



**Kemin Resources Plc**  
("Kemin" or the "Company")

**Pre-Feasibility Study Confirms Robust Project Economics**

Kemin Resources plc (AIM: KEM), the molybdenum and tungsten exploration and development company with substantial interests in Kazakhstan, is pleased to announce that the Pre-Feasibility Study (the "PFS") prepared by Project XXI SG LLP ("Project XXI") on its two wholly owned deposits, Drozhilovskoye and Smirnovskoye, has confirmed the technical and economic viability of the projects.

**Key highlights**

- PFS confirms that the Drozhilovskoye and Smirnovskoye projects are technically and financially viable and exhibit robust economics
- Project XXI has estimated resources for both projects as follows:
  - Drozhilovskoye deposit's updated resource estimate is 139.8 million tonnes of ore, containing:
    - 262.9 thousand tonnes of molybdenum at 0.188%, and
    - 64.3 thousand tonnes of tungsten at 0.046%
  - Smirnovskoye deposit's updated resource estimate is 170.5 million tonnes of ore, containing:
    - 221.7 thousand tonnes of molybdenum at 0.13%, and
    - 17.1 thousand tonnes of tungsten at 0.01%
- We anticipate that significant portion of this resource will be converted into the JORC compliant resource category, in due course, subject to financing
- Robust estimated project economics with NPV of US\$1.55 billion for the two projects applying a 9% discount rate, adjusted for inflation:
  - Mine life ("LOM") of 30 years for Drozhilovskoye and 36 years for Smirnovskoye
  - Total average annual molybdenum concentrate production of 20,600 tonnes
  - Total average annual tungsten concentrate production of 3,100 tonnes
- The PFS is based on a price assumption of US\$21,000 per tonne for molybdenum and US\$19,000 per tonne for tungsten concentrates, adjusted for inflation
- Core capital expenditure for implementation of both projects is estimated at US\$267.4 million
- Highly competitive capital and operating costs enable both projects to generate positive returns and free cash flow even in an environment of low molybdenum and tungsten concentrate prices, with a positive NPV generated at c. US\$8,000 per tonne for molybdenum and tungsten concentrates
- No significant infrastructure barriers or expenditure requirements on new infrastructure identified

- Mining and processing using standard well proven methodologies
- Definitive Feasibility Study (“DFS”) to commence immediately, targeted for completion in 2H 2014:
  - DFS expected to further refine the resource estimates and demonstrate substantial operational upside potential
- Drozhilovskoye and Smirnovskoye projects are on track to become substantial rare metals producers within the next 24 months, subject to funding:
  - Mining commencing in 2015 and first saleable product delivered in 2016 for Drozhilovskoye and
  - Mining commencing in 2016 and first saleable product delivered in 2017 for Smirnovskoye

**Altynbek Orynbassarov, COO of Kemin Resources, commented** *“I am delighted to update the market on our pre-feasibility study, which provides critical reassurance to enable us to progress swiftly to a definitive feasibility study and ultimately the future development of the Drozhilovskoye and Smirnovskoye projects.*

*“Most significantly, the updated resource estimates and enhanced NPV are confirmations of our long held belief that these two projects are currently amongst the most exciting molybdenum and tungsten projects awaiting development in the world. We have the opportunity to develop substantial rare metal projects that will, in our view, deliver significant long term profits to our shareholders in the years ahead.”*

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## Detail on the PFS

### Overview

Kemin commissioned Project XXI to undertake a PFS on the Drozhilovskoye and Smirnovskoye rare metal deposits. The deposits are located in the Kostanay region in the northwest of Kazakhstan. The Drozhilovskoye and Smirnovskoye deposits areas are 6.7 sq.km and 13.7 sq.km, respectively.

The objectives of Project XXI's work were to:

- summarise and provide reliable information about the two deposits
- present an independent assessment of resources and reserves
- review the pre-feasibility conditions for development of the two deposits

Project XXI augmented the available historical resource and reserves data using the results of new drilling performed during 2011-2012, updated geological information and changed assessment parameters resulting in the derivation of revised resource estimates. The updated resource estimate for Drozhilovskoye is 139.8 million tonnes of ore, containing 262.9 thousand tonnes of molybdenum and 64.3 thousand tonnes of tungsten. Smirnovskoye's updated resource estimate is 170.5 million tonnes of ore, containing 221.7 thousand tonnes of molybdenum and 17.1 thousand tonnes of tungsten. The prior resource estimates (published on the Company's Admission Document dated 4 February 2013) for Smirnovskoye and Drozhilovskoye were 108 million tonnes (at 0.1056% Mo) and 140 million tonnes (at 0.188% Mo), respectively.

The PFS was compiled by Project XXI with certain underlying technical disciplines, particularly those relating to environmental and social studies, benefiting from the input of other expert parties. The geological model and resource estimation for the PFS were prepared by Project XXI according to the requirements of the Republic of Kazakhstan based on the adopted FSU standards.

### Economic Evaluation

The economic model for the two projects was updated using the new resource data, current metal prices and operating costs. Operating costs (per tonne of milled ore) are estimated at US\$19.52 per tonne and US\$19.01 per tonne for Drozhilovskoye and Smirnovskoye respectively, whilst capital expenditure (which is based on the purchase of new equipment) for both deposits was estimated at, in aggregate, US\$267.4 million.

At full operating capacity, the financial model assumes an average processing rate of 4.6 million tonnes per annum of ore for each mine. Using a price of US\$21,000/t for molybdenum and US\$19,000/t for tungsten concentrates, adjusted for inflation, the projects are estimated to generate NPV of \$1.55 billion at 9% discount rate. The positive NPV of the project is realized at price of c. US\$8,000 per tonne for molybdenum and tungsten concentrates.

### Exploration and drilling

The geochemical characteristics of minerals encountered on both of the deposits correspond to the results of the prospecting work carried out previously. The minerals with commercial potential are molybdenum, tungsten, bismuth, lithium, rubidium, caesium, antimony, pine forest, and beryllium.

As part of the process of verifying existing historical data, previously drilled bore holes at Drozhilovskoye (dated 2004-2005) were re-drilled and assayed. The same was performed at

Smirnovskoye with the results achieved at both demonstrating sufficient correlation to the historical results to support the use of the historical data in the development of the updated resource model.

### Mining

Both deposits lie close enough to the surface to support an open cast mining operation. Daily processing rates and conversion of ore are forecast at 15 thousand tonnes per day for each deposit.

### Processing

The selected processing methodology for the molybdenum bearing ores at both sites will be principally the same, although the Drozhilovskoye ore is expected initially to be separated into molybdenum bearing ore stockpile and a tungsten bearing ore stockpile.

Once separated, the molybdenum recovery process for both mines will involve crushing and milling followed by sulphide flotation to produce a 57% molybdenum concentrate ( $\text{MoO}_3$ ) with an overall recovery of around 90%. The molybdenum concentrate from both mines will be converted from a sulphide to an oxide in a converter. Total  $\text{MoO}_3$  concentrate produced by both mines is expected to be about 2.1 thousand tonnes per month.

The recovery of tungsten at Drozhilovskoye will also follow a process of crushing and milling. Once milled, the ore will be treated in a gravimetric circuit followed by magnetic separation to recover the wolframite and finally a flotation process to recover the tungsten that is present as scheelite. Overall recovery is expected to be 82.6%, producing around 280 tonnes of concentrate per month at 53% tungsten trioxide. At the current stage, the PFS assumes tungsten production only from Drozhilovskoye due to its higher ore grade. Final decision regarding tungsten production from Smirnovskoye will be determined at the DFS stage.

The processing methods required by both mines are standard and do not require any new development or application of any new technologies.

### Infrastructure

The mine and processing plant will be supplied with water from underground sources as well as recycled water from the tailings dams. Power supply will come from an 110kV power line which is located 10.9km away. Transport infrastructure is well established with existing accessed paved road 4.5km away and rail station 40km away. Capital budget includes US\$13.6M spend for establishing additional infrastructure on site including roads and electric lines for the projects.

### Environmental

The Company has developed a preliminary plan for environmental protection. A detailed plan will be developed once the production capacities and other variables have been better defined. The plan will be formulated in accordance with the requirements of the legislation of Kazakhstan and international norms.

**Review by Qualified Person**

Oleg Gorozhanin, senior consultant, has reviewed and approved the technical information contained within this announcement in his capacity as a qualified person under the AIM Rules. Mr Gorozhanin holds a PhD in geological and mineralogical sciences, is a member of the Association of Geological Organizations, is a member of the Russian Academy of Science (Geological and Mineralogical Division), and has over 40 years of relevant mining industry experience.

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