



# CRITICAL MINERALS STRATEGY IN FINLAND AND THE EU



**PEKKA SUOMELA**  
**Executive Officer,**  
**Finnish Mining Association**

Pekka Suomela was appointed Executive Officer of the Finnish Mining Association (FinnMin) in April 2012. Based in Helsinki, FinnMin is the national organization for the Finnish mining cluster, with members engaged in mineral exploration, mining, and mining equipment and technology. Previously, starting January 1, 2007, he worked for the Ministry of Employment and the Economy as the Chief Inspector of Mines. Mr. Suomela has extensive experience in mineral policy issues, with over 15 years of professional experience. He holds a Master of Law degree from the University of Helsinki, Finland, earned in 1989.





# SUPPLY-CHAIN RESILIENCE – RECENT RESEARCH FINDINGS

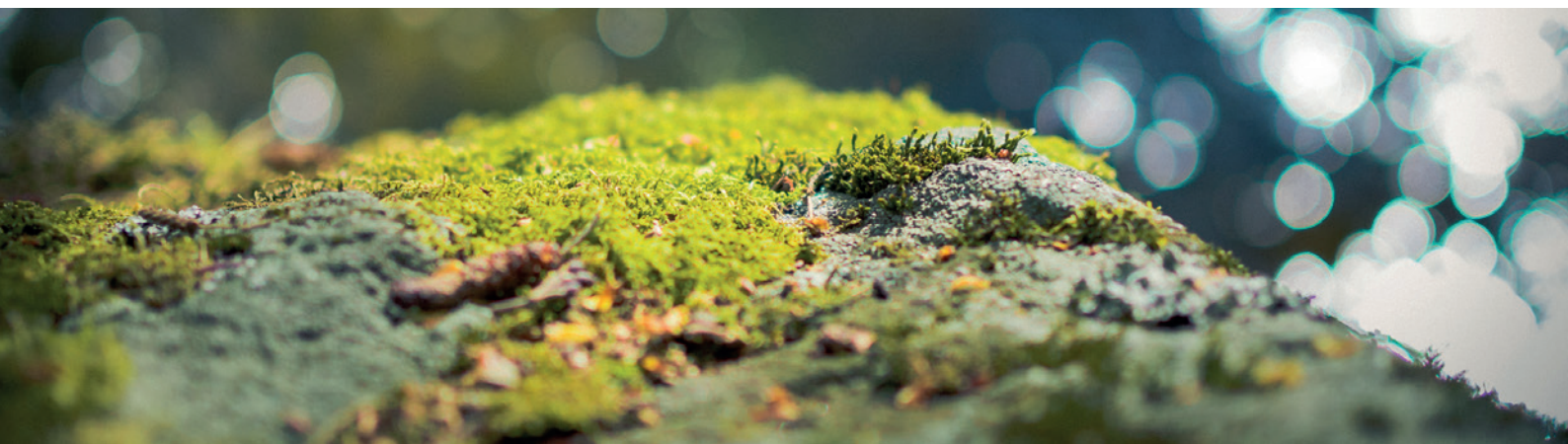


**VELI MATTI VIROLAINEN**

**Professor, LUT University**

The presentation explores the critical elements of building a resilient supply chain in the wake of major global disruptions, such as the COVID-19 pandemic and the Ukraine war. It identifies key disruption types, including trade disputes, economic crises, pandemics, and military conflicts, that significantly impact supply chains. The presentation examines conditions that cause supply chain vulnerabilities, such as demand variability, geographically concentrated production, and low or just-in-time inventory practices. To address these challenges, it highlights essential strategies for enhancing supply chain resilience: conducting stress tests, improving real-time visibility, being prepared for rapid response, and seeking synergies within supply chain strategies. Attendees will gain insights into mitigating risks and maintaining operational continuity in an increasingly unpredictable global environment.

*Veli Matti Virolainen has been Professor of Purchasing and Supply Management at LUT University Business School since 1998. His research interest focus on strategic supply management, risk management related to supply networks, supply chain resilience, financial s upply management, and business ecosystems.*





# ENSURING MINERAL SECURITY IN A DIGITAL SOCIETY



## **JUHA ILKKA**

**Chief Preparedness  
Specialist and Program  
Director, Digital Security 2030,  
National Emergency  
Supply Agency**

The current security situation challenges national cybersecurity and the security of supply. The international situation, conflicts, and cyber threats reflect on critical infrastructure protection and change the requirements for its protection. Digitalization and breakthrough technologies are developing businesses, but at the same time, they are expanding the attack surface for cybercriminals. How this affects the mining industry and what considerations are essential when managing cybersecurity.

*Juha Ilkka works at the National Emergency Supply Agency (NESAs), where he leads the Digital Security 2030 program. The purpose of this program is to develop society's tolerance for cyber disruptions. It focuses on improving digital security and provides funding of approximately EUR 130 million until the end of 2027. Juha has an extensive background in cybersecurity, with 20 years of experience. Prior to joining NESAs, he held positions at the National Cyber Security Center, the Prime Minister's office, and the defense administration.*







# NAVIGATING THE EFFECTS OF THE CRITICAL RAW MATERIAL ACT



## **TONI RÖNNBERG**

**Regional Director,  
EIT RawMaterials,  
Baltic Sea & North**

This presentation covers the Critical Raw Materials Act, which entered into force on May 23rd, 2024. It examines what the CRMA contains, the significance of its strategic projects, and their implications. Additionally, we will discuss the evolving skills demand for future talents and the initiatives EIT RawMaterials is undertaking in this area.

*Toni Rönnerberg brings 16 years of extensive experience in management, sales, and marketing positions within B2B companies, with a strong focus on sustainability. He holds a Master of Science degree from the Hanken School of Economics. Starting in January 2024, he assumed the role of Regional Director of Baltic Sea & North in the EIT RawMaterials.*



# CANADIAN CRITICAL MINERALS STRATEGY



H.E. **JEANETTE STOVEL**  
**Ambassador of  
Canada to Finland**

Mining does not operate in isolation but is very closely linked to geopolitics, security, and climate issues, on which Canada and Finland are very like-minded. Canada's Critical Minerals Strategy - released in 2022 with a 4 billion Canadian dollar budget over eight years - is designed to address the clean energy transition as a leader in the responsible, inclusive, and sustainable production of critical minerals and resilient value chains.

Critical minerals are the building blocks for the green and digital economy. They are used in a wide range of essential products, from mobile phones to solar panels, electric vehicle batteries to medical and healthcare devices, to military and national defence applications. Without critical minerals, there can be no green energy transition. By investing in critical minerals today, we are building a sustainable industrial base to support emission-reducing supply chains that will address climate change for generations to come.

As the demand for critical minerals is forecast to skyrocket in the years ahead, it represents a generational opportunity for countries like Canada and Finland. Canada is endowed

with enormous mineral resource wealth, already producing more than 60 minerals and metals in almost 200 mines, and has hundreds of projects under development and at the exploration stage. Canada is a leading global producer of many of the critical minerals.

The Canadian Critical Minerals Strategy is Canada's whole-of-government approach to critical mineral development that is collaborative, forward-looking, iterative, adaptive, and long-term. It is tied to the active participation of Indigenous peoples, achieved by integrating diverse Indigenous perspectives through ongoing engagement, collaboration, and benefits-sharing. The Strategy also emphasizes the conservation and protection of Canada's natural environment.

*Jeanette Stovel (BA Hons [East Asian Studies], McGill University, 1986; Executive MBA, Warsaw School of Economics and University of Calgary, 2001) worked for 15 years in multilateral and non-governmental organizations in Canada and Poland and throughout the former Yugoslavia before joining Foreign Affairs and International Trade Canada in 2006. During her time at Headquarters, she has served as deputy director of peace operations policy for the Stabilization and Reconstruction Task Force (2008 to 2009) and deputy director for the Middle East in the Peace and Stabilization Operations Program (2016 to 2019). Her positions overseas have included political counsellor in Poland, where she was concurrently the most senior Canadian diplomat accredited to Belarus; chargé d'affaires en pied in Lithuania, with responsibility for Latvia and Estonia; and, most recently, high commissioner in Brunei (2019 to 2022). Jeanette and her husband Michael McGinn have five children.*



# LITHIUM IN LATIN AMERICA: BOLIVIA'S APPROACH



## **AMERICA QUINTEROS CONDORETTY**

**Junior Researcher,  
LUT Business School**

This presentation explores the strategic importance of lithium within the framework of renewable energy and electric vehicles, emphasising Bolivia's distinctive position in the Lithium Triangle of Latin America, which includes Argentina and Chile. This region harbours the world's most significant lithium reserves, essential for the global shift towards cleaner energy solutions.

Bolivia stands out with an estimated 23 million tonnes of lithium resources and a unique state-controlled mining model. Unlike its neighbours, Bolivia restricts foreign investment to the industrialisation stage, maintaining full state control over mining operations. A comparative analysis of Bolivia's approach against the more public-private partnerships seen in Argentina and Chile is presented. The discussion explores the successes and challenges encountered by Bolivia's lithium project through empirical qualitative research, including semi-structured interviews with various stakeholders.



The current status and future prospects of lithium mining in Bolivia are examined, highlighting the regulatory framework of a state-controlled mining strategy. Special emphasis is placed on the implications of Bolivia's approach, considering its potential benefits, challenges and limitations in the context of global energy transitions and geopolitical dynamics.

*America Quinteros Condorety is a junior researcher in the Business School at LUT University. Her research interests are focused on the lithium industry, energy transition processes, the lithium-ion battery industry, sustainable mobility, the circular economy, and strategic decision-making. She investigates the circularity of the lithium industry for batteries of electric vehicles, by exploring the key dynamics, barriers, and challenges.*

*She is a member of the SCI-MAT (Sustainable Circularity of Inorganic Materials) Platform at LUT University and is currently involved in two EU projects: RELIEF (Recycling of Lithium from Secondary Raw Materials and Further) and REINFORCE (Standardised, Automated, Safe and Cost-Efficient Processing of End-of-Life Batteries for Second and Third Life Reuse and Recycling), as well as in one Academy of Finland project: Action4Commons (Collective stakeholder action for commons: Integrating business-stakeholder value creation with polycentric governance).*





# CRITICAL MINERALS SUSTAINABLE PRODUCTION IN CHILE: A WINDOW OF OPPORTUNITY TO DRIVE A TRANSITION TOWARDS A SMART, GREEN AND INCLUSIVE ECONOMY



Dr. **OSVALDO URZÚA**  
**Karungen**

Throughout history, mining has been a fundamental sector for the development of societies, providing essential materials for a wide variety of uses and sectors, such as construction and infrastructure, energy, manufacturing, electronics, and agriculture, among others. Today, the role of minerals is once again crucial, as they are indispensable components for the energy transition and the development of critical technologies.

Besides, mining has been a driver of economic development in countries with a strong mining tradition and significant geological potential, such as Australia, Canada, and Norway. In these countries, the mining sector has not only attracted significant investments and been a crucial source of exports but has also played a fundamental role in transforming these economies. This has been achieved by creating competitive advantages based on fostering technological and innovation capacities, essential for mining competitiveness, diversification of the economy, quality employment generation, and expanding alternatives to add value at local level.

The experience, productive tradition, and abundant mineral resources in various LATAM countries represent a unique opportunity to simultaneously address the two mutually reinforcing roles described above: i) Mining countries in LATAM can be a significant and reliable source of essential minerals for the energy transition and technological change; and ii) Active participation in the development of more sustainable mining can drive capacity building for long-term growth and economic diversification of mining economies in LATAM.

The Chilean experience is an example of how to simultaneously address both roles. Over the past four decades, Chile has consolidated itself as a productive mining powerhouse, mainly copper (Chile is the world's leading producer) and lithium (Chile is the world's second-largest producer). The country has leveraged production expansion to build greater technological capacities, advancing the development of a mining cluster fully integrated into global value chains and supported by a basis of mining services and technology providers that export to the region and the world.

However, the country cannot yet be considered an advanced economy, and the process sophistication of the economy still presents gaps compared to advanced mining economies. Closing these gaps is a requirement for sustainability itself. The growing demand for minerals, driven by the energy transition and technological change, which must be produced more sustainably, creates an opportunity to advance technological learning and innovation to close the gaps that separate Chile from advanced economies.

Strategic alliances with advanced economies and a multilateral approach are required to reconcile the interests of these economies (stable access to critical minerals at the lowest possible price and produced sustainably) with the interests of a developing mining economy like Chile (transformation towards a more diverse and advanced economy and producing sustainably minerals to be exported at the highest possible price).

These alliances should drive the generation of a long-term strategic investment plan to produce minerals more sustainably, along with a plan to enhance productive capacities and technological capabilities as enablers. The Chilean experience informs the design and implementation of a sustainable mining-based strategy that can be replicated in other countries in the region.



*Oswaldo Urzúa is an expert in open innovation systems, local supplier growth, public affairs, and stakeholder engagement in the mining sector. He holds a PhD in Science and Technology Policy from the University of Sussex, an MBA from ESADE, and a degree in Industrial Engineering from the University of Chile. Currently an independent consultant, he advises top mining companies and aids in mining policy development in Latin America and Asia.*

*Oswaldo's previous experience includes over a decade at BHP in roles such as Head of Government Relations for BHP America and Head of Corporate Affairs for Minera Escondida. He led initiatives like BHP's Social Value strategy and the World-Class Supplier Programme. He has also worked with the Chilean National Superintendence of Energy and the Innovative Development Institute. Oswaldo serves on the boards of CESCO and ENAMI, and remains engaged with academic institutions in Chile.*

