

# Battery Strategy 2025

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Ministry of Economic Affairs  
and Employment of Finland



I

**BACKGROUND**

II

STRATEGIC  
OBJECTIVES

III

STRATEGIC  
ACTIONS

# Strategy project launched in June 2020





Ministry of Economic Affairs  
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## Battery strategy to strengthen Finland's position as a pioneer in sustainable battery manufacturing

Ministry of Economic Affairs and Employment 26.6.2020 13:54

PRESS RELEASE



The Ministry of Economic Affairs and Employment has launched work to formulate a national battery strategy that will enable Finland to strengthen its role as a pioneer in sustainable battery manufacturing and recycling.

Minister of Economic Affairs **Mika Lintilä** appointed a working group on 24 June to prepare the strategy by the end of 2020.

fi sv en

<https://tem.fi/en/-/battery-strategy-to-strengthen-finland-s-position-as-a-pioneer-in-sustainable-battery-manufacturing>

# The Objectives of the Strategy Project



- Strengthen Finland's role in **sustainable battery manufacturing and recycling**
- Minimize **carbon footprint**, maximize **carbon handprint**
- Strengthen the **battery ecosystem**
- Boost **sustainable, low-carbon economic growth** in Finland
- Promote regeneration of businesses, **innovation** work and **growth** potential
- Create **new jobs**

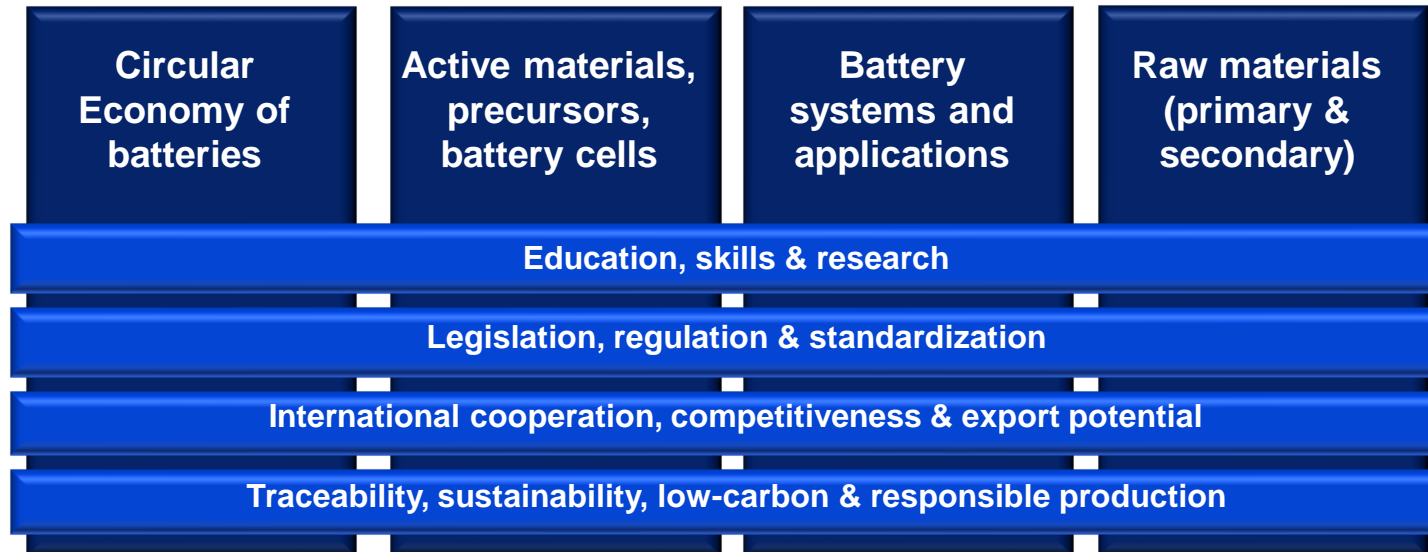


# Starting points and lessons learned



- **The strategy is focusing on industrial policy enhancing climate goals**
  - The footprint of the industry is remarkable, and so is the business potential. In Finland we are able to produce batteries and battery materials with small footprint.
- **Doing the strategy the right way**
  - We started with vision, made SWOT analyses, identified must win battles and came out with policy goals and actions
  -
- **Lessons learned:**
  - The question is not only about batteries, the challenge and opportunity is much bigger, it is about electrification of societies. Currently we are talking about Evs but the same process is going on in heavy duty vehicles and in other areas as well.
  - We are not talking about batteries, but batteries and electrofication in the strategy

# Eight Key Themes & Working Groups



# Members of the core strategy team



# The Launch in January 2021



Press conference 26 Jan 2021



Webinar 28 Jan 2021  
[www.batteriesfromfinland.fi](http://www.batteriesfromfinland.fi)



# The Vision



The Finnish battery and electrification cluster in 2025 is a forerunner that creates new skills, innovations, sustainable economic growth, well-being and new jobs for Finland.

We create the low carbon future through batteries and electrification: Shift **Climate**. Build **Circularity**. Champion **People**. Create **Innovations**. Enable **Growth**.”



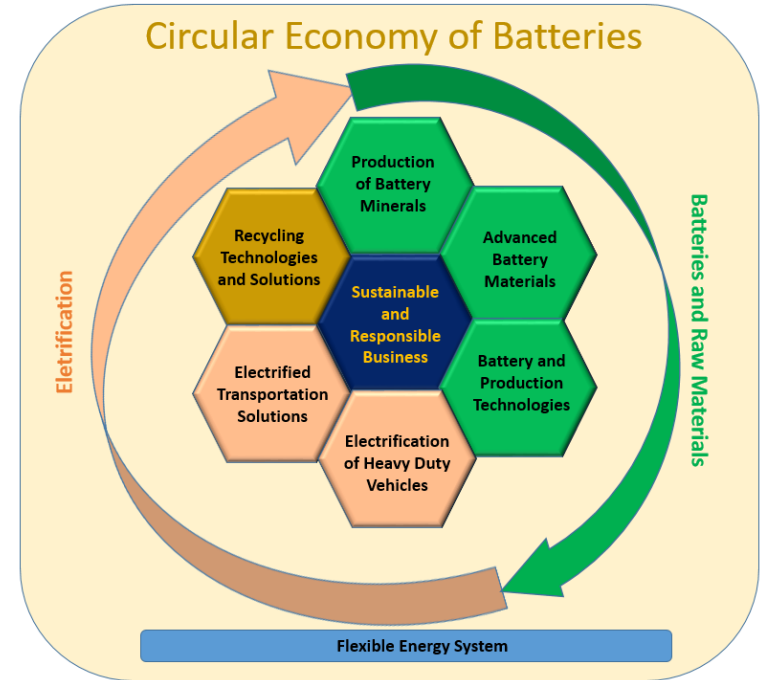
# Focus Areas of the Battery Strategy



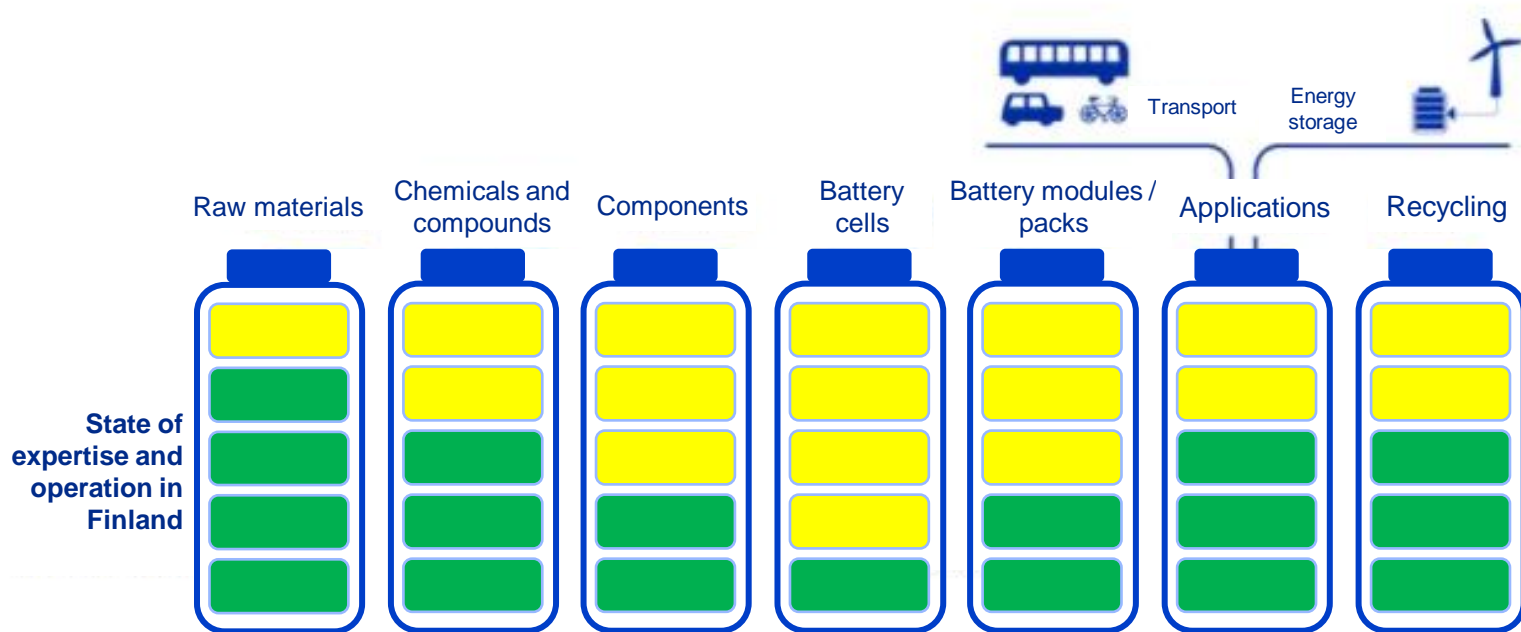
## Focus Areas

1. Production of Battery Minerals
2. Advanced Battery Materials
3. Battery and Production Technologies
4. Electrification of Heavy Duty Vehicles
5. Electrified Transportation Solutions
6. Recycling Technologies and Solutions

...with ***Sustainable and Responsible Business*** as a cross-cutting theme.



# Maturity of the battery value chain



# BloombergNEF supply chain ranking



Figure 1: Lithium-ion battery supply chain rankings, 2020 and expected in 2025

Country	2020 rank	Raw material	Cell & component	Environ.	RII	Demand	2025 rank	Raw material	Cell & component	Environ.	RII	Demand
China	1	1	1	16	11	1	1	1	1	15(▲1)	11	1
Japan	2	12	2	6	7	6	2	8(▲4)	3(▼1)	7(▼1)	7	8(▼2)
S. Korea	3	17	2	9	5	2	8(▼5)	16(▲1)	2	13(▼4)	5	9(▼7)
Canada	4	4	10	4	10	11	5(▼1)	3(▲1)	12(▼2)	4	10	6(▲5)
Germany	4	17	6	12	2	2	6(▼2)	22(▼5)	6	9(▲3)	2	3(▼1)
U.S.	6	15	4	13	6	2	3(▲3)	13(▲2)	3(▲1)	7(▲6)	6	2
U.K.	7	17	6	9	4	6	8(▼1)	17	8(▼2)	10(▼1)	4	4(▲2)
Finland	8	11	13	5	3	13	7(▲1)	10(▲1)	8(▲5)	6(▼1)	3	17(▼4)
France	8	17	13	1	9	5	10(▼2)	17	12(▲1)	1	9	5
Sweden	10	22	13	3	1	8	4(▲6)	17(▲5)	7(▲6)	3	1	7(▲1)
Australia	11	2	13	21	12	8	11	2	12(▲1)	19(▲2)	12	11(▼3)
Brazil	12	3	13	2	24	23	12	7(▼4)	18(▼5)	2	24	15(▲8)
Poland	12	22	5	11	13	14	13(▼1)	22	5	12(▼1)	13	19(▼5)
Hungary	12	22	6	8	14	15	15(▼3)	22	8(▼2)	11(▼3)	14	18(▼3)
Czech Rep.	15	17	10	17	8	17	16(▼1)	17	12(▼2)	17	8	21(▼4)
India	16	9	13	19	18	11	16	13(▼4)	18(▼5)	21(▼2)	18	10(▲1)
Chile	17	6	13	18	16	20	14(▲3)	4(▲2)	12(▲1)	15(▲3)	16	23(▼3)
Vietnam	18	16	6	22	20	10	23(▼5)	17(▼1)	12(▼6)	23(▼1)	20	12(▼2)
S. Africa	19	5	13	23	17	19	20(▼1)	4(▲1)	18(▼5)	19(▲4)	17	22(▼2)
Argentina	20	12	13	6	22	24	16(▲4)	8(▲4)	18(▼5)	5(▲1)	22	25(▼1)
Indonesia	21	7	13	25	21	15	20(▲1)	4(▲3)	18(▼5)	24(▲1)	21	13(▲2)
Mexico	22	12	13	15	19	22	16(▲6)	12	18(▼5)	13(▲2)	19	16(▲6)
Thailand	23	22	10	19	15	17	22(▲1)	22	8(▲2)	21(▼2)	15	20(▼3)
D.R.C.	24	8	13	14	25	24	25(▼1)	10(▼2)	18(▼5)	18(▼4)	25	24
Philippines	25	9	13	24	23	20	24(▲1)	13(▼4)	18(▼5)	25(▼1)	23	14(▲6)

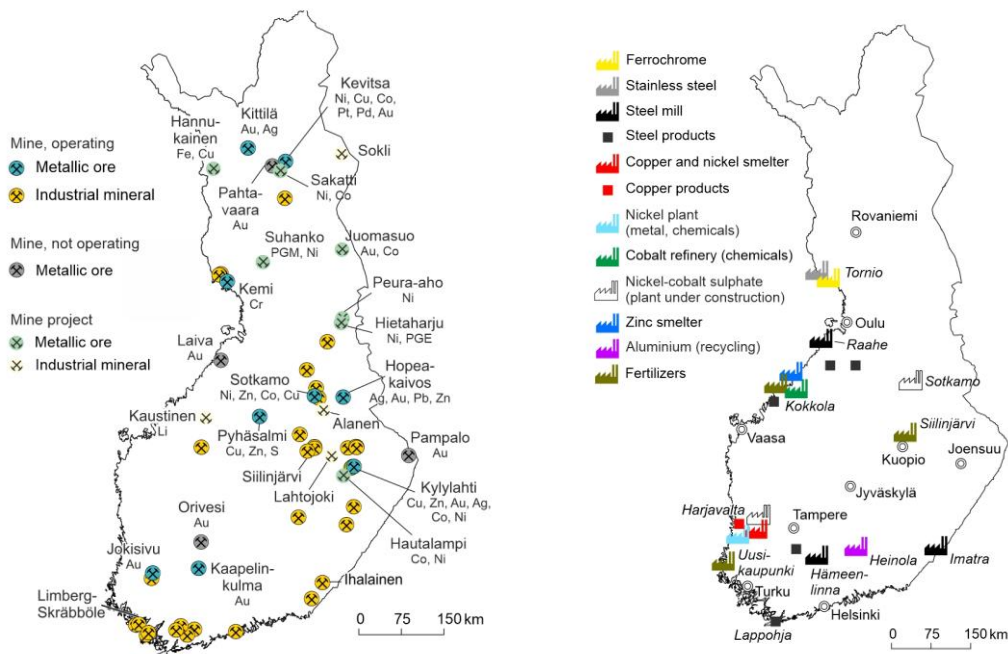


BloombergNEF, Sep 2020

# Mines, refining and smelting



**Au, Ag, Pt, Pd,  
Ni, Co, Li,  
Fe, Cu, Cr,  
Pb, Zn, S etc.**



Mines, refining and smelting capacity in Finland (Source: Geological Survey of Finland, 2020)



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# Must-Win Battles



Competitive business environment attracts major investments into the battery cluster



World-class research and competences in the chosen focus areas



Growth of export and international competitiveness



Active influence on the EU battery regulation and participation in the battery ecosystem



Finland as forerunner in responsible and sustainable battery production

# Strategic Objectives



<b>Battery Strategy 2025</b>	<b>1.</b>	<b>The Finnish Battery and Electrification Sector grows and renews itself.</b>
	<b>2.</b>	<b>Increase in investments in the Battery and Electrification Sector.</b>
	<b>3.</b>	<b>Members of the Battery and Electrification Sector work side by side to increase competitiveness.</b>
	<b>4.</b>	<b>The Finnish Battery and Electrification Sector is a well-known brand globally.</b>
	<b>5.</b>	<b>Responsibility is an essential part of the growth, renewal and brand of the Finnish Battery and Electrification Sector.</b>
	<b>6.</b>	<b>Finnish actors play key roles in the emerging value chains.</b>
	<b>7.</b>	<b>Digital solutions expand the skills and company base, and speed up the development of the Battery and Electrification Sector.</b>





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# Examples of Strategic Actions



Areas of Strategic Actions	Examples of practical actions
Enhancing <b>national cooperation</b>	To create a <b>national body</b> to encourage and foster and coordinate efficient cooperation.
Scaling up the <b>skills</b> of the Battery and Electrification cluster	To establish an international <b>doctoral school</b> focusing on topics relevant to the national cluster.
Expanding <b>EU and international cooperation</b>	To coordinate and ensure that Finnish experts and companies participate actively in <b>EU-level activities</b> .
Establishing an operating environment that attracts <b>investments</b> to Finland	To make the <b>permitting processes</b> more fluent and predictable (single point of contact, digitalization etc.)
Making Finland a forerunner in <b>sustainable and responsible</b> battery production	To analyse and demonstrate the <b>carbon footprint and carbon handprint</b> of the Finnish Battery and Electrification cluster.
Developing <b>the brand</b> of the Finnish Battery and Electrification sector	To organise conferences and other events, for instance, a side event at <b>Slush</b> , the no. 1 start-up event in Europe.
Developing <b>funding</b>	Increasing the <b>size of funding</b> for high-risk investments.



# The Conclusion

# The Opportunity



- **Never before in history have batteries played such a big role in business or in society in general.**
- **The transformation from oil and internal combustion engines to batteries and electrification requires huge amounts of critical raw materials.**
- **Finland can play an important role in this process, not only through mineral reserves and their processing, but also through innovative production technologies and processes.**
- **Good regulation and design of battery materials support circular economy growth and circularity of batteries.**



EURACTIV, 26 June 2020

# Final words



- The key findings of our national battery work can be summarized in three words: skills, responsibility and competitiveness.
- Battery value chain and electrification play a central role in reaching the climate and other environmental targets.
- In this process, it is vital to make sure that batteries are part of the solution, not part of the problem.
- The growth in batteries and electrification is one of the biggest opportunities for Finland that we have seen during the last few decades.
- The goal for the strategy is to show the way how we are able to become a globally remarkable player in batteries and electrification.
- We can reach the goal, but it became clear during the process that there is no time to waste.



*Photo: Finnish Minerals Group (FMG)*



**Thank you**