

#### The CRONIMET Mining GROUP

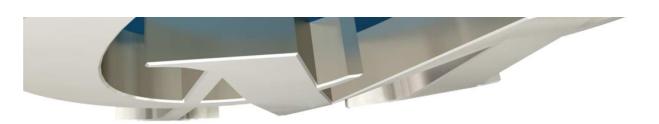
>>> with people for a sustainable world





### CRONIMET's Strategic Positioning in the Tungsten Market

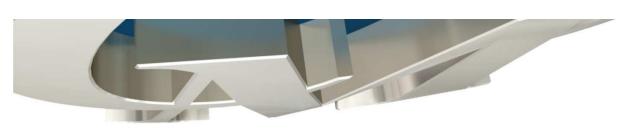






#### Agenda

- 1 CRONIMET (Mining) Group
- 2 CRONIMET's Strategic Positioning in the W-Market
- 3 Conclusion and Outlook





#### **CRONIMET Group** - History

- > 1980 Foundation of CRONIMET in Karlsruhe
- 1995 "Think Local Act Global" CRONIMET Group becomes an international System Provider for Stainless Steel and Ferro-Alloys products
- 2004/05 CRONIMET A multinational Integrated Commodity Group with two sub-groups:
  - > Secondary raw material sector >>> CRONIMET Holding
  - > Primary raw material sector >>> CRONIMET Mining
- > Today:
  - > Active on four continents with >70 subsidiaries
  - > 5.200 Employees







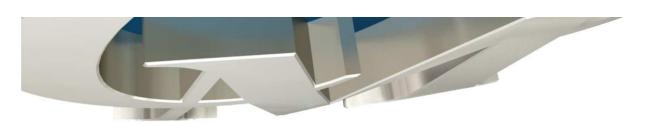
#### **CRONIMET Group** - Corporate Structure

>>> CRONIMET Mining represents one of the two sub-groups of CRONIMET, responsible for primary raw material activities within the whole CRONIMET Group

CRONIMET Group
The International Commodity Group for Metals & Minerals

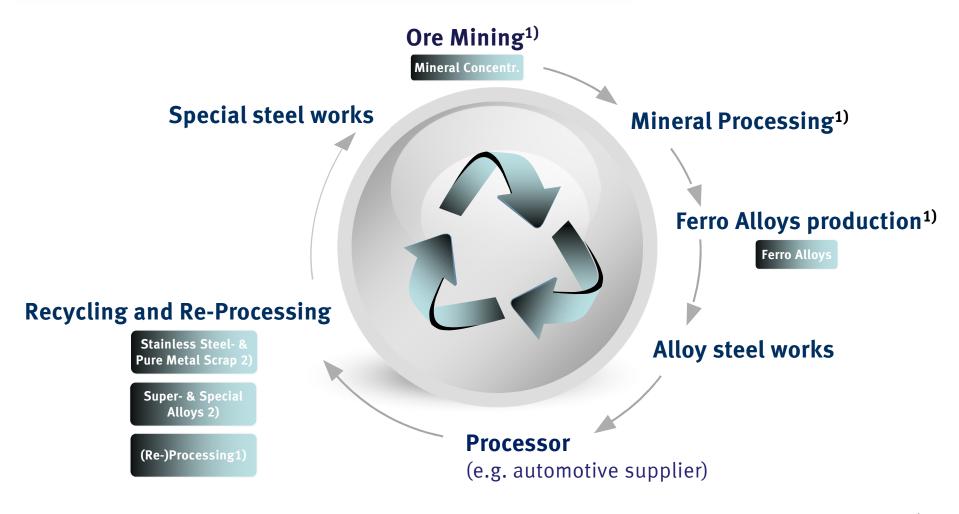
## CRONIMET Holding GmbH CRONIMET Mining AG Mining & Production (Re-)Processing Sales & Trading Energy Solutions Secondary Market Stainless Steel and Pure Metal Scrap Super & Special Alloys Pure Metals and Ferro Alloys

	Mining	Processing		Trading		Energy
	Strategic			05.1		Renewable
-	Investments > 50%	_ Metallurgy	-	Off-take Agreements		energy solutions, especially for industrial mining
L	Financial Investments <= 50%	(Re-) Processing		– Back to Back		



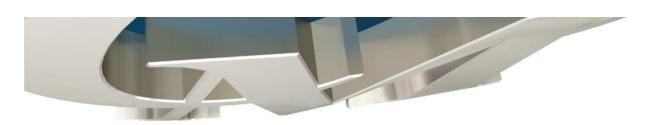


#### **CRONIMET Group** - Raw materials out of one hand



<sup>1)</sup> Activities of CRONIMET Mining Group

<sup>2)</sup> Activities of CRONIMET Holding Group



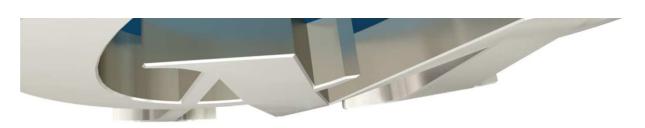


#### **CRONIMET Mining Group** - Operations - ZCMC Armenia Mine Impressions











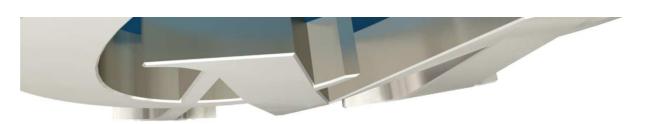
#### **CRONIMET Mining Group** - Operations - ZCMC Armenia

#### **Processing Impressions**











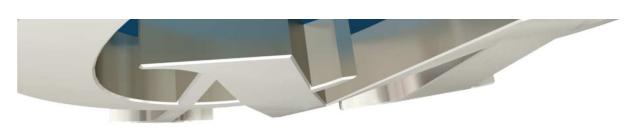
#### **CRONIMET Mining Group** - Operations - Chrome SA

#### Mine Impressions







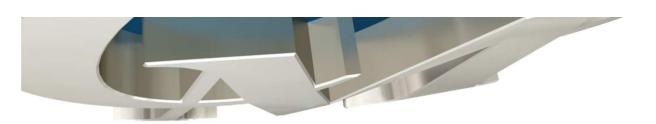




#### **CRONIMET Mining Group** - Operations - Chrome SA

**Processing Impressions** 





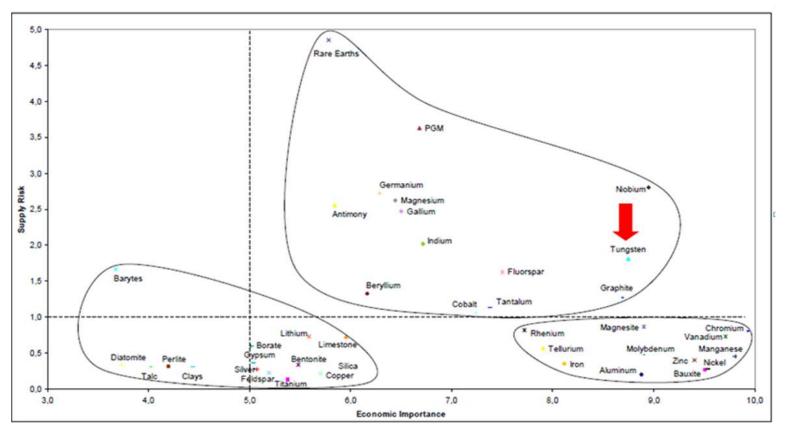


#### Agenda

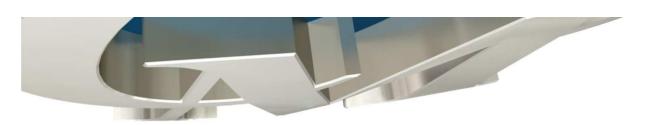
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**Strategic Attractiveness of Tungsten** (Source: European Commission, "Report of the Ad-hoc working group on defining critical raw materials")

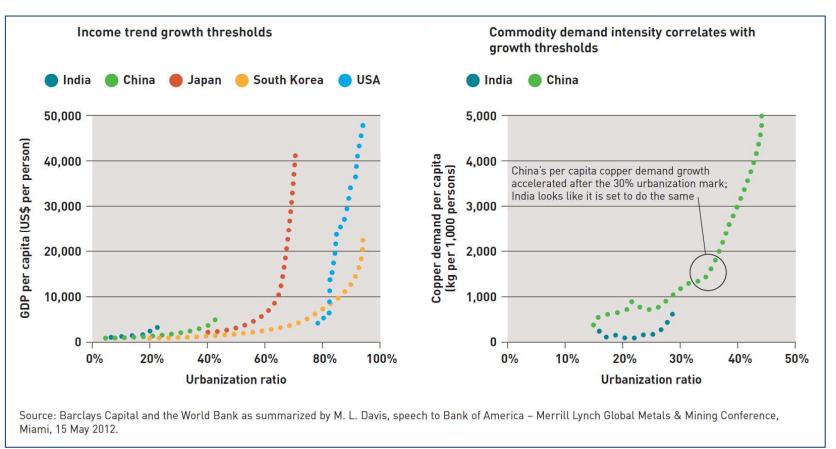


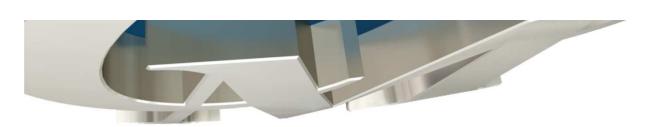
> Tungsten is characterized by a high **strategic attractiveness** or high **"criticality"**, especially in the economic zones outside China.





The emerging countries and the "new giants" will further drive the tungsten markets, not only as a consequence of a continuous urbanization but also because of a growing demand for high-tech products.

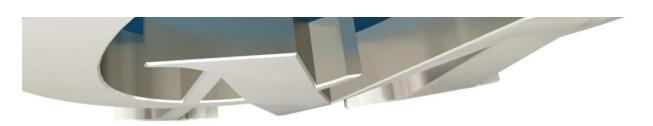






Tungsten Products traded, handled, recycled and/or processed within the CRONIMET Group

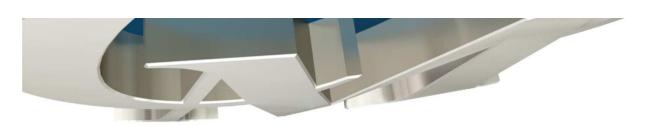
# CRONIMET Holding GmbH CRONIMET Mining AG Recyling, Handling and Trading of Secondary Raw Materials Trading and/or Processing of Primary Raw Materials Trungsten(-Carbide) Super- and Special Alloy High-Speed Steel Trading and/or Processing of Primary Raw Materials Trading and/or Processing of Primary Raw Materials Trungsten Concentrats Ferro-Tungsten APT





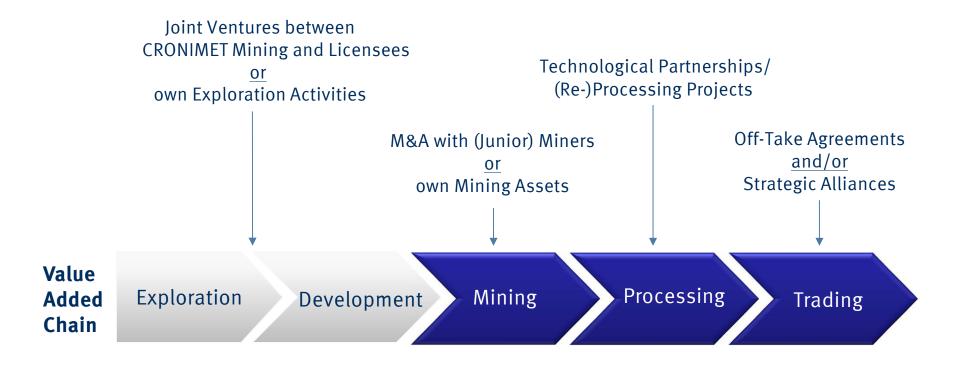
#### **Recycling Activities**

- > Being a specialist waste management company, CRONIMET trades, handles and recycles solid tungsten scrap as well as soft-scrap and powder.
- > CRONIMET is an experienced intermediary between tungsten discard points and specialist downstream companies and/or consumers.
- > CRONIMET can react flexible to the requirements of the clients with respect to packaging, shipping and delivery time to guarantee the optimal use of the material at the client's facilities.
- CRONIMET's rapidly expanding High Temperature and Aerospace Alloy Division deals with the preparation and processing of super alloys and refractory metals which in turn are used in the manufacture of products for the aerospace, defense, chemical, and medical industries, as well as electrical engineering technologies.





**Backward Integration Strategy of CRONIMET Mining** 



**CRONIMET Mining's Vertical Backward Integration** 





**Backward Integration Strategy of CRONIMET Mining (in the special case of Tungsten)** 

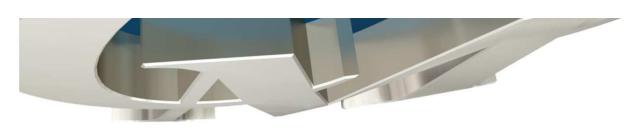
 Identification and evaluation of attractive mining projects

- Responsible and transparent sourcing of (conflict-free) Tungsten Concentrates
- Mineral processing activities
- Re-Processing projects
- Tolling contracts with refining companies

- Off-Take agreements
- Spot contracts
- Sales
- Services



CRONIMET Mining's Vertical Backward Integration





**Backward Integration Strategy of CRONIMET Mining (in the special case of Tungsten)** 

- Identification and evaluation of attractive mining projects
- Exploration activities

- Responsible and transparent sourcing of (conflict-free) Tungsten Concentrates
- Mineral processing activities
- Re-Processing projects
- Tolling contracts with refining companies

- Off-Take agreements
- Spot contracts
- Sales
- Services



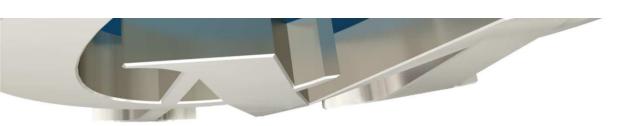
CRONIMET Mining's Vertical Backward Integration





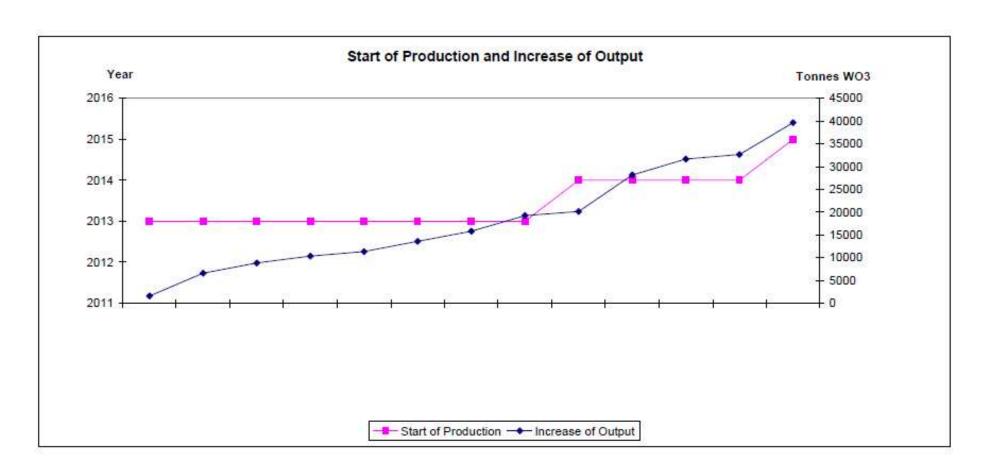
**In-house Evaluation of Tungsten Mining Projects** 

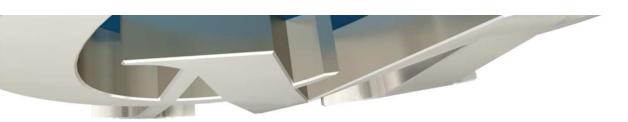
- Taking into account the strong market position of CRONIMET in the Tungsten sector as well as the strategic attractiveness of Tungsten, a **direct investment** in a Tungsten deposit or mine is from high strategic interest for CRONIMET Mining.
- Since 2011, CRONIMET Mining has been identifying and evaluating investment options in the tungsten mining sector.
- > The evaluation is carried out by experienced and qualified professionals, typically on-site at the deposits or at the mine.
- > Important investment criteria for the evaluation of Tungsten projects are...





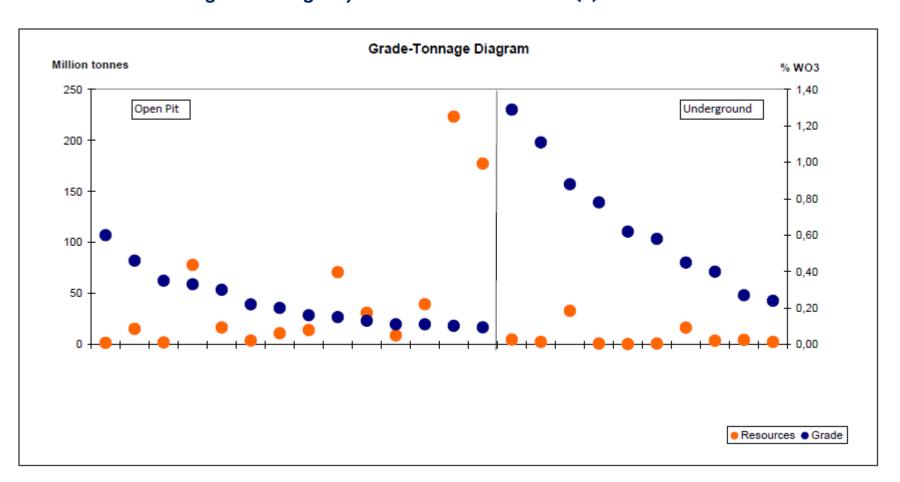
In-house Evaluation of Tungsten Mining Projects – Selection of Criteria (I)

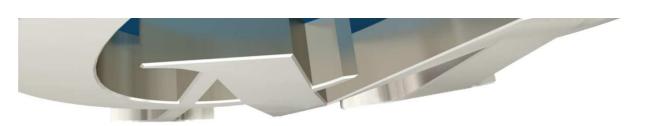






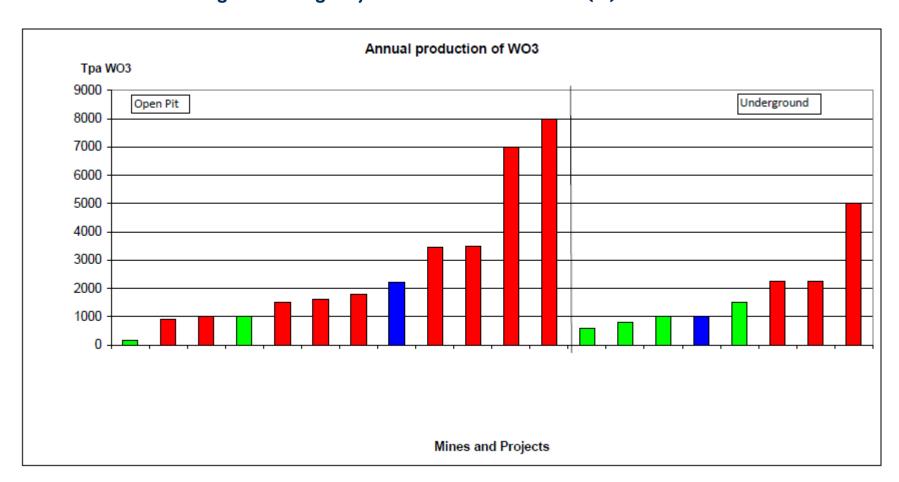
In-house Evaluation of Tungsten Mining Projects – Selection of Criteria (II)







In-house Evaluation of Tungsten Mining Projects – Selection of Criteria (III)







#### **Key Elements for further Growth**

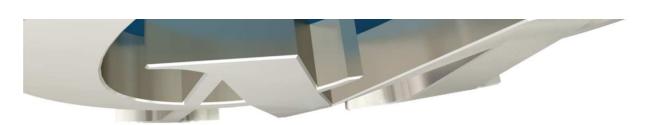
- > Through its worldwide trading and processing network, CRONIMET Mining has an **advantageous knowledge** about business opportunities and project options.
- > CRONIMET Mining has a **strong experience** in evaluating, securing, developing, financing, constructing and operating mining projects.
- > CRONIMET Mining is one of the few German companies **directly invested in mineral deposits and mines**.
- > CRONIMET Mining participates in **Raw Material Partnerships** of the Federal Republic of Germany as potential project development and investment partner, for example in Kazakhstan.
- > CRONIMET is seeking for **strategic alliances** along the added value chain of Tungsten in order to secure the raw material supply for the industry (especially for the European industry, the second largest Tungsten consumer of the world).
- > CRONIMET Mining is a long-term orientated, reliable and hence **strategic investor**.





#### **Key Elements for further Growth**

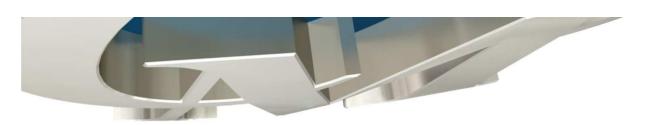
- Artisanal and semi-industrial mine production contributes a noticable proportion of the total Tungsten production (estimates of the "International Council on Mining & Metals" for 2010: > 6%)
  - Semi-industrial mining and processing concepts will need to be professionalized and applied, especially in developing and emerging countries. CRONIMET has developed sustainable concepts for such environments.
- Declining ore grades at existing and new tungsten mines requires innovative processing technologies and concepts as well as highly skilled operators.
  - > R&D programmes and capacity building within **CRONIMET Mining's new Business Unit "Processing"**.
  - CRONIMET offers beneficial processing solutions to its business partners.
  - Additionally, CRONIMET Mining is seeking for partnerships with high-tech companies and scientific institutions.





**CRONIMET'S Country Focus in terms of Tungsten** 







#### Agenda

- 1 CRONIMET (Mining) Group
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#### **Conclusion and Outlook**

>

- > The CRONIMET Group has a **strong competitive position** in the Tungsten market.
- CRONIMET offers an advantageous combination of primary and secondary raw materials.

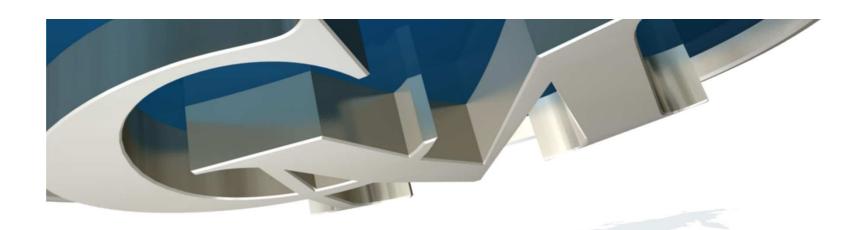






#### **Conclusion and Outlook**

- > It is a strategic objective of CRONIMET to further **increase the volumes of Tungsten products within the CRONIMET Group** and to offer its clients and partners an attractive set of services, products and business solutions.
- > CRONIMET Mining has been identifying and evaluating **investment options** in the worldwide Tungsten (mining) sector since 2011. A direct investment in a Tungsten deposit or mine is one of the preferred investment option for the CRONIMET group.
- Exploration Promotion Programmes as well as Raw Material Partnership Agreements could prepare the ground for CRONIMET Mining and other European companies to directly invest into mining projects, especially in the field of critical raw materials such as Tungsten.
- > In order to achieve highly integrated value chains, CRONIMET Mining envisages strategic alliances with downstream companies and/or end consumer.



Thank you very much for paying attention!

Vielen Dank für Ihre Aufmerksamkeit!





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