MODERN CLUSTER OF ARCTIC INDUSTRY

Sustainable utilisation of Arctic natural resources

DIGIPOLIS

Arctic Industry and Circular Economy Cluster - Smart Specialisation in Practise

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Main regional characteristics

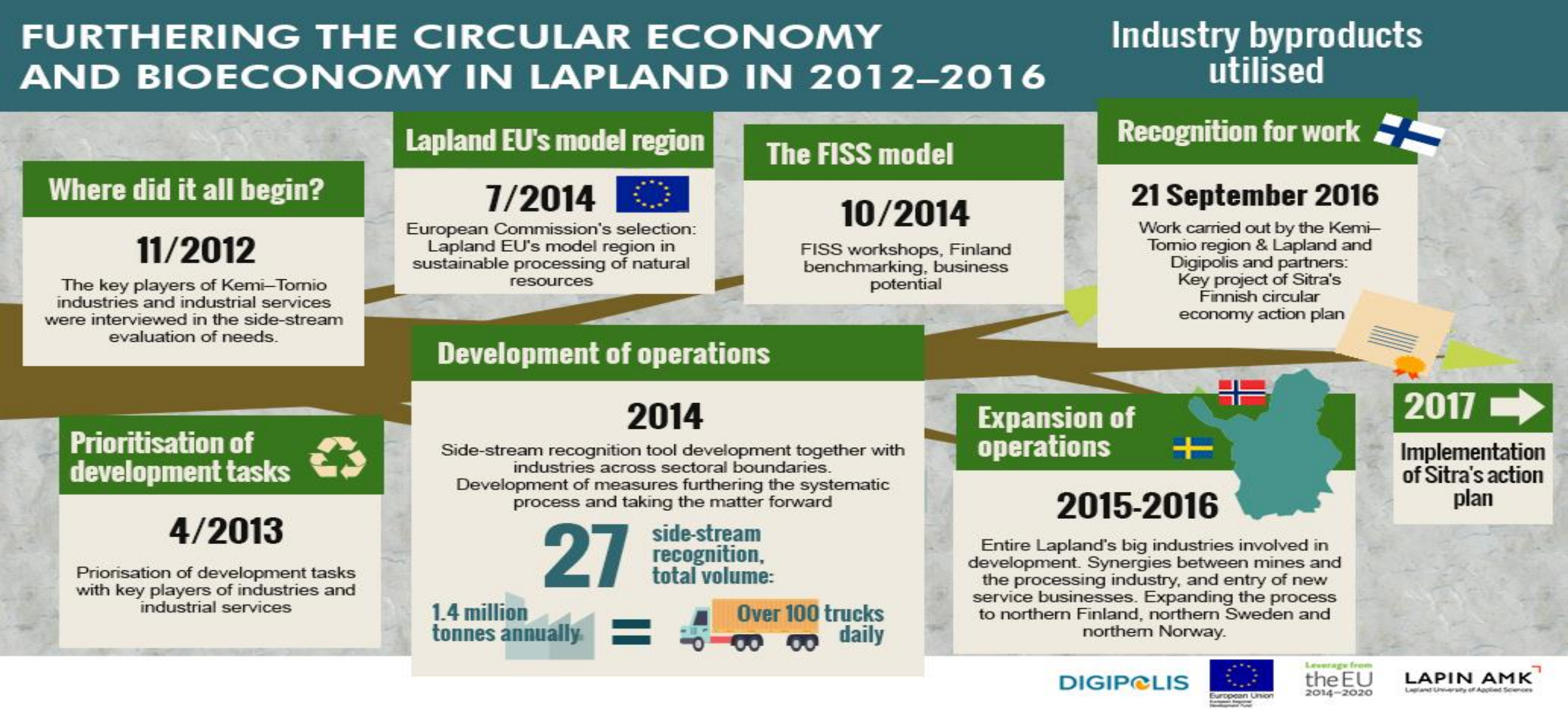
- Surface area 100,366 km², of which 7,699 km² is water
- Population 180,200, population density 1.8 /km²
- Employment: approximately 69,000 jobs, of which approx. 50% are in private enterprises
- Number of private enterprises 9,100
- Annual revenue of Lapland €12,000 M, of which 70% comes from private enterprises
- Annual revenue of mining and metal industry approx. € 5,000 M
- Annual revenue of forest bioeconomy approx. € 1,300 M
- World's northernmost bio, mining and metal industry hub
- Europe's only chromium mine and the largest gold mine in Europe
- Tourism is the fastest growing sector with overall demand of approx. € 1,000 M and an average annual growth of 9%, in 2017 as much as 20%
- Agricultural production and reindeer husbandry approx. € 340 M
- Finland's fourth largest export region, 7 % of Finnish export
- Nine 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 the education centre of the Sámi region
- 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

Lapland has the fastest growing economy in Finland

Lapland is a unique Arctic region that wants to be the most innovative and entrepreneur-driven of all the sparsely populated EU regions by the year 2022. The future objectives are set high, but the measures for achieving those goals are tangible and close to the operators.

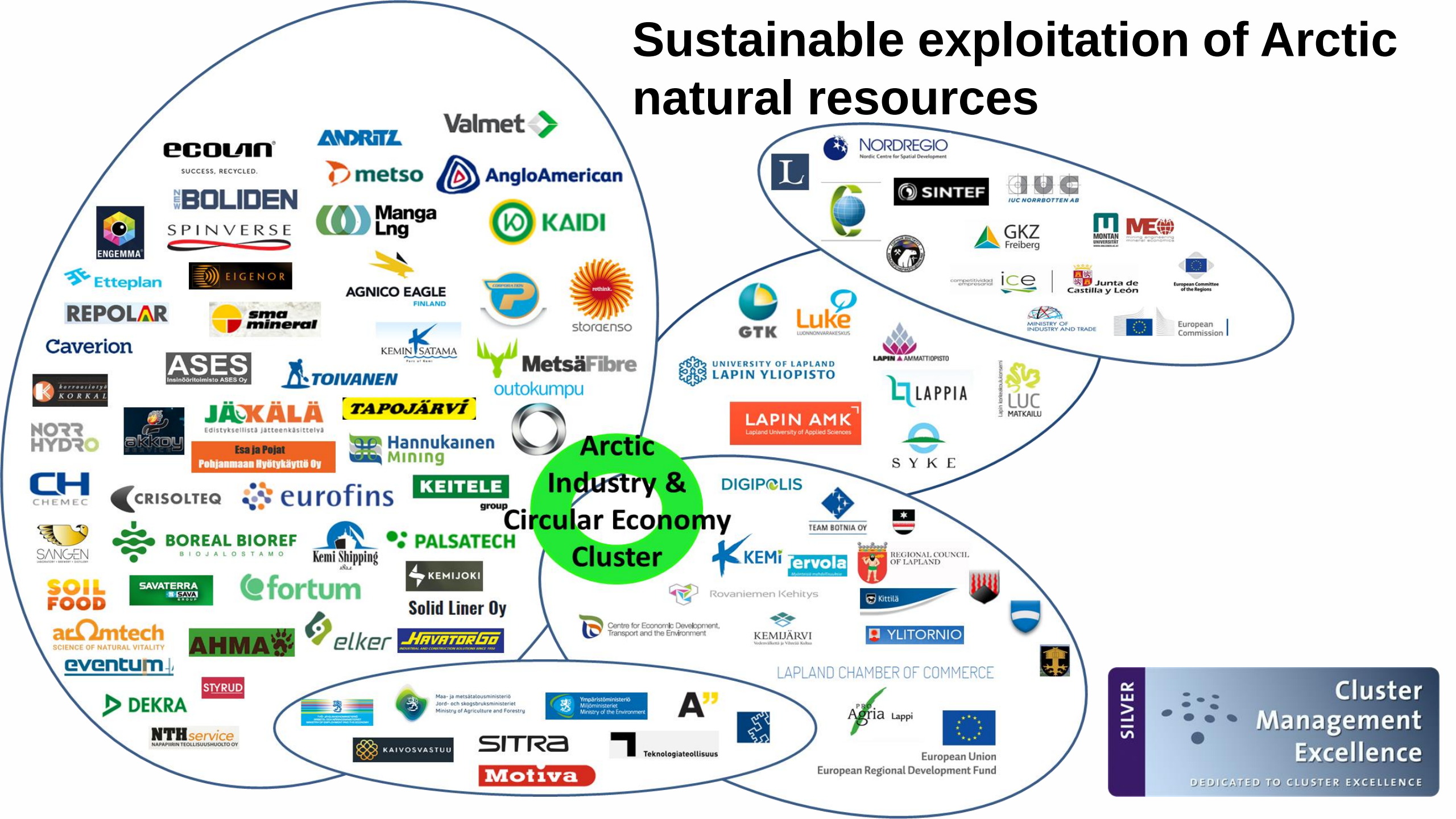
Kemi-Tornio’s circular economy innovation platform

- Worlds northernmost hub of bio-, mining -, metal industry and services
- Responsible for 80% of Lapland’s industrial production - 5 billion EUR of exports annually
- Industrial symbiosis : 700 million EUR annually
- Industrial- and mining service companies receive orders worth of hundreds of millions.
- Enhancing Circular Economy



Smart specialisation strategy & Implementation process in Lapland in 2012-2019 contributing significantly to the development of the Smart Cluster of Industry and Circular Economy

Sustainable exploitation of Arctic natural resources



SILVER

Cluster Management Excellence

DEDICATED TO CLUSTER EXCELLENCE

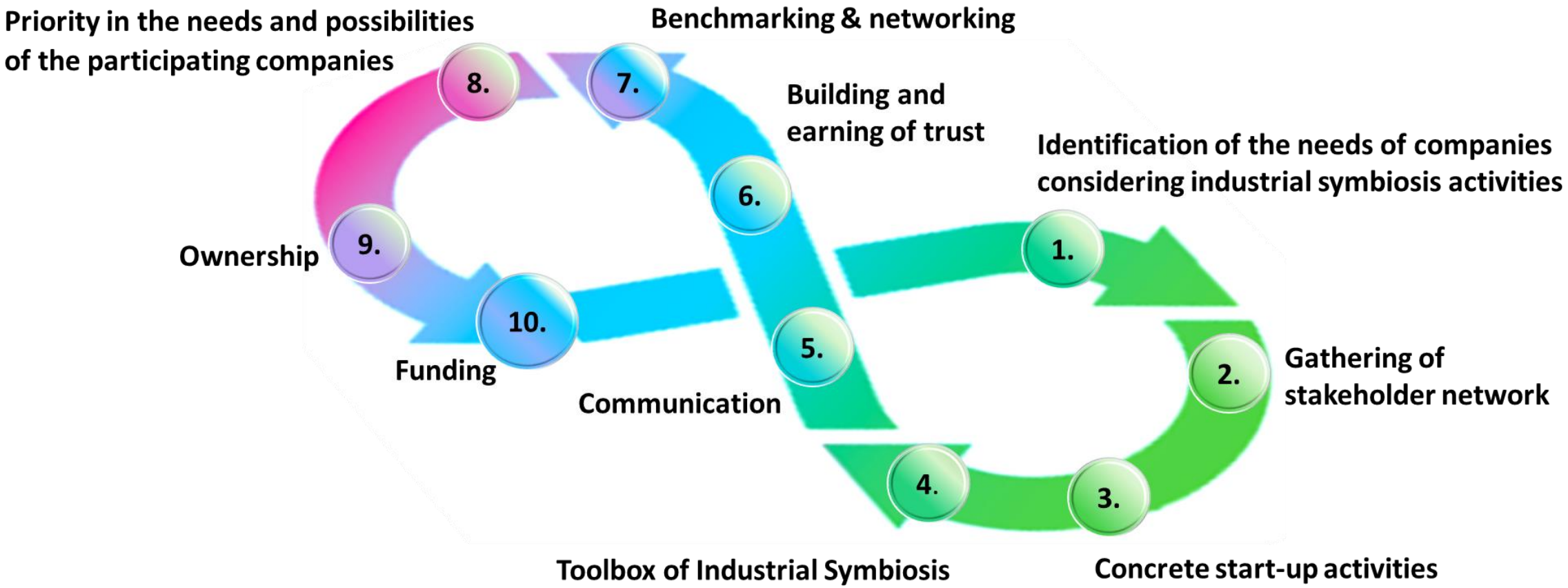
Finnish industrial circular economy centre - established in Kemi in 2017

- First industrial circular economy centre in Finland with national level mandate
- Sitra, City of Kemi, Digipolis – Kemi Technology Park and Lapland University of Applied Sciences and founding members
- Network of industry & university experts and intermediaries
- International network including e.g. Nordic , BSR, EU level and Chinese partners

- **National level goals**: competence building in industrial circular economy, spreading the operating models of the Kemi industrial circular economy in Finland
- **Regional/local level goals**: new investments and jobs, contribution to sustainable and resource efficient industry modernization, cooperation culture, new experts – CE educatiion

THE DESCRIPTION OF OPERATIONAL MODEL

For Industrial Circular Economy



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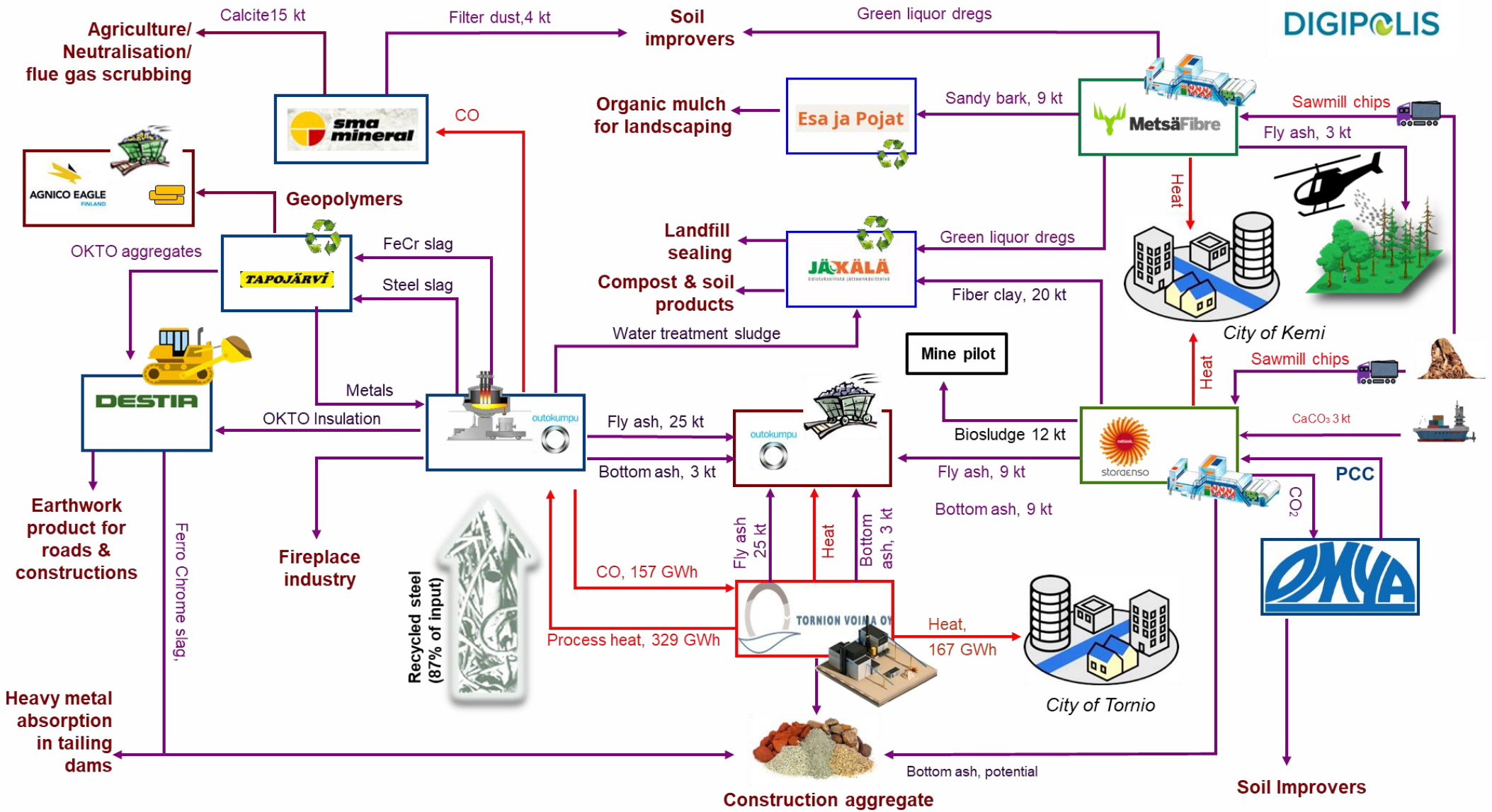
Kemi-Tornio circular economy ecosystem



Baltic Industrial Symbiosis

- A Baltic Sea Region Interreg Project started in 2019 aims to facilitate capacity building and to inspire more public and private partners to engage in Industrial Symbiosis development efforts.

- Project Partners from Denmark, Finland, Norway, Poland and Sweden

  - Kalundborg Symbiosis, **Kemi/Arctic Industry and Circular Economy Cluster**, Paper Province, and Trøndelag Municipality, Linköping University of Technology, Denmarks Technical University and Gdansk University, The Swedish Agency for Economic and Regional Growth

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

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.

Thank you!

Please visit: www.digipolis.fi, www.teollinenkiertotalous.fi/en/home.html

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