Natural Resources: Mining and Processing of Critical Materials
## Agenda

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<td>Oleksandr (Sasha) Kravchenko: <em>Managing Partner McKinsey &amp; Company, Kyiv Office</em></td>
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<td>Prashant Chintawar, <em>CEO, Volt Resources</em></td>
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<td>Roman Opimakh, <em>Director General, Ukrainian Geological Survey</em></td>
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Rt Hon Nusrat Ghani MP

Minster of State, Minister for Industry and Economic Security
Department for Business & Trade
Ukraine's Critical Minerals: Business Opportunities for a United Europe

Roman Opimakh
Managing Director, Ukrainian Geological Survey
Ministry of Environmental Protection and Natural Resources of Ukraine
Ukraine shares the strategic goals of the EU for mining, refining and recycling of critical raw materials

Global top-10 producing countries

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<td>Ti</td>
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<td>Titanium</td>
<td>Graphite</td>
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<td>Mn</td>
<td>Zr</td>
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<td>Manganese</td>
<td>Zirconium</td>
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Proven Reserves

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<td>Li</td>
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<td>Lithium</td>
<td>Beryllium</td>
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<td>Rare Earth</td>
<td>Ni</td>
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<td>Nickel</td>
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Ukraine proposes a wide range of mining investment opportunities

100 projects of mainly ten critical raw materials* could be developed to bridge the current mining gap in Europe

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<th>Greenfield</th>
<th>Brownfield</th>
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<tr>
<td>Licensed</td>
<td>28</td>
<td>10</td>
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<tr>
<td>Unlicensed</td>
<td>50+</td>
<td>21</td>
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- Dobra hard-rock lithium deposit (4220 acres) – 50 year license available
- Stremyhorodske is one of largest titanium deposits globally – 50 year license available
- Novopoltavske is the largest phosphate & rare earth deposit globally – $300 mln investment needed

* main mineral: Ilmenite, Rutile, Zircon, Lithium, Graphite, Nickel, Beryllium, Rare Earth Elements, Polymetallic, Zinc
The full value chain realization of the 10 largest projects require the construction of mines, quarries and around 20 new processing factories.

Total cost: $15 billion
The discovered reserves of lithium and graphite will produce cathode and anode materials for Li-batteries with total capacity of 1000 GW/h to support the manufacture of about 20 millions of Electric Vehicles\(^1\)

End Market:
- Electric Vehicles
- Energy storages
- Electronic devices

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1. Capacity 60 kW/h
2. LFP, graphite share – 29%, lithium – 13%
The discovered reserves of Ukraine is equal to 15 years of production of titanium globally.

- Mining
  - Llmenite
  - Rutile
  - Zircon
- Refining
- Processing
- Industrial goods manufactory

End Market:
- Household products (paper, paints, etc)
- Aerospace, military industry, e-devices, medicine
- Nuclear fuel, ceramics

Explore mines

Produce metals, powders

62 mln t pigment or
37.2 mln t Ti metal
1.2 mln t Zr metal

The discovered reserves of Ukraine is equal to 15 years of production of titanium globally.
Combined apatite and rare earth deposits could produce 100 million tons of phosphate fertilizers to satisfy 30 years of consumption for Ukraine’s agriculture industry.

End Market:
- Agricultural, chemistry industry
- Aerospace, military industry, E devices

Mining
- Apatite
- Beryllium
- Rare earths

Explore mines

Refining
- Processing
- Industrial goods manufactory

Process

produce

metals,
powders

48 mln t
phosphorus oxide

5 thsd t / 2 mln t
Be metal / Tr₂O₃
Ukraine declared Open Door Policy to attract strategic investors

A policy aimed to make foreign direct investment simple, transparent and financially attractive

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<th>Type</th>
<th>Description</th>
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<td>Concession</td>
<td>Easy way to obtain E&amp;P license for up to 20 years through e-auctions</td>
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<td>PSA</td>
<td>Agreement with the Government for up to 50 years with fiscal stability and international arbitration clauses</td>
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<tr>
<td>Farm-in</td>
<td>Partnerships with existing license operators to increase extraction and up stream production</td>
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Ukraine’s business regulation has been reformed to make the country an attractive place of investment

**Ukraine’s One-Stop-Shop for obtaining mining permits:**

- The ability to bid for concession licenses through online auctions
- Online access to legacy geo-data that can be used to support complex investment decision making; aligned to UNFC standards
- Direct communication with project-operators through e-cabinet to understand and develop partnerships on the ground
“The greatest opportunity in Europe since World War II”

VOLODYMYR ZELENSKYY
THE PRESIDENT OF UKRAINE

https://advantageukraine.com/
Appendix
Unlicensed mining opportunities

Dobra hard-rock lithium deposit was discovered in 1989, containing inferred resources of spodumene and petalite ore of ___ Mt with oxide @___% Li2O, and coproducts of various critical minerals, such as tantalum, niobium, rubidium, cesium, beryllium, tin, and gold. The area of 1707 ha is located in the Kirovograd region and is able to be licensed up to 50 years under the production sharing agreement. The initial investment in mine is estimated at $150–200 mln.

Stremyhorodske hard-rock ilmenite deposit is one of the largest titanium deposits in the world (similar to Tellnes and Lac Tio), discovered in 1954 with further exploration in 1970–80s, containing proved reserves of ilmenite-phosphate ore of ___ Mt with ___% phosphate concentration (___ Mt P2O5), and coproducts of scandium, vanadium ores. The area of 225 ha is located in the Zhytomyr region and is able to be licensed up to 50 years under the production sharing agreement. The initial investment in mine is estimated at $250–400 mln.

Novopoltavske phosphate and rare earth deposit is a large phosphate ore deposits in the world, discovered in 1970, containing proved reserves of phosphate ore of ___ Mt with ___% oxide concentration (___ Mt P2O5), and coproducts of rare earth elements with proven reserves of ___ Mt TR203, tantalum, niobium, strontium, magnetite, uranium. The area of 938 ha is located in the Zaporizhzhia region. The initial investment in mine is estimated at $250–350 mln.
Licensed mining opportunities

Brownfields

**The United Mining and Chemical Company** is a state-owned enterprise with decades worth of experience in mining titanium mineral sands in its open pit mines and producing ilmenite, rutile and zircon concentrates. UMCC Titanium’s mining and processing facilities are located in the Dnipropetrovsk and Zhytomyr regions with total reserves of ilmenite of 3,9 Mt @53–63% TiO2, rutile of 0,209 Mt @95% TiO2, and zircon of 0,106 Mt @65%. The area of three licensed deposits is 8 350 ha. At present, UMCC Titanium is officially under the privatization process and open to investors for acquisition (www.privatization.gov.ua/en/product/at-ob-yednana-girnycho-himichna-kompaniya/). The investment to develop new deposits, establish titanium slag and pigment production facilities is estimated at $500–600 mln.

**Zavalievsky natural graphite mine and processing facilities** is a long-life multi-decade producing graphite open pit with one of the Europe’s largest graphite reserves, containing of 22,9 Mt with @6.8% carbon. The area of 636 ha is located in the Kirovohrad region and is under operation of the Australian public company Volt Resources (www.voltresources.com). The investment to construct a coated spherical purified graphite facilities for 45k tpa is estimated at $300 mln.

**Beregovo polymetallic deposit** contains 30 Mt resource and 4,6 Mt reserves of polymetallic ore with Au, Ag, Pb, Zn. The area is located in the Zakarpattia region and is managed by Avellana gold ltd (www.avellanagold.com), producing Pb-Au gravity concentrate with 45% of lead, and testing Zn 55% concentrate. The Initial investment in mine to add production of 120 kta is estimated at $6 mln.
Licensed mining opportunities

Greenfields

**Polokhivske hard-rock lithium deposit** was discovered in 1988, containing indicated and inferred resources of pegmatite ore of __ Mt. The area of 20.5 ha is located in the Kirovograd region and is under operation of Ukrainian company Ukrlithiummining LLC (www.ukrlithium.com). Upstream investment capital expenditure to construct mine and petalite concentrator is estimated at $250–300 mln. The production target is around 300 ktpa of petalite concentrate, which would qualify as both technical and battery grade. The downstream component is also under consideration.

**Perzhanske beryllium deposit** is one of the largest beryllium ore deposit in the world, discovered in 1962–1977, containing proved reserves of beryllium of 2,3 Mt with @0,53% of oxide (5000 t metallic beryllium), and coproducts of rare earth elements, zinc, tantalum, niobium, zirconium, silver. The area of 333 ha is located in the Zhytomyr region and is under operation of Ukrainian company BGV Group, (www.bgv.com.ua). The initial investment is estimated at $300 mln.

**Balakhivske graphite deposit** was discovered in 1970s, containing proved reserves of natural graphite of 44 Mt with @6,2% of carbon content. The area of 71 ha is located in the Kirovohrad region and is under operation of Ukrainian company BGV Group, (www.bgv.com.ua). The investment to construct a coated spherical purified graphite facilities with capacity of 100kta is estimated at $250 mln.

**Prutivske nickel deposit** was discovered in 1994, contains 40.23 Mt of nickel, copper and cobalt ore resources with a content of 0.42%, 0.18%, and 0.02% respectively. The area of 1,500 ha is located in the Zhytomyr region and is managed by the Ukrainian company Colorful Metals (www.prutivka.com). Investment in mine construction and beneficiation plan is estimated at $200 mln.
Prashant Chintawar
CEO, Zavalievsky Graphite LLC
(a Volt Resources Limited Company)

ASX: VRC
FRA: R8L
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Competent Person statement
The information in this announcement which relates to exploration results is based upon details compiled from the available documentation by Mrs Christine Standing, who is a Member of the of the Australian Institute of Geoscientists. Mrs Christine Standing is an employee of Optiro Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and the deposit under consideration, and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Mrs Christine Standing confirms that the information included in this announcement in respect of the mineralisation at Jadar North, Ljig and Petlovaca is an accurate representation of the available data and studies.

Where information in this presentation relates to exploration results, mineral resources, ore reserves, production targets or forecast financial information that has previously been disclosed to the ASX, reference is made to the applicable ASX announcements where such information was first disclosed. Volt confirms that it is not aware of any new information or data that materially affects the information included in those announcements.
Our Strategy

Capitalize on the opportunities presented by the implementation of the Inflation Reduction Act in the United States/North America and the EU Critical Raw Material Act in Europe

Use two high-quality graphite assets to become an “integrated” natural graphite anode producer – a critical material used in lithium-ion batteries

- **Zavalievsky Graphite LLC (ZG)** is the only significant operational graphite mine and processing plant in the European catchment area
- **Bunyu graphite project in Tanzania** is one of the world’s biggest undeveloped greenfield natural graphite projects

Provide highest purity (long life) and one of the lowest carbon supply chain solutions for a critical raw material

A localized & de-risked supply chain solution
Our Global Graphite Footprint

Integrated producer of natural graphite and graphite anode
ZG is a proven graphite producer with a mine in operation since 1934

- Significant fraction is fine mesh suitable for lithium-ion batteries.
- Flotation + Concentration + Purification done at mine
- Permits for subsoil use (mining license equivalent) valid until November 2035.
- Makes graphite products across the range and potential to significantly increase high value, large flake production.
- Excellent transport infrastructure covering road, rail, river and sea freight combined with reliable grid power.

- Resources: 22.9 million ton at a grade of 6.8% carbon – subset of overall deposit based on south-east zone only¹ (Non-JORC and approximately 20% of Russian code resources)
- Production: average 7,300 TPA graphite concentrate from 2017 to 2021. 1980s – 60 KTPA
- Upcoming Milestones: Become a supplier to lithium-ion battery cell makers based in Europe and North America
European Institute of Innovation & Technology (EIT) has formally recognised Zavalievsky Graphite as a strategic asset.
Volt Resources and Zavalievsky Graphite Strategy

- Volt Resources Ltd and its Ukraine subsidiary, Zavalievsky Graphite LLC, have developed a three-stage corporate development plan for the Zavalievsky natural graphite mine and processing facility.

- Volt’s vision is to transform ZG into a competitive, modern, ESG compliant, digitalized, continuously improving business.

- ZG can offer the EU and UK one of the lowest carbon supply chain solutions within trucking distance.

- ZG’s key objective is to provide a resilient, localised supply chain solution for the emerging European and UK green economy to meet the demand for natural graphite and high performance Coated Spheronised Purified (Natural) Graphite (CSPG) Anode material.
Contact

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Volt Resources Limited [ASX:VRC]
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Serhii Voytsekhovskiyi

Board Member, BGV
Green Field Sites Available
BGV Group Management was established in 2015 to create innovative, advanced, highly effective, and unique business-oriented products with high added value. We invest in assets included in the list of critical raw materials which are essential to human progress.

The company's investor Hennadii Butkevych built a large business with a turnover of more than $5 billion annually.

BGV Group Management and its founder have invested more than $100 million in mining projects to date.

Projects we develop are conducted according to international standards and modern eco-friendly technologies.
Our Products

BGV Graphite

BGV Beryllium & Rare Earth Elements

BGV Granite

BGV Oil & Gas

BGV Uranium

BGV Zirconium
Balakhivka Graphite Deposit

44M tons
the ore reserves of the license area to a depth of 150M

185M tons
the reserves of the entire deposit

500M tons
forecast resources

6.27% carbon content

- Project location is in an industrial agglomeration
- Highly qualified personnel experienced in mining and processing
- Region with a well-developed infrastructure and good logistic options including railway
BGV SPG for Li-Ion Batteries

- SPG sample achieved remarkable reversible capacities (RC) of > 365 mAh/g, which is very close to the theoretical maximum of 372 mAh/g.
- CCCV cycling (constant current, constant voltage) shows good cyclability of graphite sample at 0.5C current rate.
- After 100 cycles, the graphite sample BGV CB3 yields a value of 363.5 mAh/g (99.4% of initial capacity), which is better than the average value typical uncoated spherical graphite products.

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<th>SPG BGV CB3c</th>
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<tr>
<td>SiO₂</td>
<td>[ppm]</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>[ppm]</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>[ppm]</td>
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<tr>
<td>Fixed carbon</td>
<td>[wt.-%]</td>
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According to the expert opinion of Dorfner ANZAPLAN:
BGV graphite is clearly a favorable material for utilization as active material in lithium-ion batteries (electric vehicles, energy storages etc.)
Balakhivka Project Timeline & Partners

2020–2022
Several verification drilling campaigns
Reserves approval under NI43-101
PEA and PFS accomplishment
Successful technological tests for end products

2022–2023
Completion of pilot tests,
Design development for the production complex

2024
Start of construction of the production complex:
graphite concentrate and SPG

2025
Completion of construction and start-up of the first phase of 50K t production capacity

2026
Reaching the design capacity of 100K t and considering the possibilities of expanding the product portfolio
Perzhanske Beryllium Ore Deposit

- **2.34M tons** the ore reserves
- **5.5K tons** of beryllium in terms of metal
- **13.9K tons** the reserves of BeO
- **39.2 tons** of zinc will be extracted along the way in addition
- **0.53%** cut-off grade of BeO

- The Perzhanske beryllium deposit is located in the Zhytomyr region. Exploration of the Perzhanske beryllium deposit was carried out in 1962–1977. To calculate the reserves, 236,500 m of wells were drilled and 7104 meters of underground working mines were drilled on two horizons.

- The ore is mainly (95%) represented by Genthelvin Zn4 (BeSiO4) 3, about 5% phenakite ores Be2 (SiO4). Together with the predicted resources, the productivity of the Perzhansk ore field is estimated at 37,000 tons of BeO.

- There is the possibility of associated extraction of zinc, silver, tantalum.
Current Project Status

1. In 2020-2021, 35 new wells were drilled with coring for verification of the results from the 60’ and 70’ when the deposit was discovered and fully explored.

2. Geochemical analyses of over 3,500 samples were performed for the content of beryllium and other crucial elements, including rare earth (Bureau Veritas, Canada).

3. The mineralogical study of the ore analysis was performed (SGS, Canada).

4. Ore enrichment and metallurgical studies are in progress (SGS, Canada).

5. A new estimate of the deposit’s resources in the Jork standard is in progress (SRK Consulting, USA).

6. Design works for the construction of the mine are in progress.

7. Preparation of PFS is planned to start in 2023.

Additional rare earth metals identified

- Y: 38%
- Ce: 21%
- Pr: 2%
- La: 11%
- Nd: 8%
- Sm: 2%
- Tb: 1%
- Er: 4%
- Tm: 1%
- Yb: 4%
- Ho: 1%
- Lu: 1%
- Gd: 3%
- Tb: 1%
- Dy: 5%
- E...
We are Looking for Partners to Cooperate

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Yegor Perelygin

United Mining Chemical Company (UMCC)
National Producer Titanium
UMCC General Profile

United Mining & Chemical Company Profile

- Main activity – mining of mineral sands and production of titanium mineral concentrates
- Location – Kyiv, Kyiv region
- Number of Employees in the HQ – 90+

Vilnohirsk Mining & Metallurgical Plant

- Main activity – mining of mineral sands and production of rutile, ilmenite, zircon concentrates
- Location – Dnipropetrovsk region
- License (permit) – until 2043
- Number of Employees – 3,900

Irshansk Mining & Processing Plant

- Main activity – mining of ilmenite sands and production of ilmenite concentrate
- Location – Zhytomyr region
- License (permit) – until 2035
- Number of Employees – 1,800

The United Mining & Chemical Company is a state-owned company (State Property Fund of Ukraine)
• The aggressive and unjust war launched by Russia against Ukraine had a profound impact on every industry in Ukraine. Some of the hardest-hit sectors were mining, processing and refining - both physically and economically (logistics and energy prices dramatically rising). Titanium mineral concentrates have always been a staple of Ukrainian exports, and UMCC has always exported more than 90% of its production abroad.

• Unfortunately, due to several geopolitical and strategic reasons – Ukraine was turned into a pure concentrate producer (feedstock) over the last 30 years. Ukraine’s former prowess in producing Titanium Slag, Titanium Sponge and TiO2 pigments has almost been lost. As things are becoming evident right now, the main beneficiary of the collapse of the Ukrainian titanium industry was Russia.
In 2021, Ukraine held 5% of global ilmenite concentrate production and 15% of global rutile concentrate production.

**From 2018 until 2021, Ukraine exported more than 0.5 million tons of ilmenite and rutile concentrates annually.**

Ukraine was a capable global player. The capabilities are still there, the opportunities are still there.
Vilnohirsk Branch (Vilnohirsk Mining & Metallurgical Plant)

Total Balance Reserves in thousand tons

- Zircon 106.5
- Rutile 209.3
- Ilmenite 560
- Kyanite-Sillimanite 210.3
- Staurolite 184.3

Official balance ore reserves +/- 21 million m³

Current balance reserves, thousand m³

- Inter-ore zone: 2112.4
- Private plots: 3300
- South: 7000
- North: 1300

Realistic balance ore reserves +/- 13 million m³

Current Life of Mine: 3-4 years

Life of Mine with Blocks 7-10: 6-7 years

Blocks 7-10 (+/- 8 million m³) have been covered by certain amounts of overburden (a mistake made 15-25 years ago).

Tailings Processing (+48,000 tons collective concentrate per year):
- Phase 1 in 2023-2024 with $0.9-1.0 million CAPEX;
- Phase 2 requires a Feasibility Study to be completed, Technical plans and Project documentation;
- Capital Construction;
- Dragflow and other equipment.
Minimum CAPEX $11.5 million

To develop blocks 7-10, the following documentation, research and evaluation will be needed:
- Hydrogeological exploration;
- Feasibility Study; Mi
- Borehole drilling;
- Technical Project and Documentation.
Minimum CAPEX $8.934 million

Private land plots:
- Purchase of private lands;
- Transfer of the gas pipeline.
Minimum CAPEX $0.956 million

Minimum CAPEX $11.5 million

Life of Mine with Blocks 7-10: 6-7 years
UMCC has acquired the license for the Selishchanskaya ilmenite sands deposit in 2021. The deposit is estimated to have reserves of 30+ million m³, but requires drilling and exploration works (as well as a Feasibility Study, even under local standards or in-house). It is estimated that the minimum CAPEX required for the Selishchanskaya deposit is $34.9 million and that local scoping study/analysis suggests the deposit to be economically feasible. At the same time, work is being undertaken to acquire another deposit license 3.5 kilometers from the Irshansk Branch.
Going Up the Titanium Value Chain

Price

Currently, Ukraine is only able to produce concentrates, but has the technology, expertise and human resources to produce Titanium Slag, TiO2 pigment and Titanium Sponge (massive CAPEX and large-scale private investors & operators are needed). Ukraine can easily become Europe’s key titanium hub regarding supply and R&D.

UMCC Titanium is an ideal platform for securing future long-term feedstock supply to North American and European clients, and an ideal foundation for future Titanium Slag and TiO2 pigment production.

Concentrates
(margin of $50-70 per t)

Titanium Slag
(margin of $150-200 per t)

TiO2
(margin of $450-650 per t)

Titanium Sponge
(margin of $3000-4000 per t)

Metallic Titanium

95% of the global titanium feedstock is processed into TiO2 pigment

Only 5% of the global titanium feedstock is processed into metal

Margin
UMCC’s Future

**Resource Management & Expansion**

+ Acquire new licenses (permits) from other state-owned entities. Currently one acquisition target is in the works (Zhytomyr region). Conduct a quick launch of mining operations.

+ Complete the necessary works for Blocks 7-10 to extend the Life of Mine at the Vilnohirsk Branch.

  + Launch the required Selishchanskaya ilmenite sands deposit drilling and exploration works.

  + Acquire other interesting assets that will assure the extension of LoM at the Vilnohirsk Branch (Dnepropetrovsk region).

**Transition Projects**

+ Conduct Feasibility Studies for new deposits, both greenfield and brownfield (preferably – JORC).

  + Finalize and launch the tailings processing project at full capacity.

  + Prepare Feasibility Studies for Titanium Slag and TiO2 Pigment production projects.

  + Launch mining operations at Selishchanskaya deposit.

**Value Chain Expansion Projects**

+ Launch new mining and concentrate production at Dnepropetrovsk region.

  Estimated CAPEX: $350-400 million

+ Launch Potential Titanium Slag Production Project (CAPEX estimate is calculated at $4000-6000 per ton produced annually).

  Estimated CAPEX: $150-175 million for 30,000 tpa

+ Launch Potential TiO2 Pigment Production Project (CAPEX estimate is calculated at $6000-7000 per ton produced annually).

  Estimated CAPEX: $325-350 million for 50,000 tpa

**CAPEX:**

- $35 million
- $5 million for 10MWh
- $5 million for 10MWh
Denis Alyoshin

Ukrliithiyvydobuvannya (ULM)
Green Field Sites Available
A large petalite lithium resource situated in Ukraine, containing up to 75 million tons of lithium resource according to a JORC report completed by AMC Consultants (UK).

Close proximity to European markets, ideally-positioned to capitalize on the rapid expansion in lithium battery cell manufacturing and rising demand for raw material in Europe.

Battery cell production in Europe will increase by over tenfold from about 124GWH in 2022 to 1.7TWh by 2030, or roughly 1.4 million tons LCE of raw materials required.

A seasoned project management team with 80+ years of lithium experience and strong global track record of taking early-stage project developments through construction into production.

Large resource affords opportunity to not only produce a mined concentrate, but also a downstream lithium chemical product.

Preliminary Feasibility Study work underway, lead by world class development team and technical consultants – upstream/downstream study to be completed in 2023.

ULM is a member of the European Raw Material Alliance (ERMA) and European Battery Alliance (EBA).
Significant Shortfall in European Lithium Supply

- According to Fastmarkets, in 2032, Europe will represent 25% of lithium demand, but will contribute only 4% of global lithium supply.

- This highlights the need for end users to secure regional supply of raw materials, given the current focus on shortening supply chain distances.
Overview

Project Highlights

- Ukrlithiummining LLC (ULM) is the owner of production license for Polokhivske lithium deposit
- 75 million tons lithium resource (JORC compliant report – completed 2021)
- PFS for upstream mining and petalite concentrate operations to be completed in October 2023
- PFS for downstream lithium chemical conversion operations to be completed by end 2023
- DFS for upstream and downstream operations to be completed 2024
## Anticipated Technical Parameters and Production Metrics

### Upstream (Mine & Concentrator)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource base</td>
<td>75 mln tons</td>
</tr>
<tr>
<td>Recovery</td>
<td>55%</td>
</tr>
<tr>
<td>Lithium grade in petalite concentrate</td>
<td>3.4%</td>
</tr>
<tr>
<td>Concentrate yield</td>
<td>20.5%</td>
</tr>
<tr>
<td>Ore throughput</td>
<td>1.5mn tpa</td>
</tr>
<tr>
<td>Petalite concentrate production</td>
<td>~ 300,000 tpa</td>
</tr>
</tbody>
</table>

### Downstream (Lithium Chemical Plant)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petalite concentrate production</td>
<td>~ 300,000 tpa</td>
</tr>
<tr>
<td>Conversion factor</td>
<td>15</td>
</tr>
<tr>
<td>Lithium carbonate production</td>
<td>~ 20,000 tpa</td>
</tr>
</tbody>
</table>
World Class Development Team

GALAXY

Allkem

Metso:Outotec

AMC consultants

ANZAPLAN dorfner group

Knight Piésold Consulting
Mikhail Heichenko, PhD General Director/Chief Geologist

Mykhailo specialization is geo-chemistry and engineering, he received his PhD in 2016.

25+ years of practical geological experience in both State and private enterprises, he also has authored 70+ scientific papers.

Mykhaylo has joined the project in 2019.

Denis Alosyn Chief Strategy Officer

Denis has more than 15 years’ experience in financial and investment banking fields, having raised more than USD 1 bln equity and debt for Ukrainian businesses.

Operational management track record: part of operational team supervising Kimberlite mine and alluvial mines development in South Africa and Lesotho, as well as being operational director of concrete production business in Ukraine.

Denis has joined the project in 2019.

Ruslan Potapchuk CFO

Ruslan has more than 25 years’ experience in financial sector, working on top level finance department positions for largest Ukrainian production businesses.

His track record includes working for such companies as Stirol, the largest fertilizer production plant in Ukraine (as deputy CFO) as well as UkrTatNafta, one of the largest crude oil processing business in the country (also as deputy CFO).

Ruslan has joined the project in 2018.
Management Team (Ukraine)

Igor Volobayev, PhD  
Chief Chemist, Technologist

Igor graduated in 2009 from Kryvyi Rih Technical University by specialty Mineral Processing. He earned his PhD in Chemical Sciences in 2016 by the specialty “Colloid Chemistry”.

He worked on the processing of such minerals as gold, ferrous ores, non-ferrous and ores of rare metals. He also has authored 20+ scientific papers and two patents. He has 15 years of experience in practical work with natural and technogenic deposits.

Igor joined the project in 2021.

Oleg Khomenko  
DScTech, Mining Engineer

Oleg is a Doctor of Technical Sciences, professor, specialist in ore development technology.

As a consultant on numerous projects, he analyzed the initial data for design and technological tasks; evaluated the proposed projects and technologies; predicted possible project risks.

He has collaborated with specialists and customers from Ukraine, Poland, Germany, the Czech Republic, UK, Kazakhstan, Uzbekistan, China, Korea, Mongolia and more. He has more than 300 publications.

Oleg joined the project in 2021.

Igor Zholonkivskyi  
Project / IR manager

Igor has more than 14 years of experience in financial analytics, equity research and banking fields.

He co-managed a corporate loan portfolio of circa EUR 20 bln in one of the largest Austrian banks.

Igor joined the project in 2019.
Anthony is the former Managing Director and Chief Executive Officer of Galaxy Resources (formerly ASX: GXY), which merged with Orocobre (formerly ASX: ORE) in 2021. In this role, Anthony grew the company from an initial US$20 million market capitalization and managed a global portfolio of assets, including mining operations and development projects in Australia, Canada and Argentina, built one of the largest capacity and most technologically advanced lithium processing facilities in China, and established a strategic customer network in the lithium battery and materials space across the Asia region, as well as North America and Europe.

Galaxy's global portfolio of assets included:

1) the Mt Cattlin lithium mine in Western Australia, which was the second largest producer globally of spodumene from Australia back in 2011, supplying to the lithium chemicals market in China and today is still a leading producer supplying up to 240,000tpa (30ktpa LCE) of spodumene into the market with a resource of over 13Mt of resource at 1.2% Li2O

2) the Jiangsu Lithium Carbonate Plant in China, which was completed in 2012 and at 17,000tpa was at the time, the largest capacity lithium chemicals conversion facility in Asia

3) the Sal de Vida lithium brine project in Argentina, a 45,000tpa LCE lithium chemicals project with a 40+ year mine life

4) James Bay, a hard rock spodumene project in Quebec Canada, with a planned capacity of 321,000tpa (40ktpa LCE) of spodumene concentrate and a 19 year mine life.

The combined company, now known as Allkem (ASX: AKE), is the world’s fifth largest lithium producer and has a market capitalization of just under US$5 billion. He is currently a Board Director of Li-Cycle Corp. (NYSE: LICY), North America’s largest lithium battery recycling and resource recovery company, and Li-Metal (CSE: LIM), a developer of lithium metal and lithium metal anode technologies for next generation lithium solid-state batteries. Anthony is a Senior Advisor to Sicona Battery Technologies (a leading developer of silicon-composite materials for next generation lithium battery anode technologies) and also EMR Capital, a global Mining Private Equity Group. He was also recently appointed as Operating Partner to the Global Private Equity Group of Franklin Templeton (NYSE: BEN), a global asset management organization operating in 165 countries with over 70 years of investment experience and US$1.55 trillion in assets under management.
Noel O’Brien Project Manager

Noel is a metallurgist and processing expert with experience in multiple lithium projects in Australia and internationally. He has over 40 years of experience in the resources sector and in the areas of general management, international business development, project management of major infrastructure and mining projects and operations management of various commercial and mining companies.

Noel has previously acted as Executive Director of Birimian Ltd that owned the Goulamina lithium project in Mali, he has previously acted as a technical adviser to the Mt Holland lithium project and was previously a technical consultant to Galaxy Resources (now Allkem) and to the Bikita Minerals Lithium Project in Zimbabwe.

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
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<th>Involvement</th>
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<tr>
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<td>Re-commissioning team</td>
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<td>Baldhill</td>
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<td>AVZ</td>
<td>DR Congo</td>
<td>Manono</td>
<td>Consulting on met development</td>
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Thank You

Denys Aloshyn

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Audience Discussion

Moderator
Oleksandr (Sasha) Kravchenko
Managing Partner
McKinsey & Company, Kyiv Office
Next steps

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