



# SHAPE Ecosystem

6.2.2024



# Mirka

- Mirka is a family-owned Finnish company and a part of the KWH Group.
- We have been dedicated to the finish since 1943. With constant improvement and innovation, Mirka has become a world leader in abrasives technology.
- We are the only company that develops and produces abrasives, tools and polishing compounds under the same roof.

[Celebrating 80 Years of Dedicated Innovation Work](#)



# Mirka's production locations



## Finland:

- Jeppo: Main plant. Head office, Technology, and R&D center
- Jakobstad: Manufacturing of power tools, micro products, and polishing compounds
- Karis: Manufacturing of raw materials
- Oravais: Converting
- Nurmijärvi: Automated grinding solutions and robotic tools

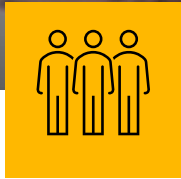


**Belgium:** Conversion of belts and rolls, warehouse



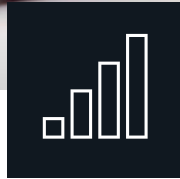
**Italy:** Diamond and CBN wheels and tools





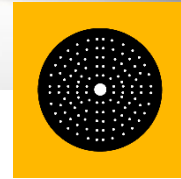
## People

We are almost 1600 people working globally for Mirka. Our dedicated experts work in sales, production, R&D, customer service etc.



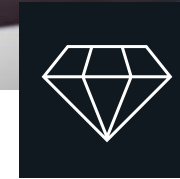
## Finance

Our turnover has developed very well, reaching 392M€ in 2022. Mirka is a part of the KWH Group.



## Sectors

Our products and solutions are used in collision repair, transport, construction & decoration, wood, industry and precision industry sectors.



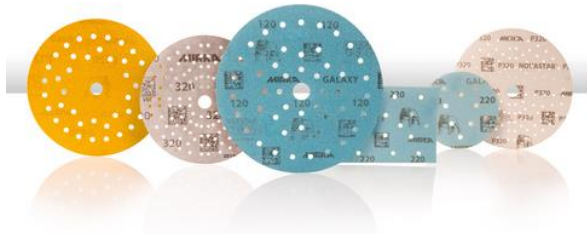
## Values

We are responsible, committed, innovative and respectful. We create sustainable solutions that are at the forefront of innovation.



# Our Product Portfolio

## Abrasives



## Polishing compounds



## Power Tools



## Robotics



## Superabrasives



## Essentials





SHAPING THE GREEN TRANSITION

# SHAPE Ecosystem

06.02.2024 LigninReSurf

Markus Kass  
Tech. Man.  
Mirka



**BUSINESS  
FINLAND**

In order to keep global warming to no more than 1.5 Celsius above pre-industrial levels, **human-made emissions need to reduce by 45% before 2030 and we need net-zero emissions by 2050.**







# The Challenge

Rapid **population growth and urbanization** are driving the demand for safe and durable products across the globe...

45% of CO<sub>2</sub> footprint in Europe comes from manufacturing and construction

364 000km<sup>2</sup> of surfaces finished in the EU each year cause 460 kt of microplastics per year and 69 Mt of CO<sub>2</sub>



# Green transition in the manufacturing industry

## Threats

- Circularity in surface finishing can be challenging
- Limitations and regulation of which materials can be used
- In the end, Abrasives are consumables and have a relatively short life

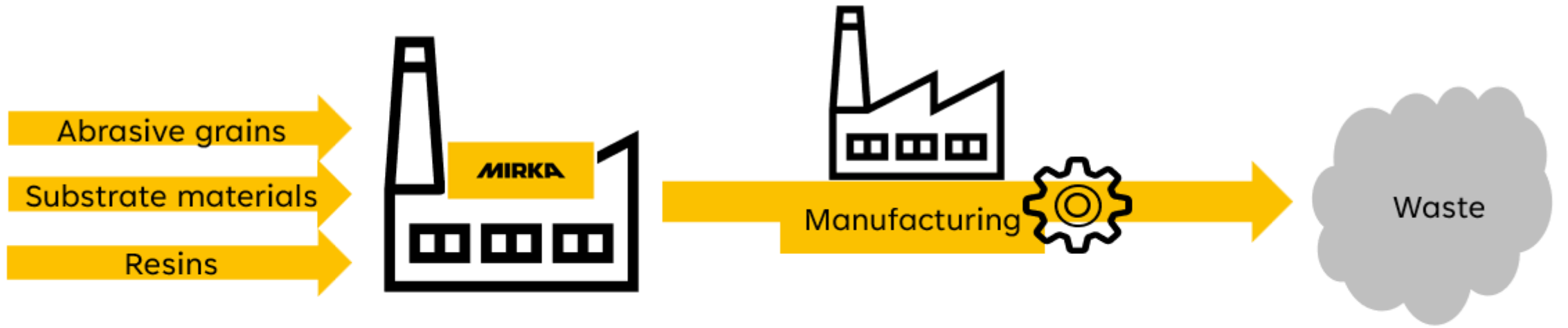
## Opportunities

- Remanufacturing business expected to reach 90 B€ new business within the EU until 2030
- Net zero by 2050 will require €275 trillion in asset investments (all need surface finishing).
- New business models and new USP:s are becoming key.

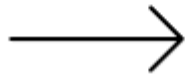




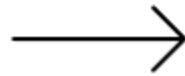
# The Challenge



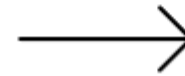
**TAKE**



**MAKE**



**USE**



**WASTE**





**MIRKA**



**But how do we get there?**

# Shaping the green transition (SHAPE)

- a 5-year long Business Finland Veturi-project
- 10 million euros in development funding for Mirka and the SHAPE programme
- 20 million euros to the ecosystem companies surrounding SHAPE
- over 100 ecosystem partners
- co-innovations, co-research, other projects, EU projects and supporting functions
- a unique project and first of its kind in Finland





Not all companies can or choose to accelerate green transition. But we at SHAPE can.



MIRIKA

SHAPE is an ecosystem of corporations, science, finance and public organizations committed to turn the climate and biodiversity challenges into opportunities. Our goal is to be an active driver in the emerging manufacturing industry.



The Veturi SHAPE ecosystem aims to take a share of the remanufacturing business growth which is expected to reach **90 B€ in EU by 2030**

Driving green transition of manufacturing industry by enabling net carbon negative surfaces



**Markus Kass**

Sustainable Materials

**Viktor Sundholm**

Project Manager Ecosystem

**Maria Smeds Engström**

Project Manager Ecosystem

**MEET THE  
TEAM**



**Mats Bystedt**

Repair, refurbish and remanufacture

**Mika Adler**

Intelligence throughout value chains

**Charlotta Risku**

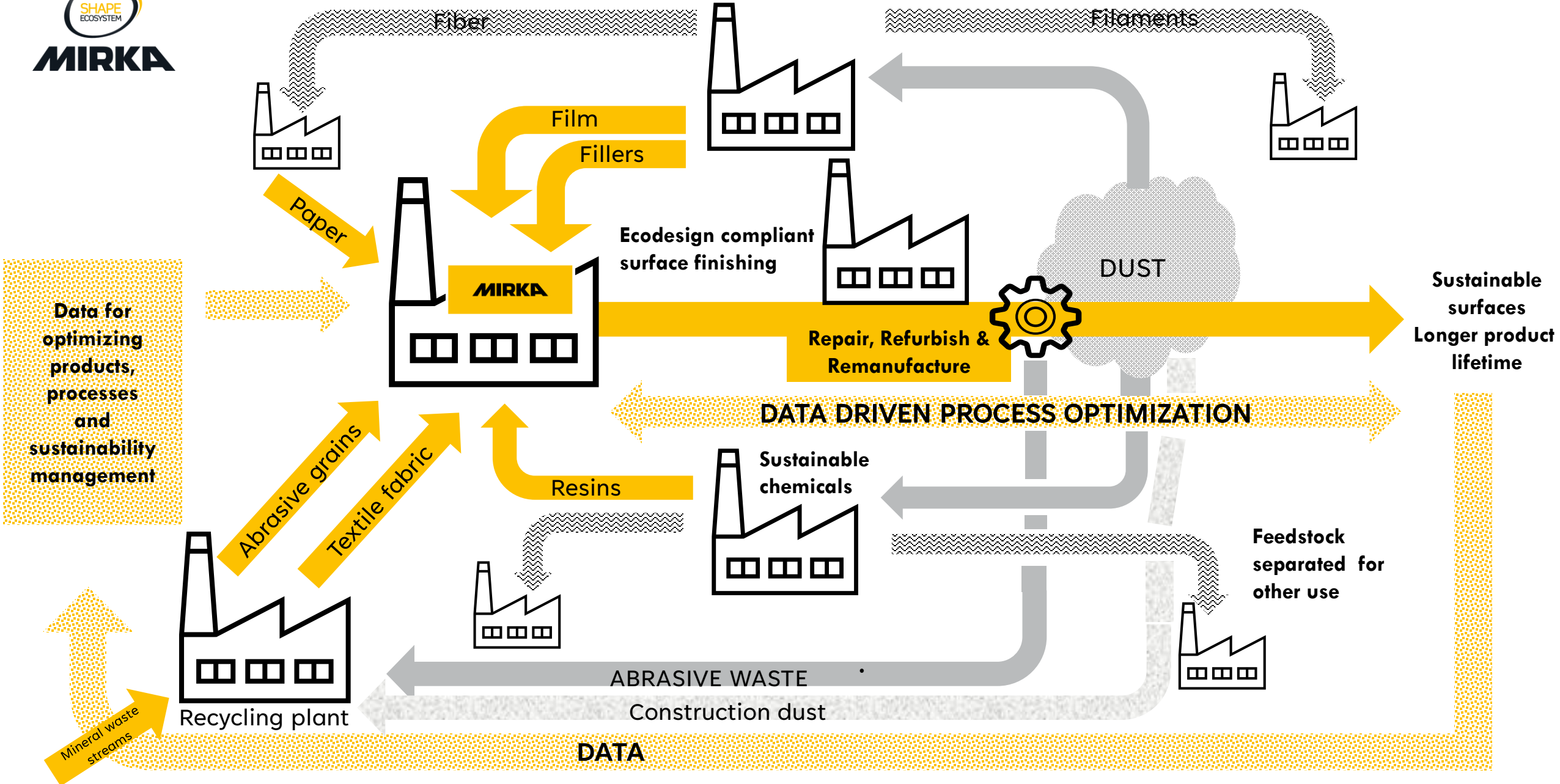
SHAPE Programme Manager

**Petra Härmälä**

Boosting circularity



# Our Vision - Shaping the green transition





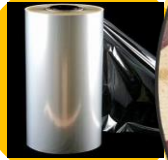
# First year of SHAPE

- Verified Ecosystem partners: 33
- Granted projects (Co-I, Co-R): 3
- Projects in application phase: 10
- + all the internal projects

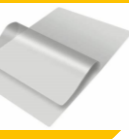


**Lignin applications in abrasive material**

Adhesive



Substrate (PET film)/foam



Latex



Composite

**UV-curable lignin-based resin at Mirka**

Pulp mill



Lignin



UV-curable lignin-based resin



Final sand paper



After sanding test

• **Summary**

Lignin can be utilized to synthesize a bio-based monomer for the sustainable resin for both heat and UV curing resins.

Enhancing the sanding results by improving the resin properties.

• **Challangaes**

Heterogeneity of lignin, which requires several processing steps to make it suitable as an adhesive component.

UV blocking property of lignin, which prevents the proper curing of the adhesive under UV light. Improved by modifying the lignin structure.

Low hardness of lignin, which affects the mechanical performance of the adhesive. This can be enhanced by adding some additives to the resin formulation.





**Thank you!**



**Join the  
SHAPE  
Ecosystem!**

**[www.shape-ecosystem.com](http://www.shape-ecosystem.com)**