

# ECO3

## ECO3 – Bio- and Circular Economy Industrial Scale Piloting – Tampere Region, Finland

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Nov 21<sup>st</sup>, 2017@London, UK



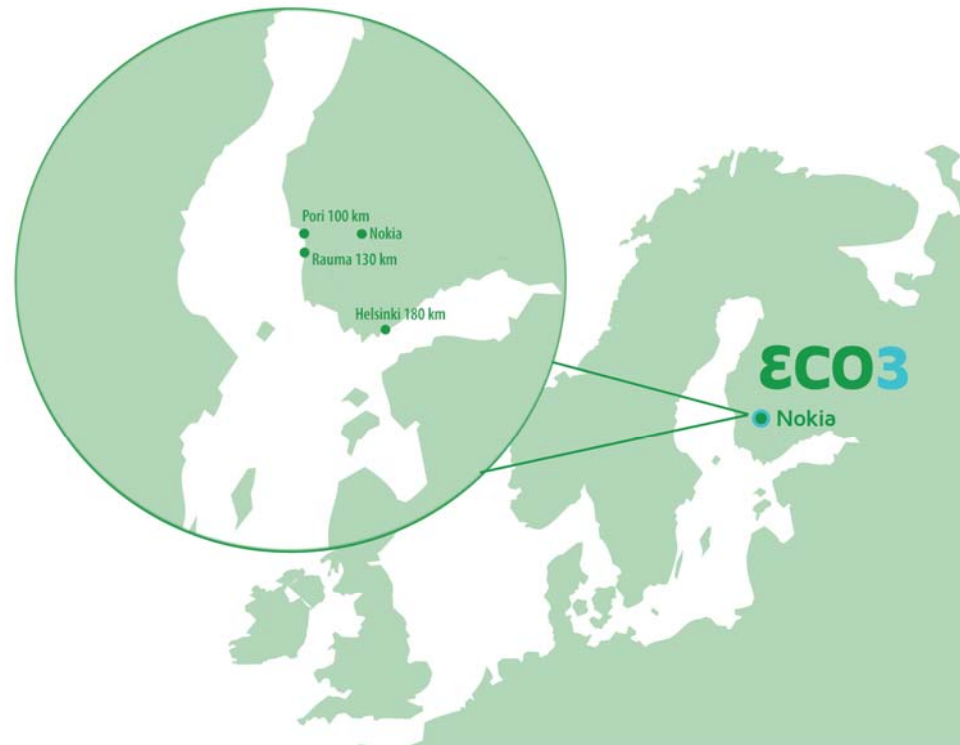
@DrSeppanen



# ECO3 is in the heart of Finland

## City of Nokia and Tampere Region

- Tampere Region has a population of 509,000 (1/0217) which makes it the **second largest region** in Finland just after Helsinki capital region.
- 31 000 places of business.
- Second largest airport in the country.
- **Up to 15 % of Finland's national R&D budget is spent in Tampere.**
- Close to the large Finnish ports on the Gulf of Botnia.
- For companies the key reasons to operate in Tampere Region are good availability of employees, central location and the close connections to universities.

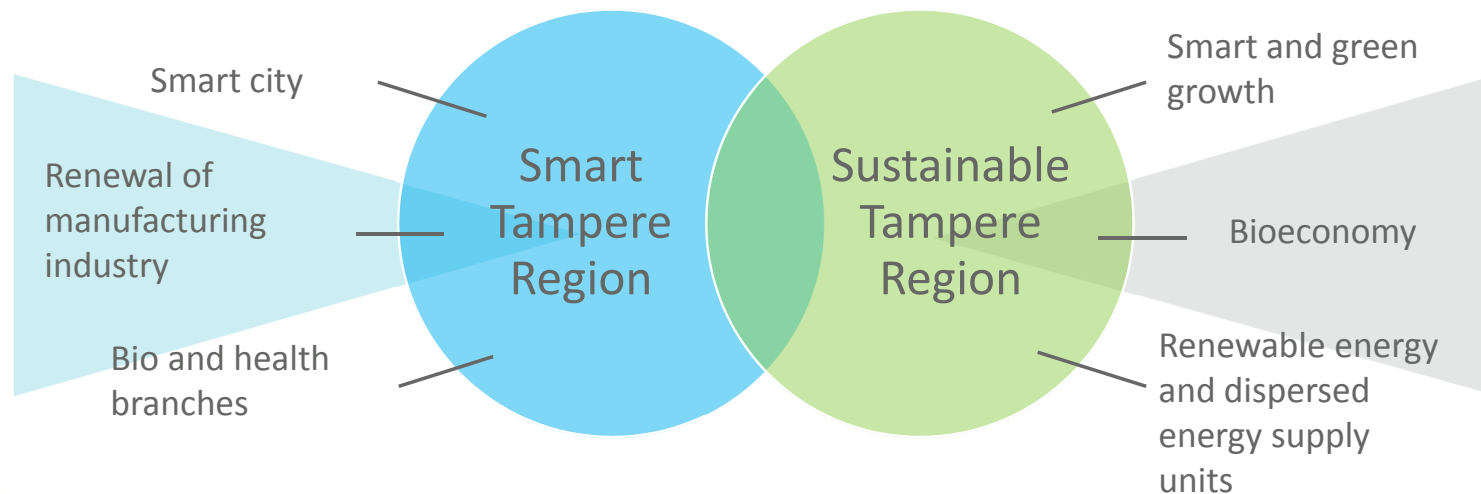


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# SMART AND SUSTAINABLE TAMPERE REGION

- Tampere is heading towards a resilient and resource efficient region through a renewal of its strong manufacturing industry; digitalization and servitization in focus
- Bioeconomy and higher value added bio-based products bring vitality and diversity to the region's country side.



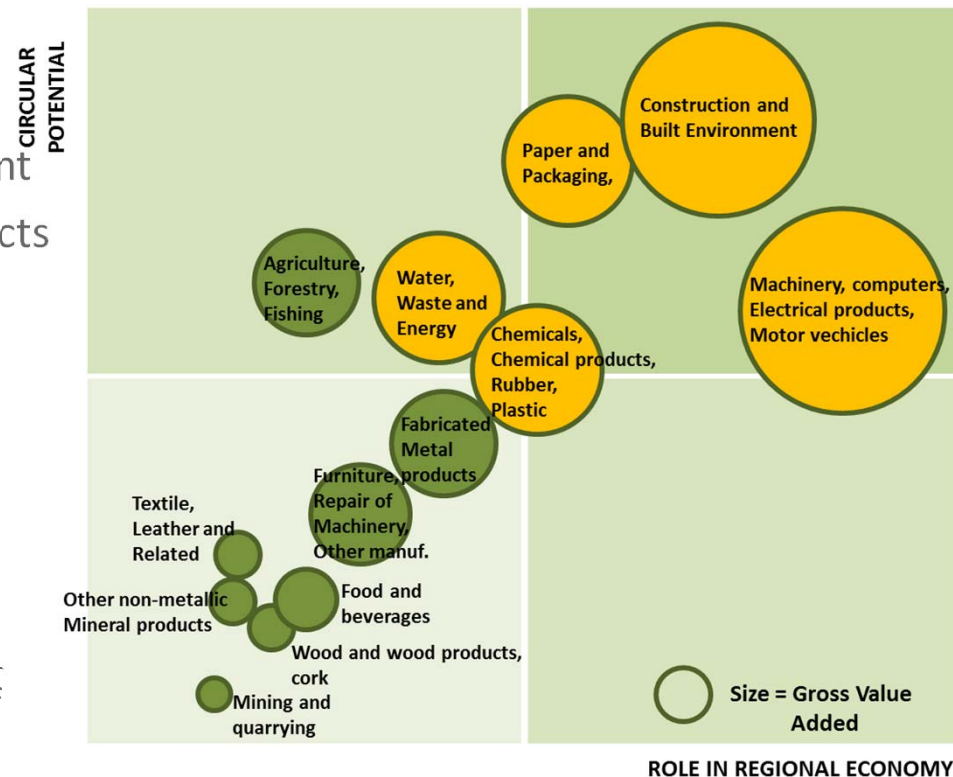


## Circular Economy in Tampere Region means higher value added products and more services

Tampere Region's circular economy spearheads\* are:

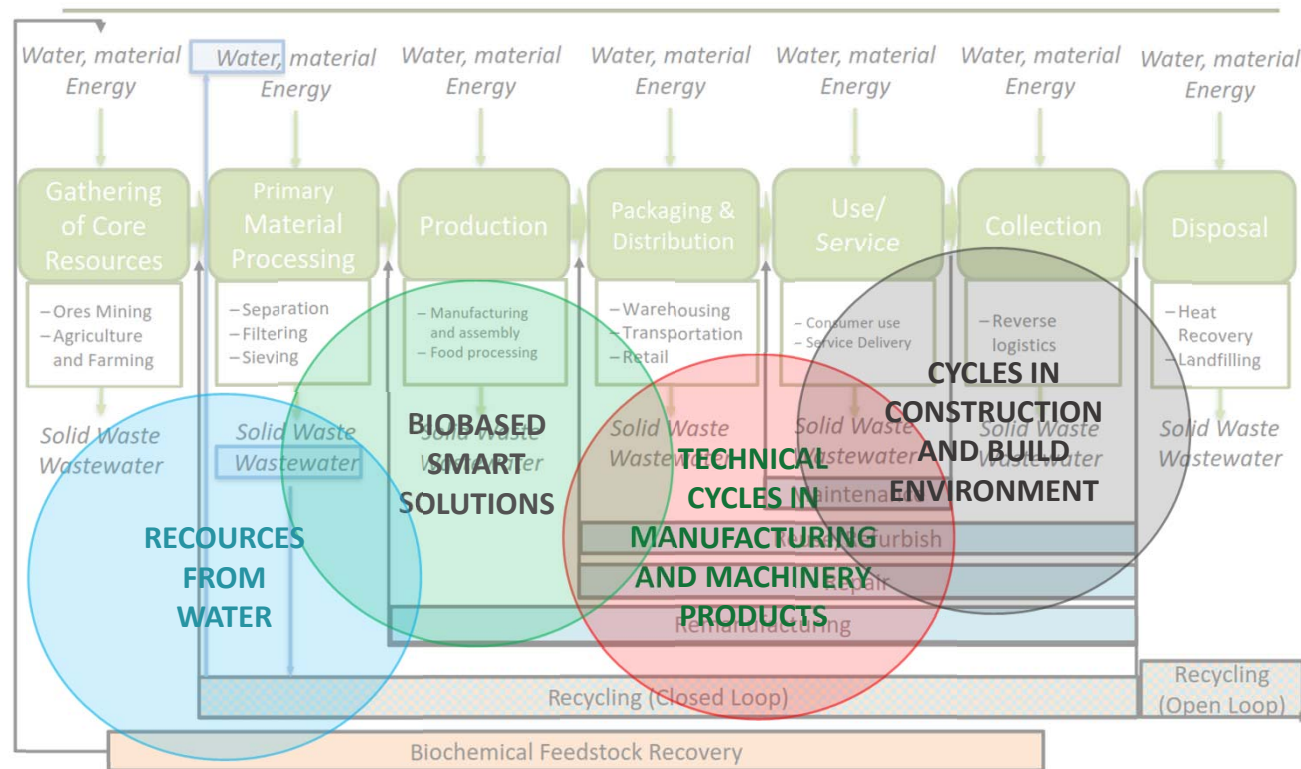
- Construction and built environment
- Machinery and electronical products
- Paper and packaging
- Water, waste and energy
- Chemical-, rubber-, and plastic products

\*Based on Local Analyses done as part of H2020 SCREEN-project



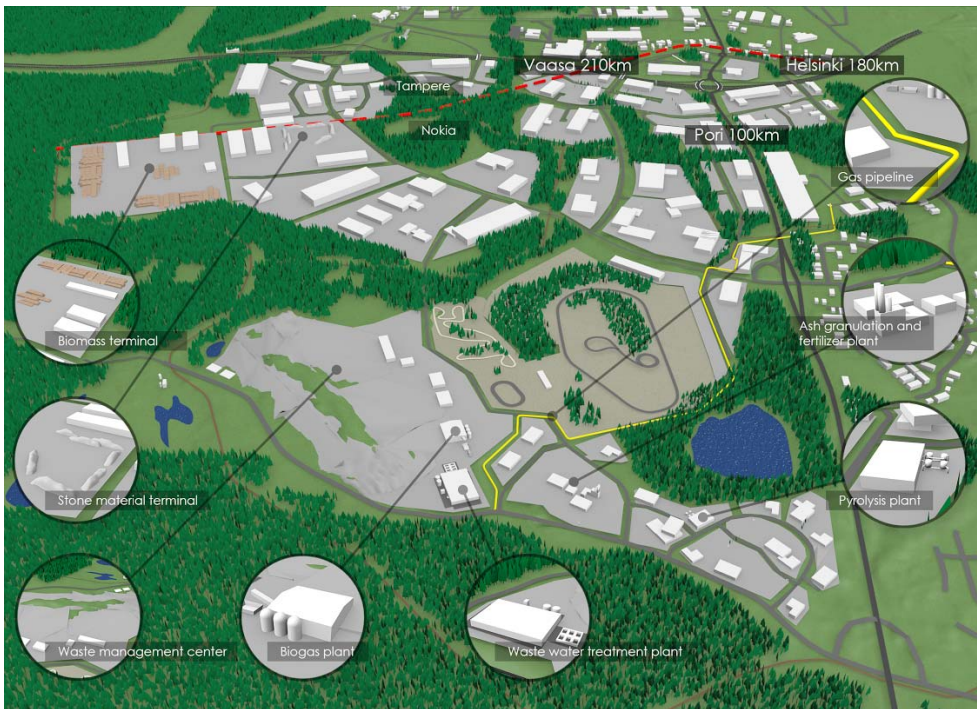


# Tampere region has four circular economy spearheads – ECO3 innovation platform facilitates development



Spearheads are chosen based on three primary criteria. 1) Based on the Tampere Region's RDI baseline analysis themes are strong. 2) Themes are identified important in the national circularity potential analyses, Sitra 3) Themes represent synergic crossregional themes in EU identified in H2020 SCREEN-project.

# ECO3 is built up in phases



## Facts

- An innovative, industrial-scale, multidisciplinary bio- and circular economy business area, **ECO3**, is being built on the excellently located Kolmenkulma Eco-Industrial Park in Nokia.
- 600 hectares
- Essential service investments for the area currently around 60M EUR.
- ECO3 competence centre works simultaneously as a **demonstration and pilot environment**.

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# Companies in the area and cooperation partners



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# How do we operate?



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## **Verte Ltd.**

ECO3 platform company

- Matchmaking
- Setting up business and concepts in national and international level
- Owned by the city of Nokia

## **ECO3 Consortium**

- ECO3 is developed in close cooperation with participating companies, Finnish universities and research centres
  - Tampere University of Technology
  - Natural Resources Institute Finland (Luke)
  - VTT Technical Research Centre of Finland





# ECO3

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## Nutrient cycle



# Strongly involved in the nutrient cycle

- Raw materials created from agricultural by-products, crops and biomass, forest-based products, the food industry and municipal waste are the basis for the area's new industrial activities and the formation of complete systems.
- Our purpose is to develop **the nutrient cycle, as well as nutrient recovery, especially in agriculture and the food industry.**







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Wood-based bio-economy and  
circular economy



# New business opportunities from wood



- A significant amount of the energy produced in Finland is provided by renewable wood-based products and by-products. Heat produced by the city of Nokia is generated from renewable wood-based materials.
- A 32 hectare biomass terminal will be located in the ECO3 area, which will provide a centralised anchor area for the distribution and processing of wood-based materials to satisfy the needs of the energy industry.
- ECO3 creates excellent conditions for the **formation of timber cycle and bio-economy based activities** within the area or in its sphere of influence.

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The background of the slide is a composite image. The top and bottom sections show a close-up of light brown wood chips. The middle section is a horizontal band of vibrant green, finely shredded biomass material.

# ECO3

Energy and fuel  
from bio- and circular economies

# Versatile production of renewable energy and bio fuels

- The ECO3 area already has **biogas production**, and local **industrial, wood-based** and **waste water treatment by-products** can be utilised to produce heat and biofuels.
- We run many **pilots** and **demonstrations** related to these activities.







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Technical cycles



# Technical cycles

- We are creating the conditions for extending the life cycle and reuse of technical materials. We are looking for ways to utilize industrial by-products as efficiently as possible. **One ECO3 company's by-product is another's raw material.**
- We also aim to make technical cycles more efficient using new **digital solutions.**

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The background features a vibrant green field of grass on the left, transitioning into a network diagram of white nodes and lines on the right. A semi-transparent white rectangular box is centered horizontally, containing the main text.

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**Circular Economy in Tampere  
Region's Will First Grow Through  
Circular Economy Centers**

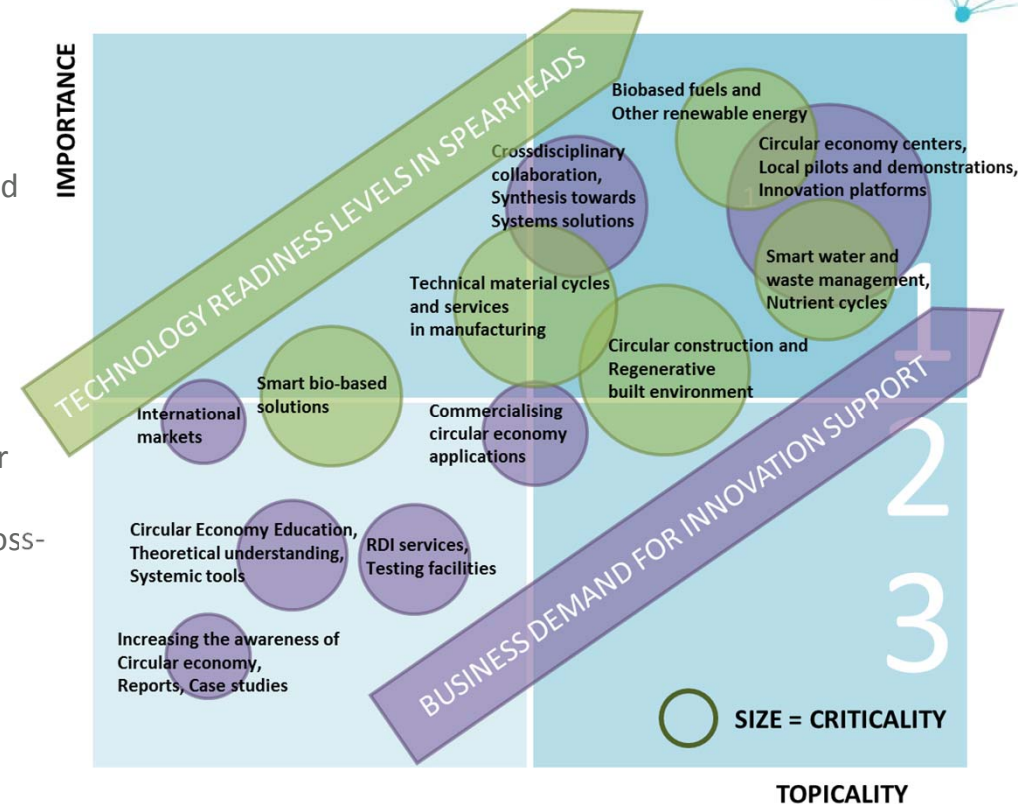
# Gateway to Europe and Finnish markets

## ECO3 business area offers

- Excellent location next to a major traffic hub
- Ready to build sites for industrial-scale operations
- Various industrial-scale concepts to invest in (e.g. biofuel production, recycled plastics and polymer production, timber processing)
- Platform services provided by Verte Ltd.

## Tampere region's circular economy will first grow through circular economy centers

- **1st phase** facilitation of incremental development solutions through circular economy centers
- **2nd phase** enabling systemic solutions and services through new ways of cross-collaboration
- **3rd phase** Introduction of new products and services designed for circular economy with cutting edge RDI services and education
- **Our offer for SCREEN: SCREEN Platform partnerships**



Video: <https://youtu.be/9IMC61Dyk9c>



**NOW YOU  
MIGHT WONDER  
WHERE THE  
KING IS.**



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The background features a blurred green field with some plants on the left. Overlaid on this is a white network diagram consisting of dots connected by lines, primarily on the right side. A solid green horizontal band runs across the middle of the image.

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**Got interested?**

Check out: [www.eco3.fi/en](http://www.eco3.fi/en)