

Production of Ultra-Low Alpha High Purity Alumina (HPA) for Semiconductor Applications Commences at AEM's 2,000 tpa capacity Cap-Chat Plant.

Highlights

- 01 Modifications have been completed at the 2,000 tpa capacity Cap-Chat plant to allow the commercial scale production of “ultra-low alpha” HPA (i.e., HPA that is essentially free of alpha radiation emitting radionuclides of uranium and thorium).
- 02 Test work during the laboratory trials stage has shown levels as low as 0.56 ppb uranium and below the 0.02 ppb thorium detection limit.
- 03 Following the successful completion of customer test work, production has commenced to supply Korean, Japanese and Chinese customers with ultra-low alpha HPA for industrial scale trials.
- 04 Product developed for leading edge thermal packaging applications (thermal fillers and thermal interface management materials) in the demanding semiconductor sector, particularly for AI accelerator chips and associated high bandwidth memory.
- 05 Following completion of plant modifications, AEM launches the SupALOX L-Series™ ultra-low alpha High Purity Alumina (HPA) suite of products.
- 06 HPA market forecast to experience strong growth driven particularly by demand from semiconductor applications.

Announcement Overview

Advanced Energy Minerals Limited (ASX: AEM) (“AEM” or “the Company”), a producer of high purity alumina (HPA), is pleased to announce the completion of plant modifications to allow the commercial scale production of ultra-low alpha HPA at its Cap-Chat 2,000 tpa capacity plant in Quebec, Canada. Following the successful completion of customer test work, production is in train to supply Korean, Japanese, and Chinese customers with ultra-low alpha HPA for industrial scale trials.

With productive capacity in place, the Company is pleased to announce the launch of the ultra-low alpha HPA as its SupALOX L-Series™ product suite.

The SupALOX L-Series™ has been engineered to deliver the increasingly stringent cooling demands placed on thermal interface management by advanced semiconductor systems, such as AI and other high-intensity computational applications.

Executive Chairman
Richard Seville said:

“The launch of ultra-low alpha L-Series HPA represents a significant product milestone for AEM. Having successfully developed the process flow route in the laboratory during 2025, we undertook modest modifications to our plant at Cap-Chat and are now producing ultra-low alpha HPA for industrial trials by customers.”

Ultra-Low Alpha Breakthrough

Over the past year, work at AEM's Montreal Technology Development Centre has developed a refinement to AEM's proprietary Chlorine Leach Crystallisation Purification (CLCP) process that yields an ultra-low alpha HPA.

Independent testing commissioned by AEM and testing by customers has confirmed the HPA produced by this process refinement to contain extremely low levels of uranium and thorium:

- 01 An Independent South Korean laboratory measured uranium at 0.56 ppb and thorium as below the 0.02 ppb detection limit.
- 02 Three customers (two in Japan and one in Korea) have confirmed the material meets their low-alpha needs. One measured uranium approaching 1 ppb.
- 03 Two independent laboratories in the United States and Canada found both uranium and thorium to be below their detection limits.



The Company has since implemented, and recently commissioned, the modifications to the process route at its Cap-Chat 2,000 tpa capacity plant, allowing the commercial scale production of ultra-low alpha HPA. Production has commenced to supply this to customers in Korea, Japan, and China for industrial scale trials.



Managing Director and CEO
Michael Adams said:

“Semiconductor-grade materials require extremely tight impurity control. The L-Series™ ultra-low alpha HPA demonstrates the flexibility of our CLCP process to respond to our customers' evolving demands for improved product performance. I believe this flexibility positions AEM well to benefit as more leading-edge applications reliant on HPA's unique mix of physical and chemical properties emerge.”

About HPA

HPA has critical applications in:

- 01 Semiconductor wafer manufacturing and packaging
- 02 Thermal packaging and interface management materials
- 03 Advanced ceramics
- 04 Synthetic sapphire
- 05 Battery technologies

Unlike homogeneous commodities, HPA is a downstream product which must meet each customer's specific requirements in terms of purity, particle size and morphology.

The process for qualifying a product with a customer can typically take one to two years.

It begins with laboratory testing of small samples before progressing in stages to industrial scale trials.

Structural supply constraints outside China and increasing performance requirements are expected to support demand for premium-grade HPA.

According to CM Group (2025), the global HPA market grew at 13.6% CAGR over the last ten years and is forecast to grow at 10% CAGR 2025-2034 driven in part by semiconductor and electronics applications.



About Advanced Energy Minerals

Advanced Energy Minerals Limited (ASX: AEM) is a producer of high purity alumina (HPA) with production facilities in Cap-Chat, Quebec, Canada. Following completion of a two-year capital works program, the Cap-Chat Plant is now commercially sized with a 2,000 tpa nameplate production capacity and with plans to increase capacity to 3,000 tpa in 2026 (thereby completing the Stage 1 Expansion Project), with further expansion through to 6,000 tpa capacity from 2029 (Stage 2 Expansion Project). At 3,000 tpa full production rate, the Plant will be the 3rd largest HPA production asset outside of China.

<US\$0.05/kWh

Renewable hydroelectric power supply at <US\$0.05/kWh

~77%↓

Carbon emissions of approximately 2.8 tonnes CO₂e per tonne of HPA, ~77% lower than traditional alkoxide production methods

✓ VERIFIED

Emissions profile verified in accordance with ISO 14064 (updated 2025)

✓ ISO

Management systems certified to ISO 9001, ISO 14001 and ISO 45001



AEM expects to position within the lower half of the global HPA cost curve while delivering high purity, ex-China supply to customers seeking ESG-compliant sourcing.

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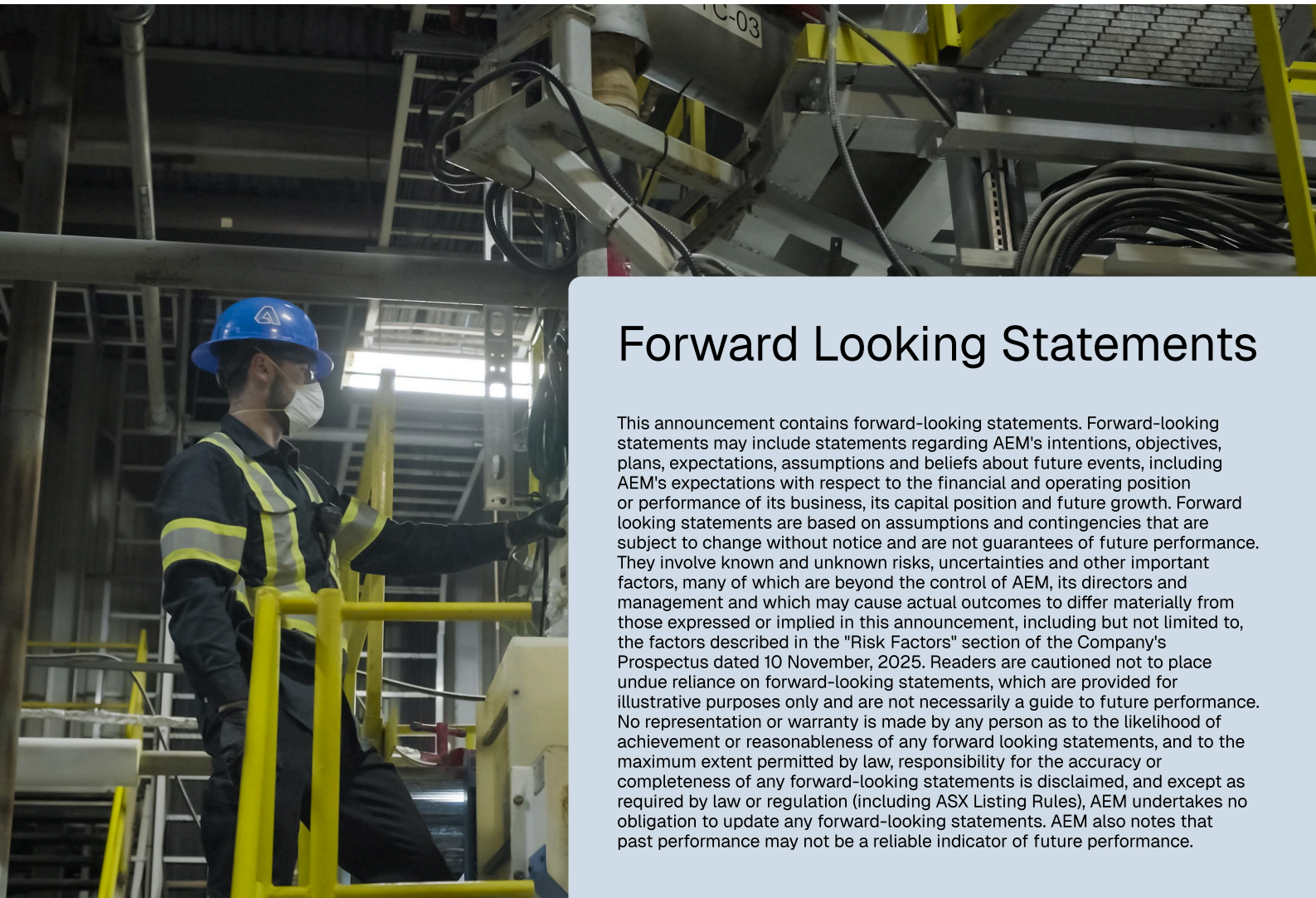
Visit our website “Investors” page for updates including a recent interview with AEM Chairman Richard Seville and CEO Mick Adams and general information on HPA:

→ [Website](#)

This announcement has been authorised for release by the Chairman and the Managing Director and CEO of Advanced Energy Minerals Limited.

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Forward Looking Statements

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