BUSINESS FINLAND

BUILDING SUSTAINABLE ECOSYSTEM IN THE FIELD OF BATTERIES

Mr. Seppo Kaikkonen, Head of Batteries from Finland,
Business Finland

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JOIN *BATTERIES FROM FINLAND* ACTIVITY!

OBJECTIVES:

1. To create an internationally competitive battery **ecosystem**
2. To develop leading battery **recycling technologies** and solutions
3. To grow **leading technological solutions**
4. To attract battery production and international RDI centres into Finland - **IIF**
5. To ensure constant **Business Finland services**

SUPPORTED INNOVATIONS BY BUSINESS FINLAND IN BATTERY SECTOR

Battery sector funding 2014->
100+ projects
40+ million euros

Battery sector and related industries funding 2014->
ca 200 projects
ca 70 million euros

BATTERIES FROM FINLAND NEXT STEPS

INVESTIGATION

Overview of the current and pending ecosystem and cluster projects

ECOSYSTEM BUILDING

- Activate **networking** between companies and existing ecosystem and cluster projects

VISION:

BUILDING A MULTI BILLION CLASS ECOSYSTEM

STRATEGIC THEMES

- Battery system engineering
- Developing battery applications for harsh use
- Traceability in the value chain
- Battery safety
- Large scale recycling of lithium batteries
- Battery raw materials and chemicals

Esa Lindqvist

Kari Keskinen

- Public policy
- Regulation and standardization
- Traceability and data management
- Safety

- Technology and Manufacturing
- Economic viability
- Collaboration
- Competence

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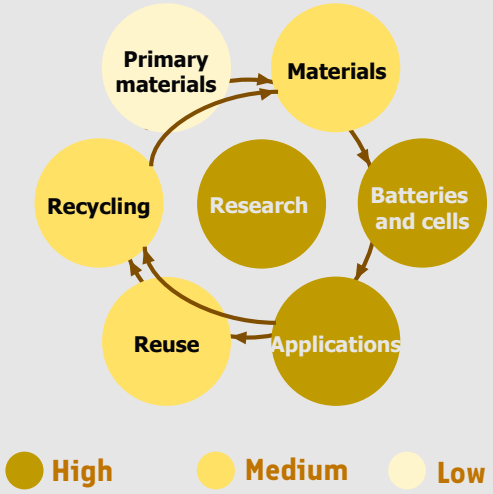
DEVELOPING BATTERY APPLICATIONS FOR HARSH USE

Developing battery applications for harsh use

Value chain relevance



Overall scoping and theme components

- Focusing on product development and life-cycle design and modelling
- Developing chemistries for harsh environments
- Advancing knowhow and education

Key drivers and needs

- Climate strategies of both private and public sectors organisations
- Environmental requirements
- Piloting, testing and showcasing of solutions
- Knowhow and expertise e.g. within system integration

Needed partners and Nordic dimension

- Partners needed across the value chain, including those in: Battery chemistry developers, Module engineering, Thermal management, Battery Management System Developers, Pack engineering; and also Universities and End users
- Joint ventures between different Nordic actors should be considered, for example within collaboration around process know-how, cooperation on pilot projects and establishing testbeds/testing environments

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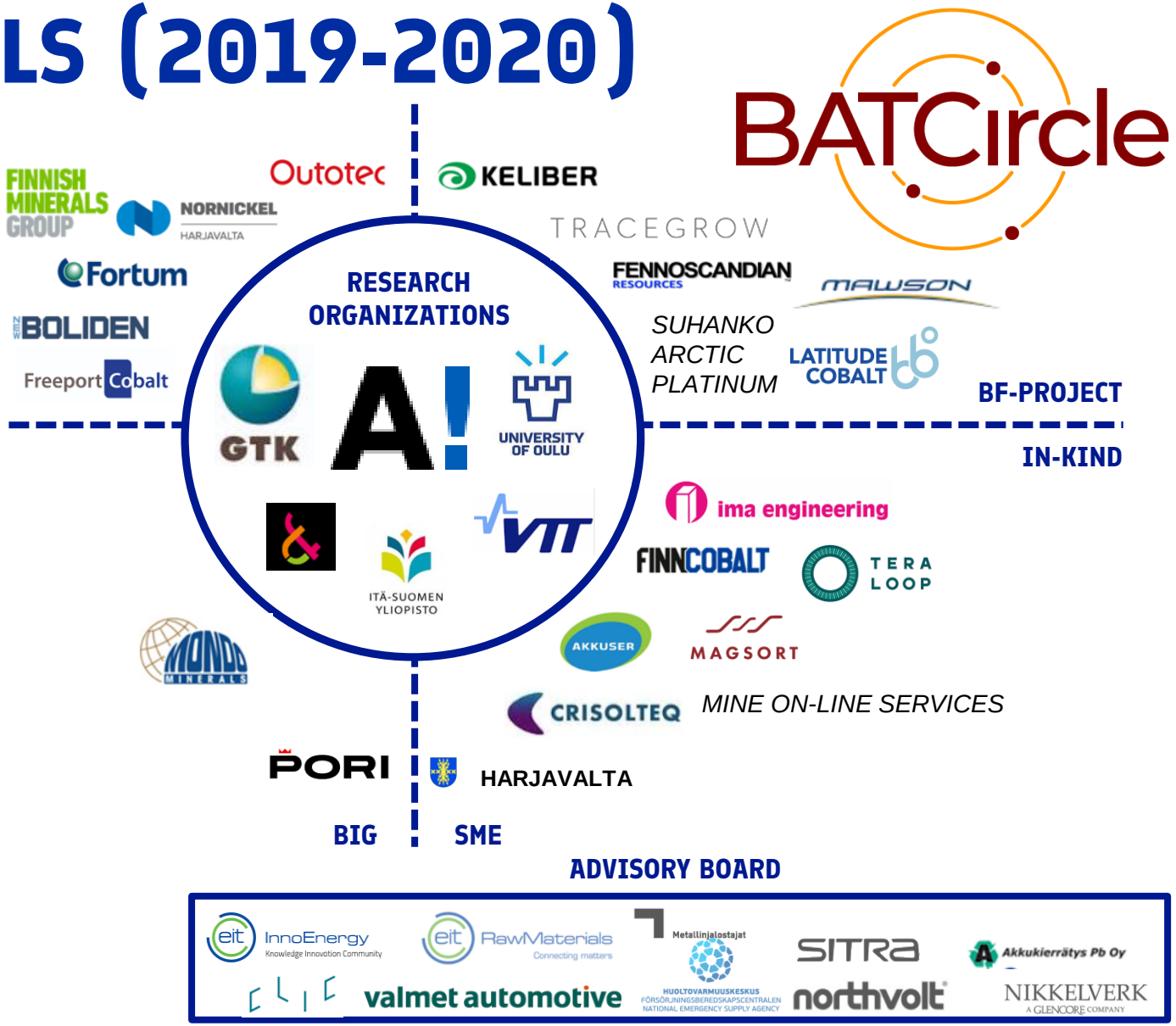
FINLAND-BASED CIRCULAR ECOSYSTEM OF BATTERY METALS (2019-2020)

Joint industry-academia project

- 8 large companies
- 14 SMEs
- 2 cities
- 4 universities
- 2 Research centers (GTK,VTT)
- 21 M€ budget

Key topics

- Sustainable primary resources
- Value addition in metal refining
- Battery recycling
- Precursors and active materials
- Circular business ecosystems



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CO-CREATION FUNDING

FUNDING FOR DEVELOPING A RESEARCH IDEA AND FOR BUILDING COOPERATIVE NETWORKS

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CO-INNOVATION FUNDING

FUNDING FOR R&D PROJECTS BY COMPANIES AND RESEARCH ORGANISATIONS, IN WHICH THEY JOINTLY DEVELOP NEW KNOWLEDGE AND INNOVATIONS FOR NEW BUSINESS NEEDS.

SERVICES FOR CROWTH ENGINES

AIMING FOR BILLION-EURO NEW BUSINESS, EXPORTS AND INVESTMENTS TO FINLAND


SAVING
THE WORLD
IS OUR
BUSINESS