



European Union  
European Regional  
Development Fund

## **REMIX – 9<sup>th</sup> Peer review visit**

**Lapland**



Research and  
innovation



SME  
competitiveness



Environment and  
resource efficiency



Low-carbon  
economy

## REMIX INTERREGIONAL LEARNING PROCESS

- **Based on good practices and peer reviews**
- **Impact only this programming period**
- **Link to policy instrument and IE programme Research and Innovation**
- **Full endorsement by regions**
- **Not a strategy**
- **“implementation oriented actions”**

# LAPLAND

Split to two groups out of four

## QUESTIONS - Lapland - Arctic Industry and Circular Economy Cluster

Industrial circular economy

What are the current industrial level circular economy activities in your region?

How are you or your organisation involved?

What are the materials/side-streams/industries you work with?

Any particular products your region is developing or producing from mining/metallurgy side-streams?

Is there any industrial scale pilots going? How are the pilots funded or how they should be funded?

Who is responsible for overall management of circular economy? What is the role of (1.) SMEs and (2.) large companies?

# LAPLAND

Split to two groups out of four

## QUESTIONS - Lapland - Arctic Industry and Circular Economy Cluster

SMEs support services for innovation in mining value chain  
How are your region's SMEs supported to develop innovation?

Shortage and miss-match of skills\* (including topics of digitalization and training/education)

What are the actions in your region for skills development for mining and metallurgy?

Is there any kind of training or education available in your region? If yes, what kind?

\*Skills can mean: new technology or mineral specific knowledge (for instance valorization or exploration, digitalization) or business/export skills and orientation in whatever part of the value important to your region.



## **LAPLAND –S3 Industrial Modernisation thematic partnership**

**Mining industry and global value chains**

# Background of REMIX

The vision of the EC is to increase the self-sufficiency in the production of the critical minerals by the 2050 → **Need for innovations in EU in the fields of raw materials and mining (metallurgy)**

**Implementing the resource efficiency agenda (circular economy) in order to tackle the major societal challenges.**

## **Implementing the policies**

- Communication between the policies
- Regions with the mineral resources have strategically important role in Europe while developing more sustainable mining industry
- Growth and Jobs agenda, SMEs.
- Balancing the impact - mining & sustainable development.

REMIX and MIREU were initiated by the Regional Council of Lapland (RCL) after discussions with DG GROW, in 2015, including EIP Raw Materials Commitment February 2016 lead by RCL:

- Regions involved started to work to improve raw materials value chain policies and are actively seeking synergies between regional development programmes and strategies such as smart specialisation (RIS3)
- **S3 Industrial Modernisation – Mining industry and global value chains**
- INTERREGIONAL COOPERATION



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# Lapland

in facts & figures

Surface area

**100,366 km<sup>2</sup>**



Water



**7,699 km<sup>2</sup>**



Population

**178,530**

Population density

**1.8 /km<sup>2</sup>**



Employment

**69,000 jobs**

50% in private enterprises

**9,100 private enterprises**



Annual revenue

**€ 13,300 M**

70% from private enterprises

**Fastest growing economy in Finland**



Mining & metal industry

**€ 5,000 M**

Annual revenue



Forest bioeconomy

**€ 1,300 M**

Annual revenue



Tourism overall demand

**€ 1,000 M**

**Fastest growing industry in Lapland**

Annual growth 9%  
20% in 2017



Agricultural production & reindeer husbandry

**€ 340 M**

Annual revenue



**4<sup>th</sup>**

largest export region in Finland

**7%**

of Finnish export

+ World's northernmost bio, mining and metal industry hub

+ Only chromium mine and the largest gold mine in Europe

+ 9 national parks in the area

+ World's cleanest air and Europe's purest water

+ World's largest wild organic harvesting area

+ Strong educational structure: University of Lapland,  
Lapland University of Applied Sciences, Vocational College Lappia,  
Lapland Education Centre REDU and Sami Education Institute

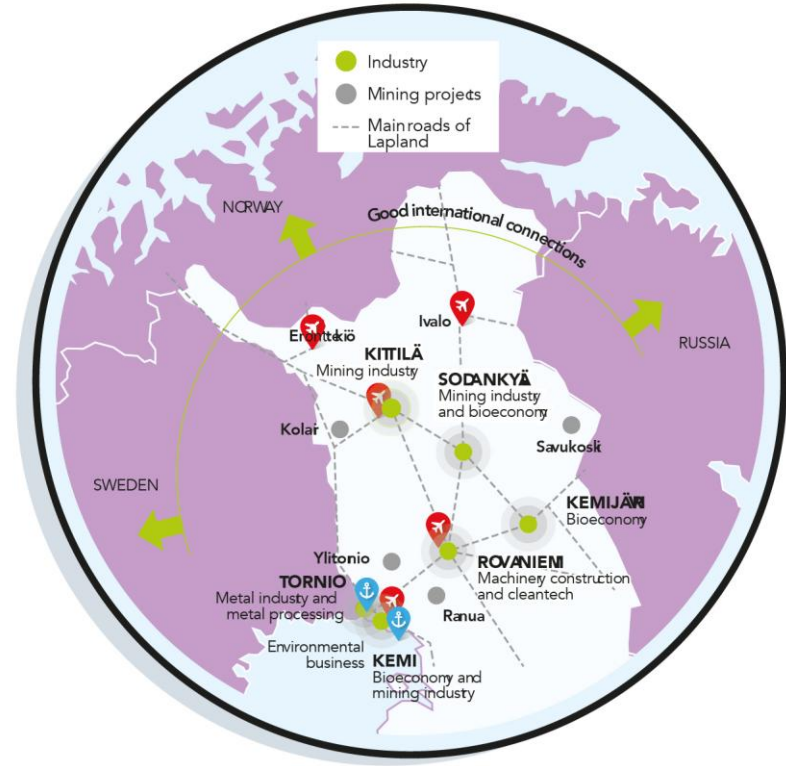
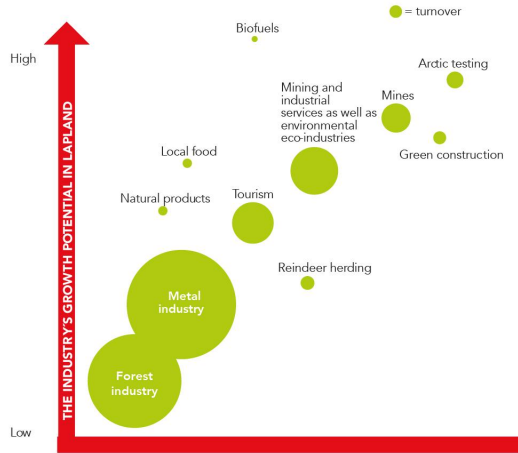
+ Research institutes: Geological Survey of Finland (GTK),  
Natural Resources Institute Finland (LUKE), Sodankylä  
Geophysical Observatory (SGO) as the most notable

+ National circular and bio-economy centre in Kemi

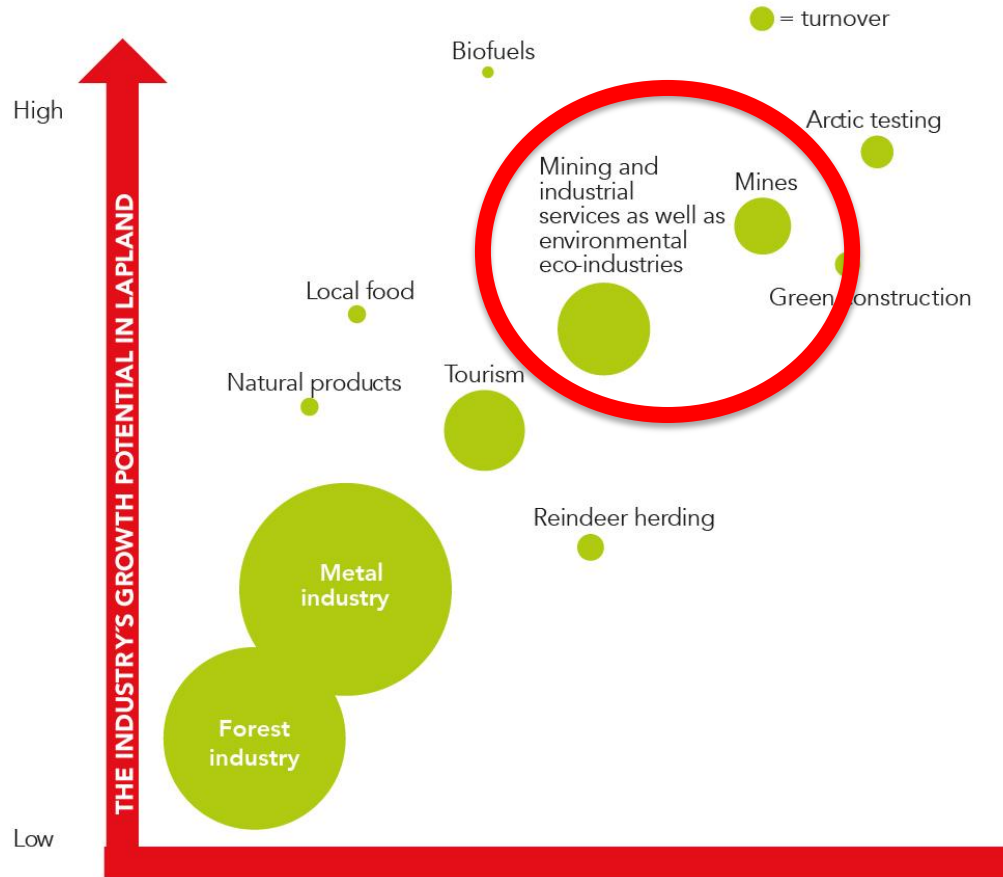
## Main industries in Lapland

-  Forest industry
-  Metal industry
-  Tourism
-  Trade
-  Mining industry

## Growth potential of industries related to the Arctic business of Lapland



# Growth potential of industries related to the Arctic business of Lapland



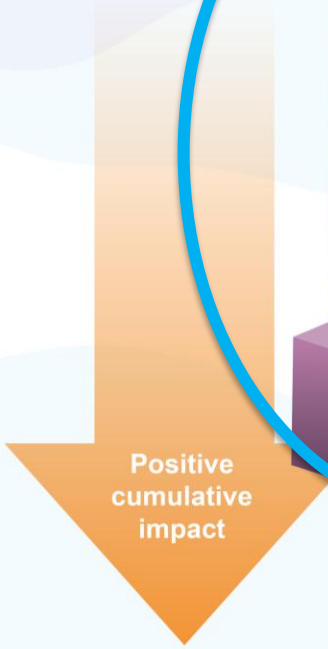
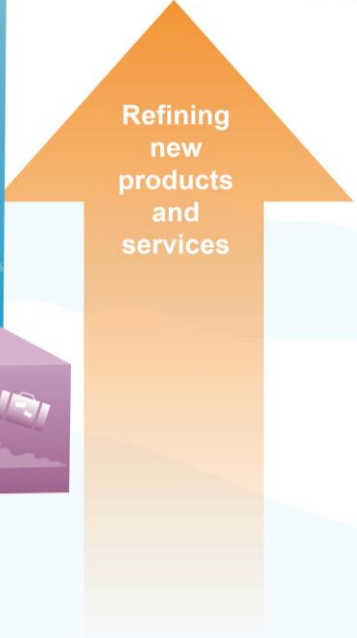
# ECOSYSTEM OF ARCTIC INDUSTRY

Kemi-Tornio's circular economy innovation platform

- World's northernmost hub of bio-, mining-, metal industry and services
- 1,7 Mt of by-products and residues (excluding waste rock)
- Responsible for 80% of Lapland's industrial production, with over 5 billion EUR of exports annually (7-8 % of the total export value of Finland)
- Industrial symbiosis estimated at 700 million EUR annually



# Lapland's economic backbone



New industries rising from the needs of the leading industries  
Independent new industries emerging alongside the leading industries

Creation and guidance of the next generation industries

..more specific  
industrial focus...

Three economic backbones of Lapland  
underlying the emerging Arctic business



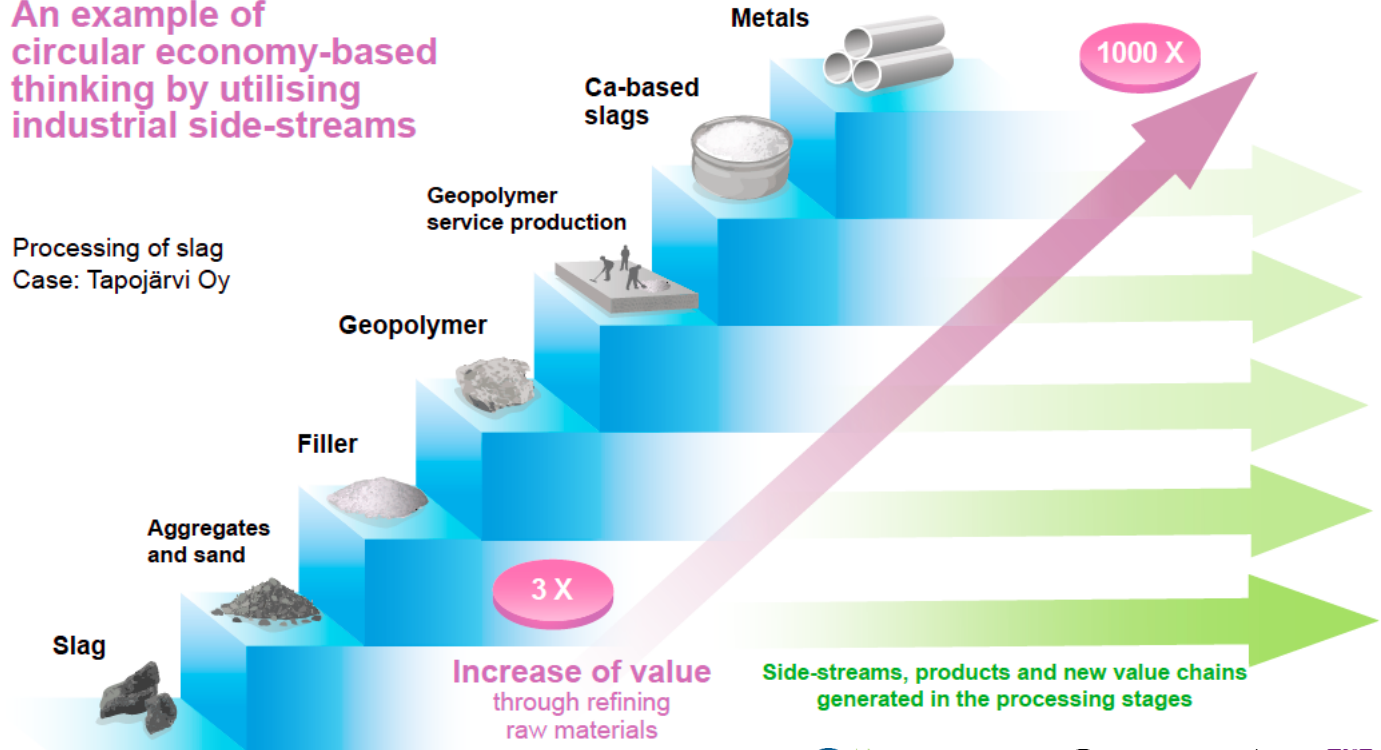
The new industries will emerge with the support of four strategic business spearheads

# Smart specialisation in practice

**ARCTIC  
INDUSTRY  
AND CIRCULAR  
ECONOMY**  
CLUSTER

An example of  
circular economy-based  
thinking by utilising  
industrial side-streams

Processing of slag  
Case: Tapojärvi Oy







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Thank you!

Questions welcome



*Project smedia*