Elinkeino-, liikenne- ja ympäristökeskus
Närings-, trafik- och miljöcentralen
Centre for Economic Development, Transport and the Environment

Circular economy – current in Finland and Lapland

19.10.2017

Luokkanen Eira, Head of Unit, Environmental Protection

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Finland becomes a world leader in the circular economy by 2025

Roadmap's ambition:

Increased exports and **growth** for companies from scalable and comprehensive circular economy solutions.

Functional **domestic market**.

Circular economy into the mainstream through **actions** and **concrete pilots.**

Economy, environment & society:

Circular economy as a new cornerstone for the Finnish economy.

Finland as a model country for the challenge of scarcity.

From adapter to pioneer.

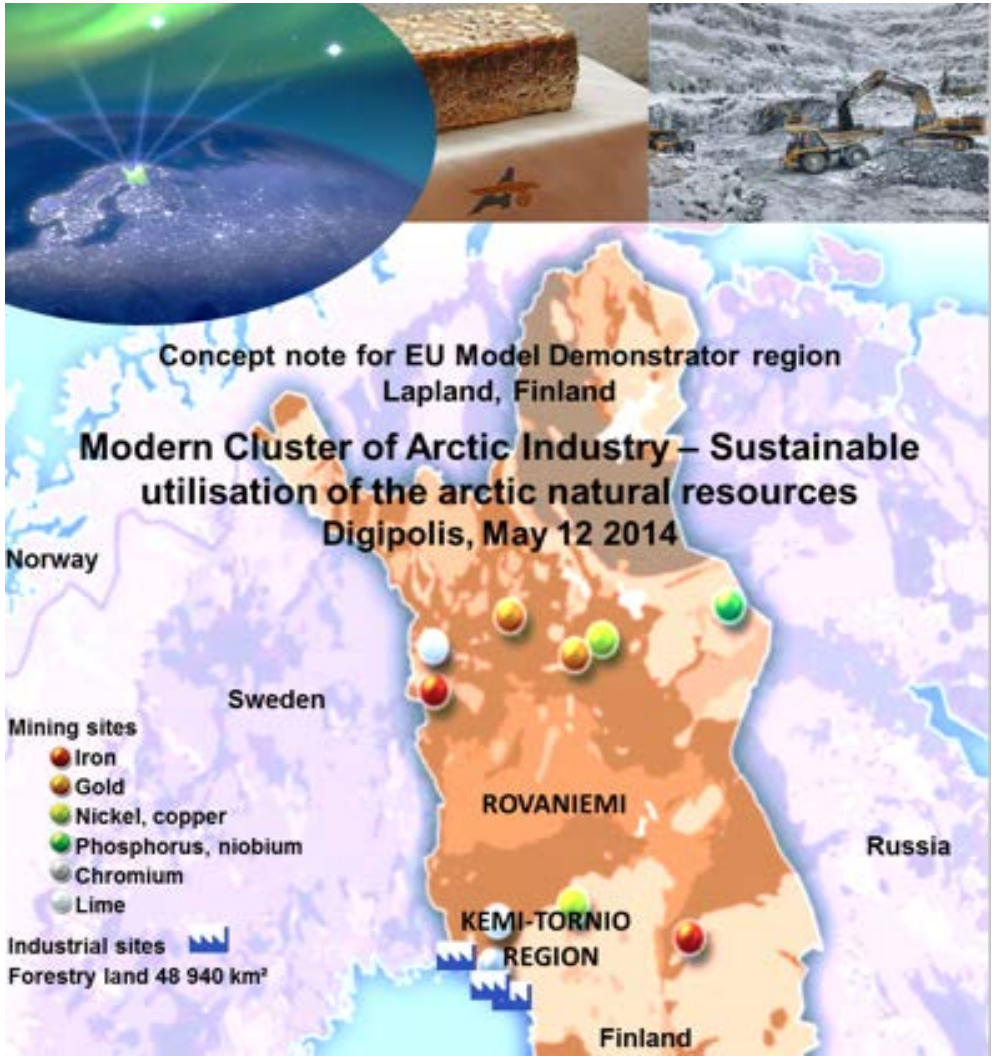
New national wasteplan till 2023

- Regional waste plans not renewed anymore
- National plan renewed
- Councelling in summer 2017
- Expected to be ready in 2017
- ’ From recycling into circular economy’
- 7 major targets for expected status for 2023
- 16 activities

Modern Cluster of Arctic industry – Sustainable utilisation of the arctic natural resources

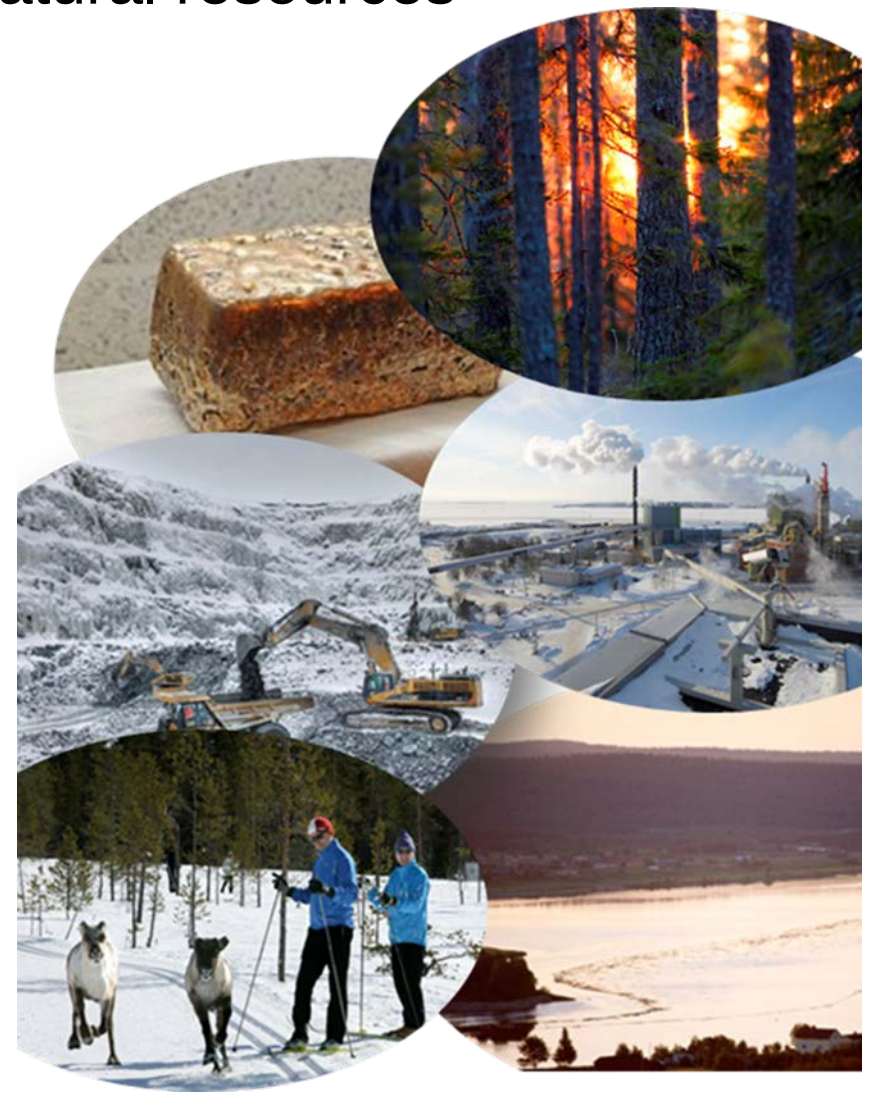
Model region to demonstrate EC new wave cluster policy:

- The region possesses the vast deposits of natural resources and pristine nature
- Lapland has potential to become one of the leading regions in the world in the sustainable exploitation of natural resources
- The region should focus on refining of Arctic natural resources in a socially and ecologically sustainable manner, combined with high value added generation from natural resources in the region
- Focus on to maintain the balance in the sustainable development



Modern Cluster of Arctic industry –
Sustainable utilisation of the arctic natural resources

- The strong focus on circular economy and to accumulate the development of the emerging industries.
- Will be a mix of large-, medium-, and small scale industries and other actors, platforms and living lab arrangements with real-life pilot experiments
- The clustering concept will also utilise efficiently the international and global pipelines and will be a tool for the SMEs in Lapland to improve their performance.
- Eco-innovative, resource efficient and competitive solutions with high extent of value addition to increase cross- sectoral activities in Arctic industries



Digipolis key actor in Finland's Circular Economy roadmap

THIS IS HOW WE BUILD CIRCULAR ECONOMY IN FINLAND

Technical loops

Competitive advantage from the decreased use of virgin raw materials and long lifecycle of materials and products.

Key projects:

- **The Arctic industries ecosystem and Kemi-Tornio circular economy innovation platform. *(Digipolis Oy)***
- Circular economy demo plant for waste electrical and electronic equipment. *(Technology Industries of Finland)*

NORDIC COUNCIL OF MINISTERS' SUSTAINABLE NORDIC BIOECONOMY CASE IN CIRCULATE CATEGORY

nsport and the Environment

The Kemi-Tornio region in northern Finland has established an Arctic industry and circular economy cluster to enhance industrial symbiosis and strengthen the development of a holistic bioeconomy in the region. Via extensive analysis of the by-products and residue streams from companies in the region, value-added products are now being produced by combining and rethinking several by-product and residue streams. Examples include silvicultural thinning practices, bioenergy from forest residues with the possibility for future for largescale biofuel production, as well as two plants that enable recovery of metals from slags from the steel and ferrochrome production in the region.

CRITERIA 1
Sustainable use of natural resources

New steel products created in the region contain an average of almost 90% of recycled steel.

CRITERIA 4
Societal benefits

A total of 14 potential industrial symbiosis business cases have been identified in the region; these investments could employ more than 300 people. New large-scale bioeconomy investments and circular value chains could provide up to 500 new jobs in the ecosystem.

CRITERIA 5
Business model innovation

The initiative focuses on creating new value chains and viable business cases based on the 1.7 million tonnes of by-products and residues annually.

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Finnish industrial circular economy centre to be established in Kemi

- Focus is in the circular economy and the bioeconomy
- In partnership with the Finnish Innovation Fund Sitra, City of Kemi, Digipolis – Kemi Technology Park and Lapland University of Applied Sciences
- First industrial circular economy centre in Finland with national level mandate
- Virtual network of industry, university and development experts

Aims of the centre:

National level

- To promote education and competence in the industrial circular economy across the whole of Finland
- To spread operating models of the Kemi region's industrial circular economy throughout Finland
- To boost the successful circular economy development work that Digipolis – Kemi Technology Park has carried out and to generate vitality for the city of Kemi and for the whole of FinlandCity of Kemi and Lapland level
- To create new investments and jobs – Industry modernization
- Help investments to be more sustainable and efficient
- Lapland is Europe's model region for the sustainability: modern cluster development in the sustainable refinement of natural resources
- Establishing common systematic operational culture → Activation and cooperation of authorities, municipalities, industry, industrial services etc.

ESILLE TULLEET POTENTIAALISET YHTEISTYÖKOHTEET - YLI RAJOJEN, YLI TOIMIALOJEN

Interreg Nord
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INDUSTRIELLT UTVECKLINGSCENTRUM

SINTEF

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