

ASX Announcement ([ASX: AXE](#))

9 January 2026

## Letter to Shareholders

Dear Shareholders,

We start 2026 building on the significant progress we made on our quantum technologies during 2025.

Archer remains the only ASX-listed quantum technology company, and this distinction continues to shape our strategic focus. Quantum technology sits at the frontier of advanced science, with the potential to fundamentally redefine how information is processed, secured and understood. However, significant manufacturing and scalability challenges remain, particularly in quantum computing, that must be overcome before these technologies can be deployed in real-world environments.

Our strategy is centred on addressing these challenges directly. For quantum computing to become practical, devices must maintain stability, be manufacturable, and integrate with existing infrastructure. Archer's carbon-based quantum technology is designed specifically to overcome these barriers. This approach underpins our objective to develop quantum hardware that is not only powerful, but also manufacturable and commercially viable.

At the end of 2025, we achieved a key milestone on our roadmap to qubit demonstration by showing electrical gating within its quantum single electron transistor (SET) devices, boosting readout (the output of quantum information) capabilities. This result built on our previous work demonstrating considerable progress in our goal to have a functional qubit in early 2026.

Demonstrating electrical gating using these materials significantly de-risks the readout pathway for Archer's quantum carbon films. Importantly, the carbon films are being developed to be manufacturable and compatible with conventional chip making processes and positioning the technology for future scalability.

Qubit operation requires control of electron spins and in 2025 we improved the electron spin lifetime of our novel manufacturable quantum carbon film to 800 ns (nanosecond), up from 385 ns, and the films' reproducibility from sample to sample. In addition to showing an increased spin lifetime, we successfully demonstrated qubit control by designing new resonator circuits.

Alongside quantum computing, Archer continues to advance quantum sensing technologies built on the same platform. These sensors are designed to deliver exceptional precision, with potential applications across artificial intelligence, defence, navigation, diagnostics and other advanced markets.

Last year we commenced our first Quantum Machine Learning (QML) project designed to detect fraud in financial transactions. The project will run throughout 2026 with initial outcomes including prototype quantum models and performance benchmarks across simulated financial datasets. Hybrid quantum-classical machine learning models that adapt classical neural network architectures for quantum computing can enable applications beyond fraud detection. It is conceivable that the technology can be adapted for other applications.

In parallel, Archer has made significant progress with its Biochip program. When commercialised, it has the potential to transform kidney care and address a critical global healthcare need.

During 2025 we made significant improvements in measuring the accuracy of potassium levels in blood. The Archer team has regularly achieved potassium measurement precision within  $\pm 0.3$  mM/L, in alignment with Clinical Laboratory Improvement Amendments (CLIA) requirements for equivalent testing in a pathology lab.

Working with leading partners such as Interuniversity Microelectronics Centre (IMEC), Archer is developing the Biochip on silicon and graphene to ensure scalability and manufacturability, while also laying the foundation for broader diagnostic applications. Archer advanced the technology toward manufacturable prototypes, achieving clinical and performance benchmarks for potassium sensing in blood. These results demonstrate that the Biochip is not only functional in laboratory conditions but is also meeting the standards required for future healthcare deployment.

Looking ahead, we enter 2026 with a clear and disciplined commercial roadmap. Each of our core programs is progressing in parallel from proof-of-concept toward product demonstrations and commercial partnerships.

This year, we are targeting demonstration of our carbon-based qubit architecture, an important step that will validate the real-world potential of our quantum computing approach. Furthermore, this demonstration is the critical step in establishing commercial partnerships.

Within the Biochip program, we remain on track to deliver a laboratory demonstrator for blood potassium sensing, followed by a working prototype - key for moving into external trials. We will also be working on expanding the platform to support next-generation biosensors capable of detecting additional biomarkers for other applications.

During 2026, Archer aims to be demonstrating our core technologies in real-world settings, marking a significant inflection point as the Company transitions from research-led development to active commercial engagement.

I would like to thank our shareholders for their continued confidence in Archer's vision. The Board and management take this responsibility seriously and remain fully committed to building a company capable of delivering meaningful and sustainable value as our technologies mature.

We are confident in Archer's strategic direction, technical roadmap and ability to execute. The year ahead will bring further milestones, and we look forward to keeping you informed as we continue to build the foundations for long-term growth.

Yours sincerely,

Simon Ruffell, CEO

**Archer Materials Limited**

The Board of Archer authorised this announcement to be given to ASX.

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**About Archer**

Archer is a quantum technology company that operates within the semiconductor industry. The Company is developing advanced semiconductor devices, including chips relevant to quantum computing, sensing, and medical diagnostics. Archer utilises its global partnerships to develop these technologies for potential deployment and use across multiple industries.  
[www.archerx.com.au](http://www.archerx.com.au)