Siikalatva Graphite, the Raw Material of the Green Transition

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Euroopan unionin osarahoittama
POHJOIS-POHJANMAA COUNCIL OF OULU REGION
Siikalatva Suomen keskipisteessä
OULUN YLIOPISTO
GTK

Project duration: 05/2024 – 05/2026

In collaboration with:

- Geological Survey of Finland (GTK)
- University of Oulu (Mining School and Department of Civil Engineering)
- Municipality of Siikalatva

Project coordinator: Municipality of Siikalatva

The project is supported by the EU’s Just Transition Fund (JTF), whose specific objective in Finland is to halve the use of peat for energy production by 2030.

The fund also aims to support measures that compensate for the adverse effects of this objective and to promote the diversification of local industries.

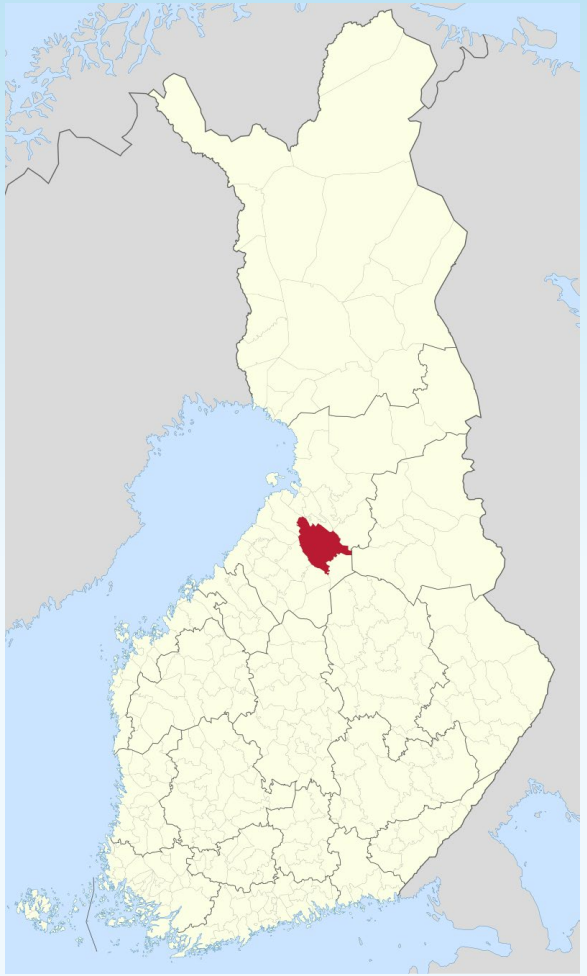
The funding is provided by the Council of Oulu Region.

EU Critical Raw Materials Act (CRMA)

- Entered into force on May 23, 2024
- Aims to secure access to raw materials critical for the economy and the green transition
- Emphasizes sustainability and the circular economy
- Natural graphite is classified as a critical and strategic mineral
- The EU seeks to increase self-sufficiency in graphite supply

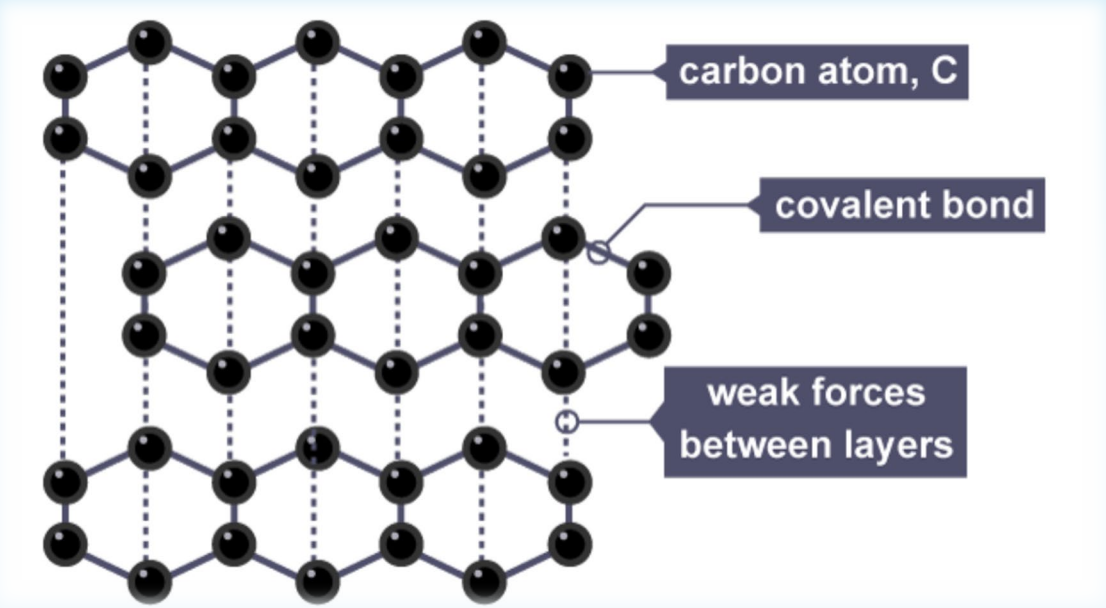
Regional Background – Siikalatva

- Siikalatva is among the regions most affected by the phase-out of peat production
- Few growth companies generating employment in the area
- Employment rate has declined:
  2022: 8.3% → 2023: 11.4%
- This project aims to support regional recovery by promoting the mining industry



Graphite

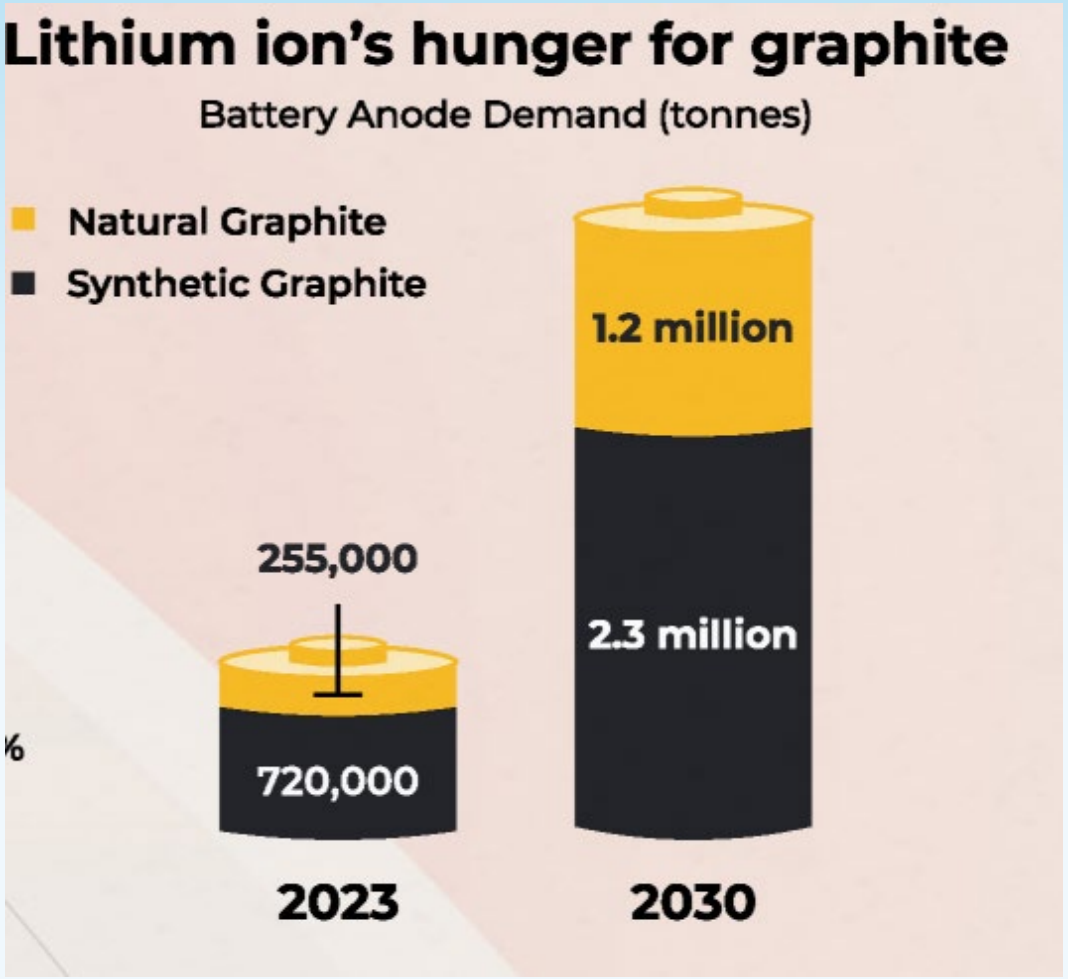
- A crystalline form of carbon, like diamond and graphene
- Graphene is a single layer of carbon atoms arranged in a hexagonal structure
- Graphite consists of stacked graphene layers
- Chemically inert, high melting point (~3600 °C), high thermal conductivity, high electrical conductivity, lubricating properties, …



Graphite studies at Siikalatva

- Layman samples of graphite in 1990s
- GTK drillings 1993
- GTK nation-wide graphite potential mapping 2020 – 2022
- Kupukan Grafiitti Oy 2021 ->
- GTK Vihanti-Pyhäsalmi –project

Graphite demand



Source: Benchmark Natural & Synthetic Graphite Forecasts

Source: Tokai Carbon

Graphite demand

Mihin?	Mitä?	Kuka?
hävittäjät	grafiitti, koboltti	Airbus
panssari-ajoneuvot	grafiitti	Rheinmetall
raketit	koboltti, litium	MBDA, KNDS, Diehl
sukellus-veneet	grafiitti, koboltti, litium	Thyssenkrupp Marine Systems
sotalaivat	grafiitti, koboltti, litium	Thyssenkrupp Marine Systems
tykit	grafiitti	Rheinmetall
ammukset	grafiitti	Rheinmetall, Diehl

Lähde: Saksalais-suomalainen kauppakamari, grafiikka: Nanna Särkkä / Yle

Source: Omega Graphite

Project in a nutshell:

- Geological background material assessment
- Graphite potential in Siikalatva using geophysical data
- Geochemical & mineralogical analyses, and beneficiation tests
- Feasibility of processing local graphite to battery-grade anode material and other uses
- Analysis of side rock and tailings for environmental risks and circular economy use
- Potential impacts and benefits of mining on local economy, environment, land use, and infrastructure
- Identify ways to support local industries and regional resilience

Project goals

The project’s results will be compiled in a final report to support decision-making related to graphite production and exploration in the region.

The aim is to provide useful insights for policymakers and increase exploration interest in the Siikalatva region.

The final report will be published in GTK Hakku service.

Thank you!

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