack of clarity as to what it means exactly and how it will be implemented. Due to lack of more specific knowledge, the circular economy in the sector has not made great strides. We talked to people in Finnish Textile & Fashion, Globe Hope Oy, Lindström Oy and Touchpoint Oy to find out what they think about the current state of the circular economy in the textile industry.

Finnish Textile & Fashion is an interest group for textile, clothing and fashion companies. It offers expert services, training and events, and negotiates collective agreements that all companies in the sector comply with. Globe Hope is a Finnish design company focusing on sustainable development and the circular economy. It makes bags, clothing and accessories using surplus and recycled materials. Touchpoint offers responsible and customer-tailored workwear and sustainable solutions for its customers. It takes part in competitive tenders for workwear in the Nordic countries and Estonia. Lindström Oy is a family-owned textile company whose business model is based on the principles of the circular economy, i.e. renting textiles to B2B customers, and managing the entire life cycle of the textiles from responsible sourcing to care and maintenance, repair and washing.

### Change of course needed in the circular economy due to new legislation and increased cooperation

**Emilia Gädda**, an expert in sustainability and circular economy at Finnish Textile & Fashion, says that upcoming legislative changes will shape the industry's trends in the near future. Many players feel that these changes represent the biggest challenge for the industry.

"Legislation will increasingly push us towards the circular economy. Companies are actively taking steps to get a better grasp of the circular economy, and finding partnerships for these efforts is paramount," she says.

According to **Anni Wulff-Kokko**, a sustainability specialist at Touchpoint, a workwear manufacturer, people have a somewhat limited understanding of the circular economy.

"While there is much discussion about recycling, most people still don't have a clear picture of what the circular economy actually means. But on the positive side, we are seeing increasing cooperation between companies around topics related to the circular economy," she notes.

**Veera Maunula**, Sales and Business Development Manager at Lindström's Helsinki Business Unit, has also noticed a growing interest among customers in the circular economy. **Emilia Gädda** emilia.gadda@stjm.fi Expert in Sustainability and Circular Economy Finnish Textile & Fashion



"Customers increasingly demand to see reliable data on sustainability, and with certificates we can provide verifiable proof of compliance. Local production is another theme that customers show a growing interest in, and they are keen to find local partners," she says.

### A circular economy pioneer creates value from surplus materials

Globe Hope, a textile industry trendsetter, has been doing business in line with the principles of the



circular economy for several years. It makes bags, clothing and accessories using surplus and recycled materials. According to **Jan Timm Utecht**, Globe Hope's Managing Director, the company's entire business is built around the concept of the circular economy.

"At Globe Hope, we have learnt that extensive cooperation is the key to success in the circular economy. One of our successful projects involved using surplus hospital textiles to create a new product line. This project showed how important it is to combine design expertise and material awareness, and how this combination can help to create value from challenging materials," he says.

To truly gain momentum in the circular economy of textiles, heavy investment in process engineering is



Anni Wulff-Kokko anni.wulff-kokko@touchpoint.fi Sustainability Specialist Touchpoint Ltd required. This, together with unpredictable material supply, is holding back development. Especially for smaller players, the scale of investments may be a limiting factor.

### Solutions to circular economy challenges

The interviewees were able to identify ways of overcoming the challenges of the circular economy. Many of them underlined the importance of raising awareness and informing municipal players, decision-makers, consumers and businesses, using the most optimal channel for each group. '

"Local influencers play a significant role, as they have the power to raise consumer awareness of the circular economy and drive a broader transition," Maunula says. '

But it takes more than just communication to step up the transition. New skills and new expertise in procurement and recycling are needed in organisations carrying out these activities. And, last but not least, permanent funding to boost the transition is needed.

"If we want to overcome the challenges of the circular economy, we must educate people and stress the importance of extending the service life of goods, in other words putting the circular economy hierarchy into practice. Similarly, public procurement practices should include a circular economy perspective," Wulff-Kokko emphasises.

### Cross-sectoral collaboration delivers the best results

While there are challenges to tackle, the circular economy does offer a world of opportunities, too.

According to Gädda, there is an abundance of opportunities available for those who apply new business models and use data effectively.

"The circular economy allows organisations to build a whole range of new services and products. Digitalisation can improve material traceability and the efficiency of recycling processes," Utecht says. All interviewees singled out collaboration as the biggest opportunity. And not just within the textile industry, but across industries.

"It is much easier to find the best solutions through an open and frank exchange of ideas. We therefore encourage people from different sectors to come together, to openly express their challenges and needs, and start from there. Everyone should welcome input from other industries, as no industry alone can achieve transition to the circular economy," Wulff-Kokko notes.

"It is vital to increase cooperation between different industries and organisations. It is equally important to keep the lines of communication open, even with competitors, because everyone is working towards the same shared goals," Maunula says.

The circular economy is not just about protecting our environment; it is also about significant economic opportunities. This is often overlooked in discussions about the circular economy.

"It is important to promote collaboration between businesses, local governments and individual consumers and to help them understand that the circular economy offers an opportunity to create value," Utecht underlines.





Joonas Enqvist joonas.enqvist@hsy.fi Operational Manager, HSY (Helsinki Region Environmental Services)



HSY is the provider of municipal water supply and waste management services in the Helsinki metropolitan area and in Kirkkonummi. Over the years, changes have been made to the collection process of end-of-life textiles to make it easy and convenient for residents.

"Our collection points are mainly located indoors in shopping centres, where they are easily accessible and textiles are protected from the weather. Other organisations often have their collection boxes in the same facilities, making it easy to donate textiles that are still in good condition," says **Joonas Enquis**t from HSY's regional services.

The location of the collection points and the type of collection box have had a significant impact on the quality of end-of-life textiles collected in the area. Textiles were previously collected at waste stations where they were exposed to the elements and soaked up moist and dirt. "The probability of unwanted waste ending up in the collection boxes seems to be much higher at waste stations, whereas the boxes in shopping centres often contain a lot of material still suitable for reuse."

To help people sort their textiles correctly and to encourage healthier consumption, industry players should work together to communicate more effectively.

"With communication, issues such as the throwaway culture and fast and ultra-fast fashion can be addressed."

The reuse of end-of-life textiles presents a slight problem at the moment as there are very few organisations in Finland that process EOL textiles. HSY is currently looking for new ways to utilise EOL textiles both in Finland and elsewhere in Europe.

"We would love to hear how others have gone about it and what their experiences are, especially when it comes to the recovery of end-of-life textile materials. We hope to see regional or national use of recycled fibres increase in popularity."



HSY currently collects textile waste at shopping centres. Photo: HSY





# Espoo closes the plastic loop

In Espoo, Finland's second largest city, sustainable development is promoted at the highest level: the Strategy and Development Unit is located right next to the Mayor's office. The Strategy and Development Unit is the workplace of **Mia Johansson**, who started her career at the City of Espoo working with circular economy issues and has since moved to climate work. Having worked for the city for five years, Johansson knows the ins and outs of local government and its extensive stakeholder network like the back of her hand. Espoo's strategy strongly reflects the circular economy and climate goals. The city has made a long-term commitment to circular economy work.

### Learning by experiment

The circular economy is in many ways routine in Espoo. According to Johansson, one of the biggest achievements is the dramatic increase in residents' awareness of the circular economy, and Espoo has invested significantly in methods to monitor and measure it. The will and determination to promote the circular economy has grown stronger across the city organisation. The city has served as a platform that brings together the local authority and the business sector, research institutes and development partners. Espoo has carried out several projects that have produced concrete results: "We have learnt that the best way is to set clear priorities and focus actions on those areas. The existing framework ensures that everyone focuses on actions and results that have a real impact. This makes it easier to control resources and funding, and energy is not wasted on something less relevant. At the moment, we have five circular economy priorities that set the direction for our activities," Johansson says.

### The future of the circular economy in the Helsinki-Uusimaa Region

While the opportunities provided by the circular economy are increasingly recognised, understanding the business potential involved in it remains a challenge.

"Most discussions about the circular economy never seem to go beyond recycling. At the national level, the circular economy is challenging the established linear models and is not yet mainstream, which is why both businesses and consumers may find it difficult to grasp the new practices and procedures involved in the circular economy," Johansson notes. The transition from the linear to the circular economy challenges the conventional economic model and calls for entirely new practices and policies, but at the same time opportunities abound, particularly in densely populated areas that are fertile ground for the sharing economy and other sustainable innovations. Having a sufficient population, ample services **Mia Johansson** mia.johansson@espoo.fi Senior Specialist City of Espoo

#### More information

https://www.espoo.fi/en/sustainable-development/ climate-neutral-circular-economy https://www.espoo.fi/en/sustainable-development/ circular-economy-hub-kiviruukki-2024-2026





and short distances, the Helsinki-Uusimaa region is well equipped to create and offer concrete solutions for an efficient sharing economy and raw material circulation.

Other significant near-future trends in addition to climate and the circular economy include concern for the environment, which Johansson predicts will be a major theme alongside climate impacts. More attention will also be paid to the material and water footprints of our consumption. In short, a more integrated approach to environmental issues will be taken.

### Innovation through collaboration

In Espoo, everything starts with collaboration. Joint projects have helped to build close connections between the local authority and other organisations. Focusing on the circular economy of plastics, the Closed Plastic Circle project is a great example of how different players can pool their resources to identify new solutions. The city plays a key role: it can lead by example, boost the circular economy through public procurement, provide a neutral platform for cooperation between businesses, and provide a concrete testing ground.

The extensive renovation of the Espoonlahti Health Centre tested a pilot project that involved using plastic offcuts from the building site's conduits as raw material for new conduits. The offcuts collected from the site were processed in the circular economy laboratory of LAB University of Applied Sciences and then delivered to Meltex Oy's factory for the manufacture of new products.

"During the experiment, we discovered that collecting and upcycling installation waste was a great solution and held great promise for more widespread use. But reaching an industrial scale would require large amounts of recovered material and an environmental permit for waste treatment, as installation offcuts are currently classified as waste," Johansson says. "This is one way of promoting the circular economy of plastics and rethinking an established practice. It is so rewarding to understand the number of perspectives from which you can look at the circular economy of plastics. And this is just one small part of the overall concept of the circular economy."

In the Closed Plastic Circle project, new procurement criteria were introduced to support the circular economy of plastics. The public procurement criteria for construction plastics published in the autumn focus on plastic film. The City of Espoo, Metropolia University of Applied Sciences and HSY joined forces with municipalities and the construction industry to prepare the criteria. Johansson considers public procurement a powerful tool that cities can use to promote the circular economy and boost demand. More work is needed to enhance the circular economy with regard to procurement, including plastics.

### Small choices result in big changes

Johansson wants to send a clear message to others interested in the circular economy: it is well

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Johansson encourages adding a touch of 'everyday activism' to daily life and believes it to be one of the key drivers of sustainable change.

worth the time and effort to collaborate and learn from what others have done. You don't have to do everything alone. It would make sense to work together more broadly in circular economy target-setting to ensure that the level of ambition and the roadmap to achieving the goals are consistent. Small choices made at work and at home support the circular economy and help to make it mainstream. The everyday choices we make and how we choose to spend our money will shape the circular economy services and challenge the conventional linear economy. Johansson encourages people to become "everyday activists", and believes adopting this mindset is one of the keys to sustainable change.

The City of Espoo is a good example of how a city can embrace a hands-on approach and thereby promote the circular economy through strategic work, collaboration and experimentation. Espoo's next circular economy initiative is the Circular Economy Hub in Kiviruukki. A network of the region's players is currently being built, and all those interested are cordially invited to join in!

### New project launched to promote the recycling of electrical and electronic equipment with a focus on reparability and reuse

A project coordinated by Forum Virium Helsinki aims to boost the recycling of electrical and electronic equipment. Below, Project Manager **Annikki Rossander** provides an outlook for the circular economy for electrical and electronic equipment.

The SERkut project is about finding new ways to recycle waste electrical and electronic equipment (WEEE). In collaboration with cities, businesses, investors and the R&D sector, the project aims to increase the recovery rate of WEEE generated in cities. The objective is to provide companies with opportunities to build new business around the circular economy for WEEE. In connection with the project, various events were organised, including webinars, workshops, business accelerators and business coaching. The home base for the pilot project is the City of Helsinki's Uusix Workshop.

### Socially impactful recycling

The SERkut project was inspired by the findings of an earlier project (Data Supporting Students) about the number of IT devices in city organisations that had reached the end of their first life cycle. "This prompted us to discuss various ways of maximally extending the life cycle of devices before they become waste," Rossander says.

The pilot projects carried out at the Uusix Workshop focus on improving the IT equipment recycling processes and material supply. In addition, there are plans to transition from the traditional supply-demand interaction towards the circular economy and to measure the speed of the municipal disposal cycle. The objective of the circular economy is to reduce the consumption of natural resources, make more efficient use of existing material flows, reduce energy consumption and create new solutions.

"For example, there is relatively little discussion about the potential offered by urban mining for resource recovery," Rossander notes.

According to Rossander, discussion about the circular economy tends to focus on resource wisdom while the economic and social aspects are readily disregarded.

"The social aspects of the circular economy in particular are often forgotten. This is why the pilot

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More information https://kiertoelektroniikka.fi/serkut-hanke/



### Helsinki-Uusimaa Gircular Hub Waste Electrical and Electronic Equipment

projects exploring life cycle extension are being carried out at Uusix, which is a work rehabilitation unit operating under the City of Helsinki Social Services," Rossander explains.

### Repairability a major challenge

According to Rossander, one of the biggest challenges associated with WEEE in terms of the circular economy is that electronic devices are nearly impossible to repair. Consumer products in particular are typically glued together, which means it is extremely



difficult to open devices without breaking them. "B2B devices are, as a rule, more durable and easier to repair than B2C equipment, making it easier to extend their life cycle," Rossander says.

How reusable an electronic device is also depends on the brand and the value attached to it. The resale market for used and refurbished mobile phones primarily consists of iPhones and Samsung phones, while the laptop market is dominated by Apple.

"The high brand value makes it socially more acceptable to buy and use a pre-owned Apple device than any other recycled product. This probably partly explains why Apple products are so much more popular than other brands," Rossander says.

From the perspective of repairability and life cycle extension, it would make more sense to buy a desktop computer instead of a laptop, as users themselves can replace components and recycle discarded ones. Conversely, many accessories, such as monitors and televisions, are difficult to repair as they typically require many spare parts. Keeping a stock of spare parts requires a lot of space, creating additional costs for the company.

"Who's to say you couldn't reuse the equipment for something other than its original purpose. For example, some artists would gladly accept discarded screens or televisions and use them in their installations. Tablets, in turn, could be reused in reservation systems, for instance," Rossander explains.



### EU to issue new regulations

The EU is expected to roll out new regulations for electronic equipment, including the Digital Product Passport and new regulations seeking to improve repairability and product design.

"We have, however, identified a problem with repairability: there are not enough repair technicians to meet future demand. More hands-on training is needed, and companies would naturally have to give their permission for repairs to take place," Rossander explains.



Digitalisation is expected to simplify activities such as tracking material flows, and to allow smaller companies to hire new employees.

"That said, it has become clear to companies seeking to promote reuse and recycling that our current taxation is not conducive to the circular economy. When, for instance, a company sells a device for reuse, they have to pay VAT again," Rossander says with a sigh of frustration.

With the right product design, a product's life cycle can be extended by factoring in repairability and other circular economy considerations from the outset. "Up to 80% of features making a product ideal for the circular economy can be specified at the product design engineering stage," Rossander notes.

### No need to shy away from people

When asked to single out one thing that could help to drive the circular economy, Rossander replies: collaboration. And that is why Forum Virium wants to engage in multisectoral collaboration with many players. Considering the organisation is owned by the City of Helsinki, it is only natural that this collaboration should seek to address a specific challenge identified in Helsinki.

"I encourage people to contact other people. They won't bite! People in different organisations are eager to share their expertise and knowledge on how to tackle challenges. Collaboration, the courage to try something new and continuous learning are the keys to success," Rossander underlines. According to Rossander, the circular economy provides an opportunity to come up with practical solutions to global problems. The circular economy is all about working together with various stakeholders; without collaboration, it is impossible to build sustainable business solutions.

"Ideally, the circular economy should not be limited to actions to promote environmental awareness, but it should also involve innovative business models that support sustainable growth," he concludes.



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As much as 80% of a product's circularity potential is determined during the design phase.



# Sustainable business by companies and students cooperating in Circular Hub Lab

An active research group called Business models for circular economy is found at the Turku University of Applied Sciences. One of those in charge is **Ms Pia Nurmi**. The group looks into how circular economy business is created with companies and students cooperating. The way of circular economy being taught is an object of development in both national and international networks.

The concrete challenges of circular economy are solved and furthered in a Circular Hub Lab learning environment, where tests based on company needs are carried out with university students from different fields.

"Annually, the Lab is involved in more than ten projects and there is close cooperation between approximately 200 students and 100 companies and other organizations, Ms Nurmi says.

The essential themes of research and development at the Lab are circular economy ecosystems and business models, a society based on circular economy and the development of circular economy training. The role of the Lab as a part of the Finnish ecosystems model is to clearly bring out research data on the themes mentioned, to pilot and create new competence and implementing research results in the society,

### Success factors in circular economy solutions by cooperation and strategic changes

"Our research group is putting into practice facilitation, networking, business development, project planning and studification. Cooperation and building up trust in a concrete way is vital, Ms Nurmi describes the Lab actions.

According to Ms Nurmi there are three essential themes, which call for special inputs. First of all, there is a need for impactful, large-scale industrial solutions, enabling the implementation of a widespread circular economy. Secondly, it is important to lead the change in circular economy in companies, both separately and jointly. This means renewing business models and strategies so that a circular economy truly is a part of the business core. Thirdly, the consumption and the use of nat**Piia Nurmi** piia.nurmi@turkuamk.fi Head of the Circular Economy Lab Senior Lecturer Research Group on Circular Economy Business Models Turku University of Applied Sciences

#### More information

https://www.turkuamk.fi/en/reasearch\_groups/ circular-business-models/



ural resources need to be reduced. To achieve this, a new way of thinking and acting is needed in both companies and individuals.

The earlier mentioned themes lead to possibilities and solutions in circular economy: creating impactful industrial solutions in circular economy. leading the sustainability change and reducing both consumption and the use of natural resources. **Competence development** 

# **Building circular economy** expertise at universities of applied sciences

The need for circular economy expertise is continuously growing.

Helsinki-Uusimaa Circular Hub

We interviewed **Susanna Vanhamäki**, Principal Lecturer at LAB University of Applied Sciences' Technology Unit, about the role of universities of applied sciences in addressing the increasing demand for circular economy skills. Vanhamäki's responsibilities include integrating RDI (research, development, and innovation) activities and education in circular economy into a more cohesive whole, as well as participating in projects and networks as LAB's representative and expert.

LAB University of Applied Sciences is Finland's newest university of applied sciences, established in 2020 through the merger of Lahti and Saimaa Universities of Applied Sciences. LAB is an innovation-oriented university of applied sciences that operates in Lahti, Lappeenranta and online.

"We are building responsible, sustainable, and regenerative growth through three areas of expertise in multidisciplinary collaboration. Our strengths are multi-purpose materials, intangible value creation, and human well-being," Vanhamäki explains. The vision of LAB's Technology Unit is to educate circular economy professionals who are in international demand. LAB offers circular economy education at both bachelor's and master's levels, including English-language programs and international implementations. Additionally, LAB has significant laboratory and piloting environments for circular economy in Lahti, and in the future, especially for biomaterials, also in Lappeenranta.

"For example, we have launched a new multidisciplinary master's program called Circular Economy Solutions, designed to address current circular economy challenges and to proactively respond to them. The program emphasizes the need for and opportunities in systemic change, as well as the implementation of circular economy across various sectors."

#### Research and education at the core

The Technology Unit hosts two research groups focused on circular economy. The Biomaterials Research Group supports companies and regions in addressing the needs and opportunities related to the circular and energy transition, as well as the Susanna Vanhamäki susanna.vanhamaki@lab.fi Principal Lecturer, Technology Unit LAB University of Applied Sciences



Helsinki-Uusimaa Circular Hub Competence development

transformation of the food system. The Sustainable Material Solutions Research Group, on the other hand, promotes the creation of new business based on the circular economy by applying novel material technologies. "At LAB, there are around 30 ongoing externally funded projects promoting the circular economy, carried out in regional, national, and international cooperation."

LAB has identified a wide range of competence needs in the field of circular economy among stu-

At LAB, the plastic washing and sorting module is used to separate polyolefins and polyesters. Photo: Sanna Henttonen



dents, teachers, and research and development personnel. In designing the content of educational programs, efforts are made to also utilize the cutting-edge circular economy expertise developed in the research groups' projects.

"There is an increasing need to enhance holistic understanding of the circular economy across all sectors of society. It's not enough that only those working in the environmental field understand sustainability. To achieve systemic sustainable change, we need to embed circular economy knowledge and expertise into all fields of education. This is long-term work. That's why, for example, our new master's program in circular economy is multidisciplinary."

#### Stakeholder-driven research content

LAB's RDI projects in circular economy are designed in close collaboration with stakeholders. This enables research results to be utilized not only in business but also in education. One of LAB's key strengths is the integration of laboratory and piloting environments into education.

"Utilizing our diverse new circular economy laboratory and piloting environments in education is also a major asset. Our circular economy lab facilities include both spaces for large-scale, hands-on work and an analytical laboratory. The hands-on areas are suited for larger-scale testing, piloting, and process development. Meanwhile, the analytical lab is



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### intended for laboratory testing and research of various materials and processes. We can, for example, conduct testing in the textile, plastic, wood, and food sectors, as well as pyrolysis and biogas experiments," Vanhamäki describes.

Vanhamäki identifies the greatest challenge of the circular economy as the transition from a linear economic model to a sustainable economy, one that should extend to every function of society. "The most important thing is to achieve a shift in mindset and to make the concept tangible through examples. Embedding circular economy and sustainability thinking as the 'new normal' is the greatest challenge of our time. At LAB, we are tackling this through both education and RDI."

The circular economy offers many opportunities for developing new, sustainable business models. In addition, it can be seen as a way to strengthen national preparedness and resilience. According to Vanhamäki, cross-sectoral and regional collaboration, alongside competence development, is an effective way to promote the circular economy.

"Finland is—and can continue to be—a forerunner in this field, and at LAB we want to be among the leading actors driving comprehensive sustainability transformation. To advance the circular economy, we still need new expertise and broader understanding. Let's continue building strong collaborations—and seek out even more of them!"

### The most important thing is to create a shift in mindsets and to make the concept tangible through examples. Embedding circular economy and sustainability thinking as the 'new normal'.



LAB's sorting line, based on optical recognition, enables the separation of different textile materials. Photo: Sanna Henttonen



## Posintra - a start for a company's path to green transition

Postintra is a development company based in Eastern Uusimaa, offering support for local companies to grow and develop. Management consultancy, developing projects and applying for funding together with the companies is the core for the activities of the company. Posintra offers low-threshold services, like a half-hour management consultancy, which can be booked straight on the company website. Even if circular economy is not exactly what the company works with, the connection to circular economy is seen via the companies. Companies are given concrete suggestions to further both circular economy, as well as climate and responsibility aspects on a wider scale; the company is strongly furthering green transition.

**Ms Leena Alihakkola** is the director for sustainable business and **Ms Jenni Juuvinmaa** is the business developer at Posintra.

### CEGO project Concrete circular economy solutions and support for small and middle-sized companies

The project CEGO – Circular Economy Goes East and West, that ended in 2024, is one of Posintra's

success stories. This project brought to the fore small and middle-sized companies and strived to strengthen their preparedness to further circular economy solutions for soil, reconstruction and plastics. Thanks to this project, a good start in the circular economy for soil has been possible. Valuable information about the estimation about transport costs has been received, as well as concrete solutions for taking into use a digital tool - and for intermediate storage. Larger cities may have their own land mass coordinators, but the smaller municipalities lack these resources. In these cases, the help offered by actors like Posintra is significant. In the near future, Posintra aims at giving a stronger input in proactive courses of action and in asking the companies what kind of visions and resource needs they have to develop their activities. The starting point for everything is building trust. Only in this way can different parts be put around the same table to find solutions for shared problems. If no concrete gain for your own activities can be seen, the companies might have reservations about projects overall. Posintra is building bridges between public actors and companies.

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#### **More information**

https://posintra.fi/en/ https://cego.fi/cego-circular-economy-goes-east-and-westhanke-2021-2023/



Jenni Juuvinmaa, Business Developer, Posintra

### Circular economy in future Helsinki-Uusimaa

According to the experiences of Posintra, many regional companies implement circular economy solutions at the lowest hierarchical levels, by using waste



and heat recycling solutions. These actions are often used as part of "resource wisdom" and they are not necessarily identified as circular economy as such.

A larger change of attitude towards circular economy is on its way, though. The model för a traditional linear economy and its value chains have been questioned in the light of circular economy. Posintra looks upon circular economy as rather being a change of attitude than a change in the use of materials. Therefore, changing the way of thinking on the path to circular economy is at the centre.

Posintra finds the identification of value chains and the increasement of data as trends in circular economy. Trends that increase the overall understanding in companies. More often than before, discussions about value chains are emphasized in the circular economy. Together with business models, they are making it possible for subcontractors to guide their

Leena Alihakkola, Director, Posintra

customers to more responsible ways of production. New possibilities to act more sustainably are born when companies get a better view of the scale of their own carbon footprint and negative climate effects. By realization and ideas, the eyes are opened for cooperation, which is needed for circular economy to function properly.

At the same time, changes in legislation, new geopolitical phenomena and higher prices on raw material make companies look for new solutions. There are many reasons to grab the opportunities in circular economy.

Helsinki-Uusimaa and its companies have several prerequisites to act as forerunners in circular economy. As an example, the production in heavy industry, like metal treatment, has already for many years been on the top of circular economy in Finland.

#### Ecosystems in key position

Posintra is a well-experienced creator of ecosystems. Developing ecosystems is based on different actors meeting each other, and established ways of thinking are put aside. Unlike in linear economy, you cannot act alone in circular economy. The most significant ecosystem in Porvoo with surrounding areas is the Kilpilahti area, where you can find Neste and Borealis, among others. Considering cooperation, there is almost a perfect ecosystem in this area with established procedures since many years. Outside of Kilpilahti, local small and middle-sized companies have an ecosystem of their own, born for instance via different development projects. Important additional resources for regional development have been given via projects.

Long-term funding is, however, needed for cooperation, as current projects, spanning only a few years, are not long enough to create lasting solutions for circular economy in the region. The City of Porvoo can offer a unique funding possibility for projects in the region, which is a city fund for a green transition. The region is ready for the circular economy way of thinking. It is here via reports and calculations - it is time to proceed from words to actions.





### Helsinki-Uusimaa Circular Hub:

# Central network creator, business and innovations ecosystem supporting regional development

The Helsinki-Uusimaa Circular Hub has become a significant network creator and ecosystem supporting regional development in Finland, and especially at a regional level. In order to achieve the goals of sustainable development, it has brought together the municipalities, other actors in public administration, companies, supporters and citizens. The most important events of the Circular Hub and their effects on regional development are observed in this article.

### Start and early stages of Hub

The idea of starting a Circular Hub was already there in 2017, when regional municipalities and the Helsinki-Uusimaa Regional Council acknowledged a need for a more efficient cooperation, use of resources, reduced amount of waste and ecosystematic activities. Exciting forces in this discussion were **Ms Pia Tynys** from the Helsinki-Uusimaa Regional Council, **Ms Inka Orko** from the VTT Technical Research Centre of Finland and **Ms Pirjo Kaivos**, then responsible for the circular economy theme at the CLIC Innovation. In 2019, the feasibility study project was carried out with the support of regional development funding, In the workshops of the project, the most critical challenges, possible cooperation forms and measuring instruments to achieve circular economy goals were acknowledged.

Participants in the preliminary project were Helsinki-Uusimaa Regional Council, Green Net Finland ry, VTT Technical Research Centre of Finland, HSY Helsinki Region Environmental Services Authority and CLIC Innovation. The role of CLIC was codeveloping and facilitating workshops. The challenges were identified via co-developing workshops and the essential Hub focus areas were developed in this way (construction, textiles, electronic waste, plastics, food).

After the feasibility project, funding was applied for, from the national funding for regional sustainable growth and vitality (AKKE), and the Hub project was able to start in the beginning of 2023. Already at the beginning, the Circular Hub aimed at creating new business possibilities for the community and simultaneously at building a good living environment for the inhabitants. Additionally, the Hub was to look for, develop and share competence, facts, data, ideas, resources, as well as networks. **Tiina Laiho** tiina.laiho@clicinnovation.fi Head of Services and Communication CLIC Innovation





### Significant projects and pilots

The activities at the Hub have spread all over many sectors, like construction, textiles, plastics, electronics and food systems. The first activities concentrated on intensifying different circulations and identifying new business models regarding them, as well as mapping current projects. The Hub carried out, among others, material flow mapping, developed couse services and RDI project ideas in workshops.

One important challenge identified already at the beginning was connected to a more effective recycling of construction waste. New methods and technologies for the recycling of material have been developed. Current projects and the activities of other ecosystems have been surveyed. The recycling of textiles has gained remarkable attention. Many new concepts have been pilot projects to further the reducement and reuse of textile waste. Various regional actors, with others, have been participating in the co-development workshops with the themes of active ecosystems. Cooperation has been seen, for instance in circular economy projects between cities and various clusters.

### Cooperating and networking

One success factor in the Helsinki-Uusimaa Circular Hub has also been a wide cooperation between different actors. The ecosystem has arranged many seminars, workshops and networking events with sharing best practices and furthering cooperation projects. Inputs in cooperation have had a special focus when it comes to existing clusters and ecosystems concentrating on the themes of the Hub. These themes have been construction, biorefining and textile recycling.

### Effects of ecosystems

The Helsinki-Uusimaa Circular Hub has gained remarkably in regard to the economy and environment. Via new networks and pilot projects, regional companies have gained business possibilities. Data and competence have been shared on various themes. Furthermore, to get sustainable development and circular economy principles to be rooted more and more in the regional activities, the Hub aims to enlarge its activities and to deepen its cooperation. The Helsinki-Uusimaa Circular Hub has demonstrated how effective networking and collaboration can promote sustainable development and regional growth.

Ecosystem activities need long-term development, and different funding alternatives have been looked for regarding the extension funding.

### Outlook on future

The Helsinki-Uusimaa Circular Hub has shown how efficient networking and cooperation can further sustainable development and regional growth. Innovations and projects created via the Hub, along with shared data offer a model for other regions and actors wishing to advance circular economy and resource efficiency. Well-working forms of cooperation with existing ecosystems are important for bringing forward projects in circular economy. To enable a change, actors from different sectors and efficient cooperation with different actors are needed, At CLIC,



we are lucky to have been able to follow and participate in the journey of the Hub - all from the beginning onwards. Our role has been to support the Regional Council as one of the actors in managing the ecosystem, facilitation and expanding the network. Via cooperation and developing both the Hub and we have been able to utilize CLIC's own open innovation ecosystems and the project portfolio activities more efficiently. Synergy for all partners

Our goal and wish is that the Circular Hub will be able to continue its work, under the management of the Council, for a more sustainable and vital region.



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In the future, the Circular Valley aims to further expand its activities and deepen collaboration to ensure that sustainable development and circular economy principles become even more firmly embedded in the region's operations.



### From recycling to the circular economy

**Vesa Heikkonen** is the Managing Director of Rosk'n Roll Oy Ab, a waste management company owned by 12 municipalities in the Helsinki-Uusimaa Region. The participating municipalities have signed a partnership agreement under which they have transferred the operational waste management service tasks assigned to municipalities in the Waste Act to Rosk'n Roll. The company's key goals include increasing the recycling rate and promoting circular economy innovations.

"We have been in business for more than 30 years. In the early years we did everything ourselves, but over the years we have gradually transitioned to working in large collaborative networks. To succeed, you need to identify interfaces with other players and build practices and policies that take into account the objectives, financial constraints and other operational requirements of the parties involved," Heikkonen says.

### The circular economy creates new opportunities and challenges in the waste sector

Heikkonen notes that many changes are taking place in the circular economy, including an obligation to use more blended materials in product manufacturing. This increases the demand for recycled materials which, in turn, will make the recycled material business more profitable and create genuine business opportunities. What's more, legislation in general is providing more favourable conditions for the circular economy.

"Our foreseeable challenge is that the discord regarding the operational waste management sector will continue, resulting in unpredictable and erratic waste legislation that changes with each new government. This creates instability in the industry and undermines long-term development work."

Nonetheless, Heikkonen identifies a wide range of new opportunities in the circular economy. With advanced technological solutions, for instance, new ways of recovering materials and reusing nutrients become available. Source segregation is complemented with highly organised mixed waste treatment systems, and closed nutrient cycles built around biogas plants, such as vertical hydroponic farming, offer new ways to foster the circular economy.

"In addition to advanced technological solutions, taking the next step in the circular economy requires a change in attitudes, which we at Rosk'n Roll have been advocating for decades," Heikkonen says. Vesa Heikkonen vesa.heikkonen@rosknroll.fi CEO Rosk'n Roll Ltd

More information https://rosknroll.fi/en/

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A near-future challenge is the continued polarization within the operational waste management sector, which results in shifting and inconsistent waste legislation with each government term.



### Amendment of the Act on Public Procurement a risk to Rosk'n Roll's operations

Rosk'n Roll is concerned about the proposal put forward by a working group of the Ministry of Employment and the Economy to include a minimum ownership requirement for municipal enterprises in the Act on Public Procurement.

The Finnish system of municipal responsibility relies on intermunicipal cooperation. In 2019, Rosk'n Roll merged with Itä-Uudenmaan Jätehuolto Oy, which resulted in significant cost savings and additional resources for development work requiring special expertise. The company uses its strong procurement competence to buy services mainly from the market, and its own service production is limited to customer service at waste stations, statutory waste advice services, and any necessary support services. Rosk'n Roll opposes the proposed 10% minimum ownership requirement.

The proposal of the working group of the Ministry of Employment and the Economy is based on the Government Programme objectives on savings and increased competition, but with respect to Rosk'n Roll, the proposed measures would not help to achieve those objectives.

"On the contrary, the amendment would lead to the closure or splitting of the company, which would

involve an increase in costs, special expertise being spread thinly, and a risk to our ability to meet the EU's recycling targets. At the same time, forcing the participating municipalities to split their joint assets would require lengthy negotiations and would scrap the modern waste management system we spent years building. It would take the participating municipalities 30 years back in time and increase service charges. And ultimately, none of it would increase competition," Heikkonen concludes.

It is important that waste management continues to be a joint intermunicipal operation in the future.

#### Vihti Waste Station, Photo: Rosk'n Roll

Porvoo Waste Management Center, Photo: Rosk'n Roll





# Regional funding will boost the circular economy

Regional funding will boost the circular economy The European Regional Development Fund (ERDF) has an important role to play in supporting regional innovation and promoting low-carbon and resource-smart solutions. Funding provided by the ERDF can be used to foster innovative pilot projects and explore new circular economy practices.

The objective of the Innovation and Skills in Finland 2021–2027 programme is to help Finland achieve its goal of being carbon neutral by 2035. To this end, we need more ambitious and innovative R&D projects to accelerate the transition to the circular economy and to increase energy efficiency. While we have seen positive development in terms of emissions, further action is needed across all sectors. Finland has therefore agreed to allocate 35% of the ERDF funding to climate action in line with its national policy.

Circular economy measures are being vigorously implemented across the country to drive the cir-

cular economy according to a national strategy. To achieve progress, we need to take simultaneous action on several fronts. We therefore welcome applications from ambitious and impactful projects that will accelerate the circular economy. From the funding agency's perspective, criteria for a successful project include its ability to solve an existing need or problem and to bring about change. We expect projects to make an impact and to deliver results.

Information and knowledge gathered from previously funded projects have been invaluable for the region's development. We are excited to see what new insights and novel approaches the region's circular economy players have discovered and encourage them to explore various funding opportunities at both the regional and EU level. From the ERDF's perspective, every project that promotes the wiser use of resources is a step towards a more sustainable and vibrant region. Hanna Laaksonen hanna.laaksonen@uudenmaanliitto.fi Chief Adviser Helsinki-Uusimaa Regional Council

More information https://rakennerahastot.fi/en



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We encourage applications from ambitious and high-impact projects that promote the that accelerate the circular economy.



# Green Deal speeding up circular economy transition

For a long time by now, Finland has showed strategic leadership in circular economy. The next step is practical leadership. In its Strategic Programme to Promote a Circular Economy, Finland has, as one of the first countries globally, set quantitative goals for reducing the overall use for domestic natural resources, as well as increasing both resource efficiency and circular economy. The green deal in circular economy has an important role in achieving these targets.

### In circular economy, the consumption of natural resources is fitted into global limits

The extraction of natural resources has tripled during the last 50 years and is predicted to continue growing so that natural resources 2060 will be taken even 60 % more than now. The extraction and processing of natural resources cause more than half of the global greenhouse gases and almost all of the biodiversity loss. The growing use of untouched resources is threatening the reaching of climate and nature goals (OECD).

The core of circular economy is to reduce the use of untouched resources, It offers solutions and action plans to reduce greenhouse gas emissions and regulate other environmental impacts of consumption and production. The general interpretation of circular economy is an approach to minimize the amount of natural resources for a financial use. This is made by changing the productional methods to be based on circulation; by more efficient resources and taking into use new business models and consumption patterns.

Apart from the environment, a transition to circular economy gains the economy and the resilience for crises. Finland uses a lot of natural resources, both on a European and global level. At the same time, the value added to our national resources is among the lowest in Europe. A modelling made by the Finnish Environment Institute in the beginning of 2024 showed that a circular economy can improve domestic resource productivity, reduce the extraction of nature resources and the environmental impacts caused by it, along with a stronger GDP. (Savolainen et al.) Simultaneously, the dependency on imports can be reduced and the equity ratio can be increased.

### Green deal in circular economy - new action plan

The green deal in circular economy is a strategic commitment model based on voluntariness, led by the State. It advances, with all strengths in society, the achieving of the national Strategic **Riikka Yliluoma** riikka.yliluoma@ym.fi Senior Specialist Ministry of the Environment

More information about the Circular Economy Green Deal https://ym.fi/en/circular-economy-green-deal



Programme by reducing the use of natural resources and furthering low-carbon circular economy. The target is to bring different actors together to remove bottlenecks in circular economy and to advance systemic change.

What is unique with a commitment based on voluntarity is that the actions chosen for it have been collected in a two-year cooperation with actors from various



fields, based on a wide modelling where important targets and the actions needed were identified in cooperation. The full complexity of the transition called for is shown by five action areas important for the consumption of natural resources. Together, these action areas cover almost all functions of society. These areas are the built environment, industry, consumption and business, energy system and a food system in renewal.

The green deal in the circular economy has been directed to companies, trade associations. municipalities and regions and other actors. The actors make voluntary commitments to targets and actions to advance low-carbon circular economy until 2035. An assessment group consisting of workers at research institutions is estimating the commitments plus the impact of their actions.

Also the ministries are partners in the green deal in circular economy. They are committed to support the implementation of goals and actions of participants by legislation, other policy instruments, facilitating the cooperation of participants, funding the home bases of obligating parties and by cooperating with the funders of circular economy.

### Helsinki-Uusimaa in key position

The regional actors in Helsinki-Uusimaa have a key role in implementing the circular economy transition. The extraction and consumption of natural resources are the highest in our region, compared to



other regions in Finland. On the other hand, the highest surplus financial value from natural resources is gained in this region, as the resource productivity is the highest in Mainland Finland. Many procedures according to circular economy are being developed and already used here - all from the coordination of land masses to the new solutions in food production. A method based on cooperation in the green deal of circular economy gives a long-time strategic view of the direction, which can help to make investments needed in circular economy. Via the green deal, organizations can identify the most impactful circular economy actions, boost their own actions and their entire domain towards more environmentally responsible ways to act.

Those committed to the green deal get concrete support, data and encouragement from both their dialogues with the ministries and from their home bases, them being the Circular Economy Finland and the Green Building Council Finland. They support actions, inspire and further the cooperation - and help to find funding sources, as well.

It is not possible to make the circular economy transition alone. More than 30 actors have been preparing their green deal commitment, or they have already handed it in. Welcome, join the forerunners!

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# **Closing words**

The aim in circular economy is to disconnect growth and materialistic consumption, resulting in less resource consumption and waste, but more financial and user value. If we succeed in reducing the quantity of materials in our system this way, society resources tied up to it can be released to create welfare in other ways, for instance immaterially. When looking at a product and its value, the largest impact is found when taking into use such procedures that can extend the lifespan of a product and after being used, materials can be put back into circulation in an environmentally friendly way, Jobs can then change from production to reparation, maintenance, secondhand markets and recycling. Actors are needed throughout the entire lifespan of a product to enable this, as well as different services and infrastructure. Cooperation between the private and public sector is needed, not to forget the customers, inhabitants and users. For the model of circular economy to become reality, the entire system needs to react and change, and even in a synchronized manner.

It is not always easy to estimate what the best procedures are for the environment or economy. Additional challenges come from environmental circumstances, natural resources, economic structure, courses of action, culture, prosperity, special competence. They also come from the needs of inhabitants, customers and users. A universal optimal solution is not necessarily to be found. Therefore it is important not to leave circular economy to be solved on EU or national levels. Regions have their own important active role in developing, implementing and coordinating models in practice.

The Helsinki-Uusimaa Circular Hub was found with this understanding in mind and with the thought that the most densely populated area in Finland can act as the innovator and implementor of an efficient and pragmatic circular economy. According to mapping, the region had material challenges, like a lot of waste in plastics, textiles and construction, along with food waste and land masses from construction that need to be placed somewhere. We also identified strengths; a high-level supply of education and research, strong business in services, platform economy and recycling, internationality, a competent and educated population, along with short transport distances for any reuse. of materials, By encounters, cooperation preforms were born, and they were advanced by the Hub. It arranged events.

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Inka Orko is the Chair of the Steering Group for the Helsinki-Uusimaa Circular Hub.



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The circular economy is a endurance sport in many ways – and our marathon has only just begun. made surveys, publications and had workshops in both Finland and internationally. The project has also created a good network for projects and actors in the fields mentioned earlier.

In many aspects, circular economy is about endurance and we have just started our marathon. It is important to continue this work persistently by grabbing and dealing with the current bottlenecks, possibilities and bring them up in a practical action plan - in relays. As an example, by furthering the use of civil economy criteria for public procurement, by piloting good and suitable European procedures in Helsinki-Uusimaa, by opening up the business possibilities given in the eco-design regulation (ESPR), by supporting the circular economy actions in the small and middle-sized companies in various ways, along with the services and reparation businesses, we can get such actions.

As the Chair for the steering group, I would like to warmly thank the splendid team at the Helsinki-Uusimaa Regional Council - you are competent, inspiring and efficient, and I have enjoyed working with you. The furthering of a regional circular economy is in good hands! I also express my gratitude to our proficient steering group with a good spirit of solution finding, enabling us to bring both challenges and possibilities to the table. Thank you also to the stakeholder groups for your valuable cooperation!

Helsinki-Uusimaa 21.2.2025, Inka Orko, VTT Technical Research Centre of Finland







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