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ASX Release

Cadoux premiumHPA® Achieves Milestone HPA Qualification

Highlights

- *European EV battery development syndicate, SAFELOOP, validates and qualifies Cadoux's premiumHPA® following extensive and comprehensive testwork and trials*
- *The premiumHPA® was applied to SAFELOOP's worldclass EV battery development and application and commercialisation program*
- *The milestone achievement demonstrates technical and commercial acceptance of Cadoux's premiumHPA®*
- *Successful qualification establishes a potential pathway to binding offtake arrangements*
- *Cadoux continues to develop strategic relationships with industry partners within western critical minerals supply chains to commercialise its HPA materials*

Emerging critical minerals producer Cadoux Ltd (ASX: **CCM**) ("Cadoux" or the "Company"), is pleased to advise that its premiumHPA® high purity alumina (HPA) product has successfully completed customer qualification following an extensive multi-stage assessment and validation program within the EU funded SAFELOOP Gen3 Li-Ion electric vehicle battery development project.



Following 24 months of extensive testwork, including specific long duration trials of premiumHPA® suitable to specific battery architecture applications within the SAFELOOP Li-Ion battery development program, Cadoux is pleased to report the successful qualification of its high-purity end product that meets exacting quality and safety requirements.

HPA Qualification Process

HPA plays a critical role in the architecture of Li-Ion batteries – principally as a ceramic coating material for battery separators in heavy duty batteries – as well as a number of different applications in other battery architecture applications.

During the 24-month long qualification process, partners of SAFELOOP, an innovative battery design and development Horizon Europe project, undertook extensive electrochemical, thermal stability, life cycle and safety testing to verify that premiumHPA®-coated separators improved battery performance under demanding and in some cases extreme operating conditions. The ultra-high purity and controlled particle morphology of premiumHPA® enhanced separator heat resistance, reducing shrinkage at elevated temperatures and improving overall cell safety by minimising the risk of thermal runaway. Cadoux's premiumHPA® material was subjected to multiple compatibility and reliability assessments across multiple cell chemistries and manufacturing conditions to ensure long-term performance, safety and consistency which are all critical aspects required for automotive-grade battery applications.

SAFELOOP's qualification and commercial evaluation process for Cadoux's premiumHPA® was a structured 7 step technical assessment as set out below. The process is a lengthy technical and commercial evaluation process undertaken to ensure the HPA consistently meets the performance,

purity and reliability standards required for the SAFELOOP's specific advanced battery manufacturing applications.

In applications such as Li-Ion batteries (but also including LED sapphire substrates, semiconductors and specialty ceramics), HPA is not simply a commodity chemical, it becomes a critical performance material embedded within highly sensitive manufacturing processes. As a result, customers typically require extensive qualification before approving, and committing to, a new supplier for commercial use.

SAFELLOOP's premiumHPA® Qualification Step Summary

The SAFELOOP qualification process included the following steps:

1. Initial Technical Engagement
2. Sample Supply and Product Specification Review
3. Separator / Electrode Coating Formulation Testing
4. Coin Cell, Pouch and Laboratory Battery Testing
5. Pilot Scale Qualification
6. Extended Reliability and Abuse Testing
7. Commercial Qualification and Approved Vendor Status

For Cadoux, qualification is an important de-risking milestone in project development as it validates both the technical capability of the product and the commercial credibility of the company. Successful qualification can lead to offtake agreements, strategic partnerships or long-term supply contracts, particularly where customers are seeking secure supply chains for critical battery and semiconductor materials.



Funded by the
European Union

Qualification Importance

Qualification is regarded as one of the most critical de-risking stages in the commercialisation pathway for HPA. Cadoux was required to demonstrate both ultra-high purity specifications together with repeatability, process stability and scalable manufacturing capability. Having achieved this milestone, Cadoux is positioned as an emerging HPA developer capable of progressing toward commercial supply discussions with other downstream customers.

The market impact of achieving HPA qualification is substantial because it represents a transition from the technical development stage into a potentially credible future commercial supplier. In the HPA sector, qualification is one of the most difficult and time-consuming barriers to overcome due to the ultra-high purity requirements, consistency demands and application-specific performance testing required by downstream customers.

Achieving product qualification materially reduces several key project risks simultaneously including technical, commercial, scale-up and market acceptance risks.

The qualification is particularly important in the emerging western critical minerals supply chain, where downstream manufacturers are actively seeking secure supply sources for battery and advanced technology materials.

The market also understands that HPA qualification is difficult because even trace impurities can materially impact battery safety, semiconductor reliability and sapphire quality. Achieving consistent >4N+ purity at scale is a major technical challenge requiring advanced process control and analytical capability.

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Broader Market Implications

Successful qualification represents a significant commercial and technical milestone for the Company. It confirms the ability of its proprietary flowsheet to consistently produce premium quality HPA suitable for advanced technology applications such as Li-Ion battery applications. It also has broader positive market acceptance implications for use in other applications including semiconductors, sapphire substrates and other high-growth industrial markets.

Qualification milestones are often among the most important value-inflection points for emerging HPA companies. This could lead to:

- increased project financing options
- stronger strategic partner interest
- improved credibility
- potential acceleration toward commercialisation
- increased positioning within rapidly growing HPA markets (ie EV, LED, semiconductor)

SAFELOOP Project

SAFELOOP is a collaborative effort of 15 entities from 11 countries, focused on the development of a safe, sustainable and high-performance Li-Ion battery suitable for gigafactory scale production. Its main objective is to address the growing demand for 735 GWh of battery power for electric vehicles (EVs) in 2026 and 125 million EVs by 2033 through producing a safe, sustainable and robust Gen3 Li-Ion battery with a noticeable recycled content uptake.

The SAFELOOP project is reshaping how batteries for electric vehicles (EVs) are made. Being a member of the Battery2030+ initiative, SAFELOOP is developing innovative key battery components, anodes, cathodes, separators, and electrolytes, using recycled materials provided by its consortium members including Cadoux as the exclusive HPA supplier.

The project aims to increase EV battery lifetime by 15% by 2030, set new safety benchmarks aligned with EUCAR Hazard Level 3 standards for mobility applications, and contribute to Europe's ambitious recycling targets. To achieve this, SAFELOOP is focusing on building a European supply chain, securing raw materials, reducing reliance on imports, and limiting environmental impacts. The goal is to develop the world's first EV battery with the required recycled content and improved recycling rate within a decade. By combining research excellence with industrial know-how, SAFELOOP is paving the way for safer, greener, and more competitive European batteries. The project encompasses all aspects of the battery life, and each individual partner offers unique expertise towards achieving the project's goal.



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Cadoux Managing Director, Mr. Roland Hill commented: "The commercial application of premiumHPA® is no longer in question. Industry has tested it, validated it and accepted it as desirable for commercial use via the successful completion of a comprehensive qualification process. This is a major milestone for the Company and validates both the quality of our product and the strength of our technical development pathway. Qualification is an extensive and demanding process for customers, particularly in high-performance applications where consistency and purity are critical. This achievement significantly advances the commercial positioning of the project and provides strong validation of our process flowsheet, our dedicated technical team and our long-term commercialisation strategy."

Authorised for release by Roland Hill, Managing Director.

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About Cadoux Limited

Through the dual overlays of robust project economics and ESG, Cadoux aims to increase long term shareholder value whilst fostering increasing project sustainability.

Cadoux is an emerging developer of critical minerals projects, focused on two key materials essential for global electrification – high purity alumina (HPA) and rare earth minerals which are key feedstock for rare earth magnets. Cadoux is positioning itself to be a significant producer in both markets to take advantage of growing demand in rapidly developing high-tech product markets and contributing significantly to the global momentum for a decarbonised future.

Both Cadoux's HPA and 'Minhub' projects align strongly with Australia's critical minerals policy by inducing new supply of essential critical minerals and creating value adding, new sovereign supply chains for strategic minerals.

HPA is increasingly becoming the preferred input material for certain high-tech products, principally for its unique characteristics and chemical properties in high specification requirements. Key markets include LEDs and other sapphire glass products, although a longer-term driver for HPA, with forecasts of >33% year-on-year growth (GAGR)*, is the electric vehicle and static energy storage markets where the HPA increases power, functionality and safety when used as a separator material between the anode and cathode in high performance batteries.

An innovative process design by Cadoux has enabled the integrated production of high quality, high purity alumina (HPA) up to 99.999 (5N) purity at robust economically sustainable operating costs. This has been demonstrated through a pilot plant and extensive market studies. Cadoux is now looking to commercially develop that process through a staged development which includes a 1,000tpa small scale production facility in Western Australia followed by a 10,000tpa full scale commercial plant.

Cadoux's HPA strategy has won the backing of State and Federal governments, with Cadoux being the only junior developer with both Western Australian lead agency status and also designated as Major Project Status by the Federal Government.

In the Northern Territory, Cadoux via Minhub Operations Pty Ltd (MOPL), is looking to develop a new supply chain for Australia's emerging rare earths and mineral sands projects through the development of the Minhub Project which will include a mineral separation and rare earths minerals processing facility in Darwin. Through a commercial framework, Minhub aims to process 3rd party mineral concentrate and supply rare earth rich xenotime and monazite mineral products to select markets. This includes potentially supplying customers and interested parties with rare earths enabling a significant increase in the supply of critical magnet feed rare earth metals dysprosium and terbium for key markets such as Electric Vehicles.

* Technavio (2024): Global High Purity Alumina Market 2024-2028