

**EUROPEAN COMMISSION**

HORIZON 2020 PROGRAMME - TOPIC H2020-LC-BAT-2020  
Sodium-Ion and sodium Metal Batteries for efficient and sustainable  
next-generation energy storage

GRANT AGREEMENT No. 963542



SIMBA – Deliverable Report

<< D1.3 – Supply chain analysis & materials sourcing for  
manufacturing >>

Deliverable No.	SIMBA D1.3	
Related WP	WP1	
Deliverable Title	Supply chain analysis & materials sourcing for manufacturing	
Deliverable Date	2022-12-18	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO)	
Written By	Yazid Lakhdar (UBham) & Tengfei Song (UBham)	2022-12-01
Checked by	Waleri Milde & Stephan Lux (FHG)	2022-12-08
Reviewed by (if applicable)	Jan Petter Maehlen (IFE)	2022-12-06
Approved by	Ralf Riedel (TUDa)	2022-12-23
Status	Final Draft	2022-12-23



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 963542.

## Publishable summary

The main goal of the SIMBA project is the development of high-performance, cost-effective, safe, and sustainable sodium-ion batteries (SIBs) and sodium solid-state batteries (Na-SSBs) for stationary energy storage applications. Many of the critical materials employed in lithium-ion batteries (LIBs) can be replaced in sodium-ion batteries (SIBs) with more sustainable materials that are less expensive and more abundant. First, the SIMBA project focuses on the development of low-cost and high energy electrode materials: Prussian White (PW) and P2/O3 layered oxides as cathodes on the one hand, and highly porous ceramics and Hard Carbon (HC) as anodes on the other hand. Furthermore, Na-SSBs will be enabled using safe single-ion conducting polymer electrolytes (SIPes).

Task T1.3 seeks to investigate and analyse the specifics of the manufacturing processes and materials supply chain for the SIMBA project. The present deliverable D1.3 titled “Supply chain analysis and materials sourcing for manufacturing” focuses on analysing the origin and criticality of the materials used in the SIMBA project, and on providing an overview of the materials supply chain based on data provided by the partners in the project. The supply chain data was provided by partners both via Excel spreadsheets and through the LEAFS platform, and then collated and analysed by UBham.

The origin of the raw materials used to produce the anode, cathode, and membrane electrolyte materials manufactured in SIMBA were identified and transportation flows were mapped out.

The criticality and strategic importance of the materials were highlighted, and potential supply risks were identified.

## 9 Appendix A- Acknowledgement

The author(s) would like to thank the partners in the project for their valuable comments on previous drafts and for performing the review.

Project partners:

#	Partner	Partner Full Name
1	TUDa	TECHNISCHE UNIVERSITAT DARMSTADT
2	UU	UPPSALA UNIVERSITET
3	UBham	THE UNIVERSITY OF BIRMINGHAM
4	WMG	THE UNIVERSITY OF WARWICK
5	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE
6	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
7	IFE	INSTITUTT FOR ENERGITEKNIKK
8	SAS	USTAV ANORGANICKEJ CHEMIE SLOVENSKA AKADEMIA VIED (Institute of Inorganic Chemistry, Slovak Academy of Sciences)
9	FHG	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.
10	JM	JOHNSON MATTHEY PLC
11	Elkem	ELKEM AS
12	YUN	YUNASKO-UKRAINE LLC
13	SAFT	SAFT
14	Altris	ALTRIS AB
15	Recupyl	TES RECUPYL SAS
	UNR	UNIRESEARCH BV

## Appendix D – Disclaimer/Acknowledgement



Copyright ©, all rights reserved. This document or any part thereof may not be made public or disclosed, copied or otherwise reproduced or used in any form or by any means, without prior permission in writing from the SIMBA Consortium. Neither the SIMBA Consortium nor any of its members, their officers, employees or agents shall be liable or responsible, in negligence or otherwise, for any loss, damage or expense whatever sustained by any person as a result of the use, in any manner or form, of any knowledge, information or data contained in this document, or due to any inaccuracy, omission or error therein contained.

All Intellectual Property Rights, know-how and information provided by and/or arising from this document, such as designs, documentation, as well as preparatory material in that regard, is and shall remain the exclusive property of the SIMBA Consortium and any of its members or its licensors. Nothing contained in this document shall give, or shall be construed as giving, any right, title, ownership, interest, license or any other right in or to any IP, know-how and information.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 963542. The information and views set out in this publication does not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions and bodies nor any person acting on their behalf, may be held responsible for the use which may be made of the information contained therein.