

**EMC**  
METALS CORP.

**TSX:EMC**  
January 2012

**THE SPECIALTY METALS COMPANY**



[www.emcmetals.com](http://www.emcmetals.com)



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*This presentation contains certain statements that may be deemed "forward-looking statements". All statements in this release, other than statements of historical fact, that address future production, reserve potential, exploration drilling, exploitation activities and events or developments that the Company expects to occur, are forward-looking statements. Forward-looking statements are statements that are not historical facts and are generally, but not always, identified by the words "expects", "plans" "anticipates", "believes", "intends", "estimates", "projects", "potential" and similar expressions, or that events or conditions "will", "would", "may", "could" or "should" occur. Information inferred from the interpretation of drilling results and information concerning mineral resource estimates may also be deemed to be forward-looking statements, as it constitutes a prediction of what might be found to be present when and if a project is actually developed.*

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*The contents of this presentation were reviewed by Willem Duyvesteyn a Qualified Person as defined by National Instrument 43-101. Mr. Duyvesteynis employed by EMC Metals Corp.*

- EMC Metals Corp. Ticker Symbol: (EMC.TO)
- Main board TSX listing—market cap ~ \$23 million (\$0.15/share)
- Share Structure; 150.6 M I/O; 165.6 M F/D
- Canadian and US reporting company (OSX & SEC)
- Product focus on scandium, tungsten, vanadium, boron, and beryllium
- Main office in Reno (USA), previously Vancouver
- Key Assets:
  - Springer Tungsten Mine & Plant (100%) - Nevada (book value ~\$32 million)
  - Nyngan Scandium Project (50%) - Australia (JV with Jervois)
  - Carlin Vanadium Property (100%) - Nevada
- Exploration Assets:
  - Two scandium exploration projects (Norway and USA)

- **Develop Nyngan Scandium Project (50/50 JV)**
  - Feasibility study-complete by Q1 2012
  - Satisfy earn-in requirements to 50% equity
  - Plant construction commences in 2012
  - First scandium oxide production in 2013
- **Capture value in Springer Tungsten facility**
  - Sale process underway, Laurentian Bank is lead, with other investment banks supporting in Japan and China
  - Options include re-start, JV, or outright sale
- **Progress other scandium exploration properties**
  - Fast track Norwegian pegmatite targets – identify early ‘hot spots’
  - Sample Utah property to confirm historic occurrences
  - Identify and pursue other primary scandium resource targets

- **Project Development**

- Nyngan Scandium Project (NSW) – 50%
  - A 50/50 JV earn-in with Australian junior miner Jervois Mining Limited.
  - NI 43-101 resource of 12 Mt, grading 261 ppm.

- **Exploration Projects**

- Tordal and Evje-Iveland (Norway) – 100%
  - Control of about 300 sq km in South Norway.
  - First exploration results include stream sediments with over 200 ppm Sc.
- Fairfield, Utah, USA - 100%
  - In 1950's, the site produced bulk samples (+2 tons) containing 1,000 ppm Sc

# Nyngan Scandium Project NSW, Australia

## Introduction

### Resource

NI 43-101 resource of approximately 12 million tonnes, grading 261 ppm scandium (100ppm cut-off). In-ground value of resource is over \$6 Billion (12Mt @ 0.026 % Sc x 1.53 x \$1,400/kg Sc<sub>2</sub>O<sub>3</sub> = \$6.7B)

### JV Structure – EMC is Operator

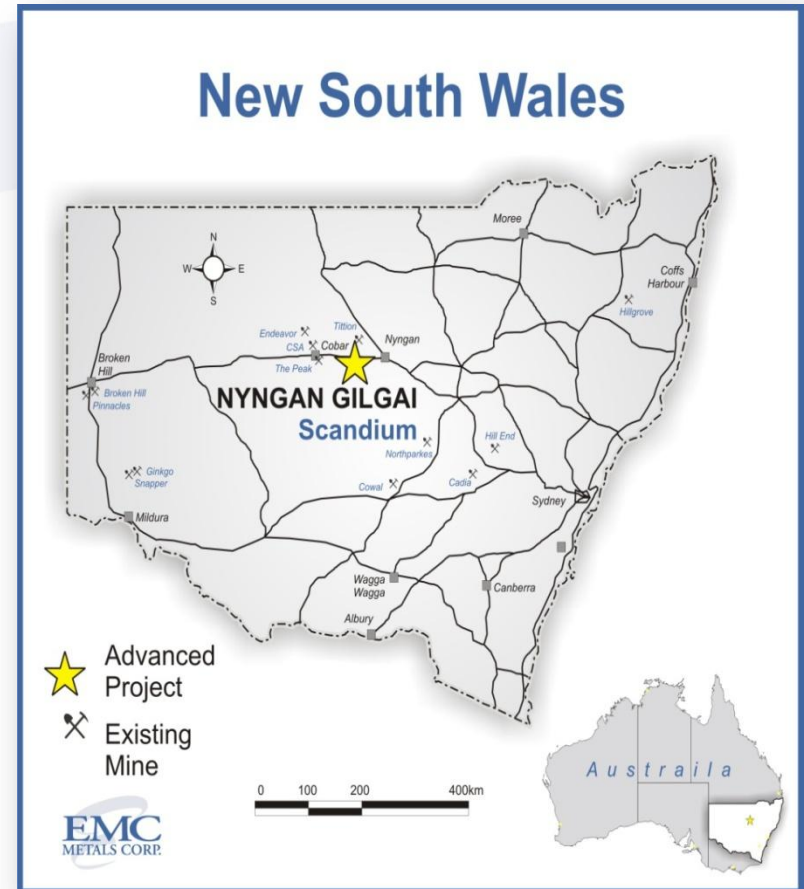
EMC signed a 50/50 JV earn-in agreement with Jervois Mining Ltd. (ASX: JVR) in February 2010, with the following earn-in conditions:

- Minimum spend requirements of A\$0.5M **(Done)**
- Feasibility study due in Q1 2012, **(Underway)** and
- Final cash payment of A\$1.3M, at delivery of feasibility study

### Project Development Details

- Property covers +40 sq km, good infrastructure available
- Target production in 2013
- Plan for surface mine-resource is at shallow depth (<65 m)
- Project plant throughput of 250 tpd ore,
- Initial plant CapEx estimate of \$56M
- Annual scandium oxide product output of 28,000 kg
- Clear expansion potential from resource (+40 years)
- Portion of product will be suitable for producing Sc-Al alloy

**Only known primary scandium mining project being developed**



- **Solid Oxide Fuel Cells (as  $\text{Sc}_2\text{O}_3$ ) – SOFC's**
  - Sold to intermediate 'tape' mfg'r's as high grade oxide (99.9%)
  - Solid electrolyte stabilizer, possible anode/cathode uses too
- **Scandium Aluminum (Sc-Al) alloys**
  - Sold to master alloy mfg'r's as oxide (95-98%)
  - Aircraft construction (weight reduction and strength)
  - Automotive/Transport (heat resistance and strength)
  - Naval/Marine (corrosion resistance in salt water, strength)
- **Other Potential Markets**
  - Catalyst applications in oil refining, biodiesel, organic chemical
  - Metal halide lighting applications

# Scandium's Value Proposition

- **Solid Oxide Fuel Cells**

- Sc works as a heat stabilizer in the system, enabling reactions at lower temperatures, generating higher power outputs, increasing the commercial life and lowering the effective cost of the unit.

Scandium is a required ingredient in today's best performing SOFC's, a fast emerging electrical energy generating technology for both distributed power and transportation applications.

- **Scandium Aluminum (Sc-Al) alloys - Scalmalloy®**

- Sc is an outstanding alloy agent with aluminum, offering high strength, toughness, resistance to oxidation, and full weld capability not found in other aluminum alloys.

Scandium-Aluminum alloys are highly attractive to industries where combined strength and manufacturing flexibility (weldability) makes for lower cost, lighter weight structures (aircraft).

- **Supply**

- No actual mining ...yet - supply comes from co-products & stockpiles,
- Stockpiles diminishing in Russia (price up/grade down),
- Co-product production from specialty metals (W, U, Ti, etc).

- **Demand**

- Consumption limited by availability, no reliable numbers,
- Estimate 10,000 kg oxide used currently annually

- **Potential future demand is significant**

- SOFC market likely already constrained by current supply,
- Sc-Al market is developing now; could be 2-4x bigger than SOFC one.

- **Current Pricing**

- $\text{Sc}_2\text{O}_3$  (oxide) sells for over \$2,000/kg (>US\$60/oz),
- Prices can be much higher, based on small quantity sales,
- Price is sensitive to purity - SOFC application needs 99.9%

# Springer Tungsten Mine/Mill Nevada, USA

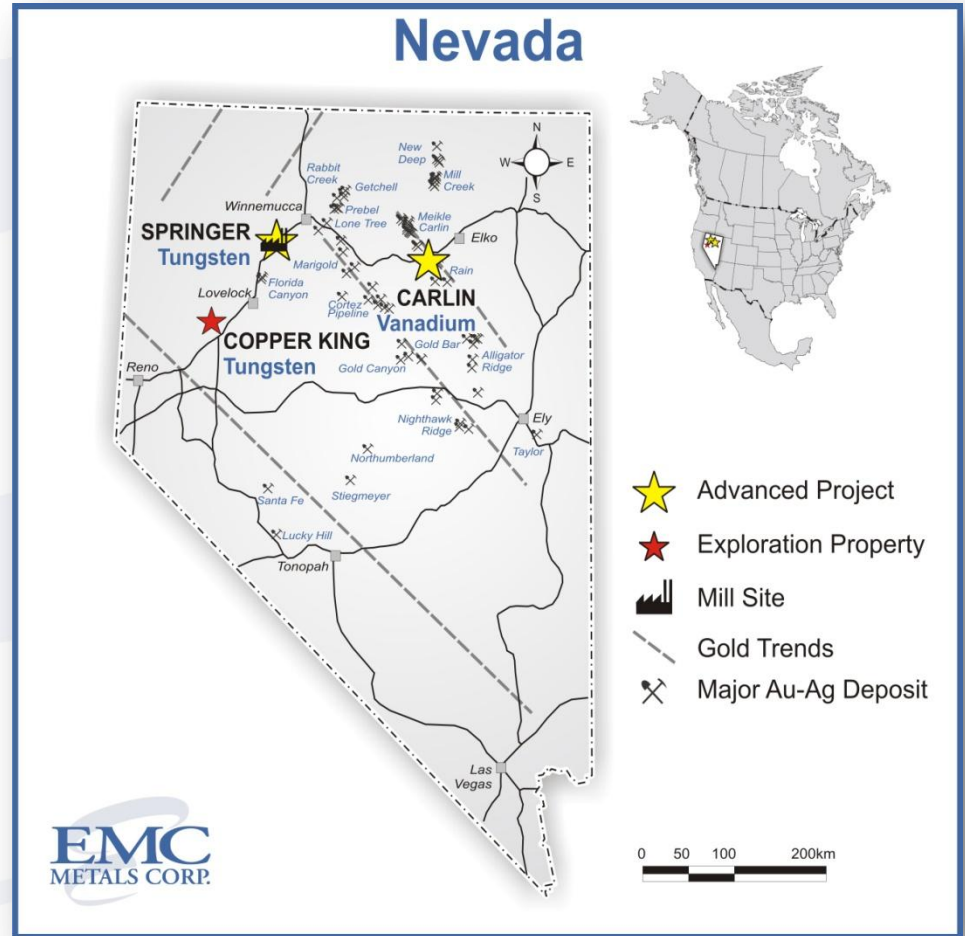
## Introduction

### Resource

A NI 43-101 3 year resource was established in 2007, but a substantially larger historic resource is available from the 1970's. The area was mined for tungsten beginning in the 1920's, and has excellent potential for further tungsten resources. EMC controls a +14 square mile property position, and adequate water rights to expand the operation if desired.

### Mine/Mill Specifics

- Mine and mill capacity is 1,200 tpd,
- Original cost US\$ 71M (1980 dollars)
- Est. US\$150M replacement cost
- Mine commissioned in 1981
- Surface facilities refurbished
- Underground mine requires de-watering
- All federal, state & local permits in place
- Fully automated mill-new instrumentation
- Rated output of 146,000 MTU/year  $WO_3$
- Higher outputs possible



# Springer's Value Proposition

- **Tungsten-a strategic metal- 80% sourced from China**
  - Springer is one of two existing tungsten mines in North America,
  - Tungsten carbide is the material of choice for wear surfaces on metal cutting tools and drill bits,
  - Manufacturing, mining, and oil field services industries rely on tungsten-derived products,
  - Tungsten's unique properties find use in many military applications, in addition to laboratory, catalyst and lighting uses.
- **The major tungsten price rise in the last 18 months reflects market realities-tight supply/few suppliers.**

EMC management believes the Springer tungsten facility is a viable mining operation today, either as purchased by a buyer or restarted by EMC.  
Tungsten production/revenue is possible in early 2013.



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