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ASX Announcement (ASX: **AXE**) 11 September 2025

Investor Presentation – September 2025

Archer Materials Limited ("Archer", the "Company", "ASX: AXE") is pleased to enclose a copy of the Company's updated Investor Presentation.

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

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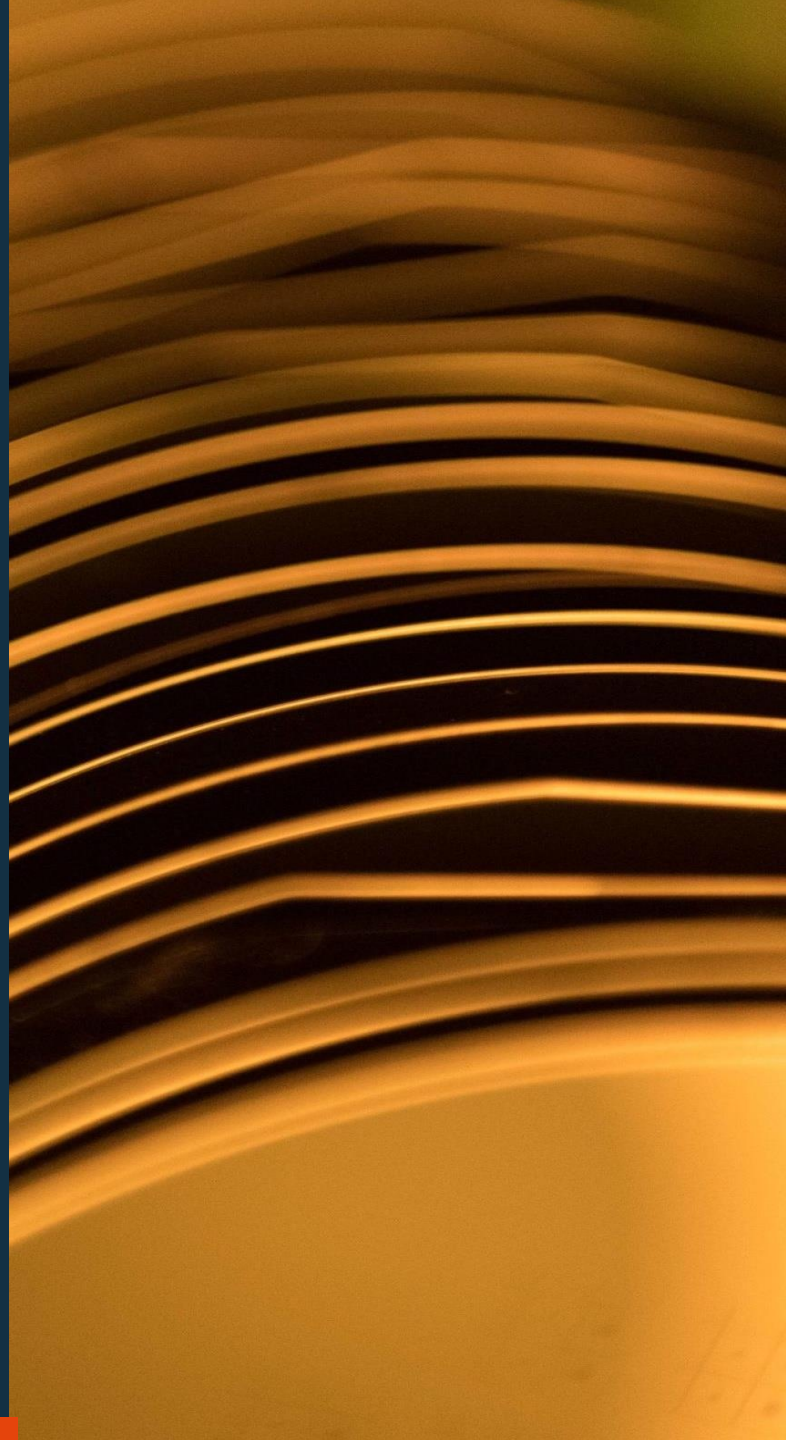
About Archer

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

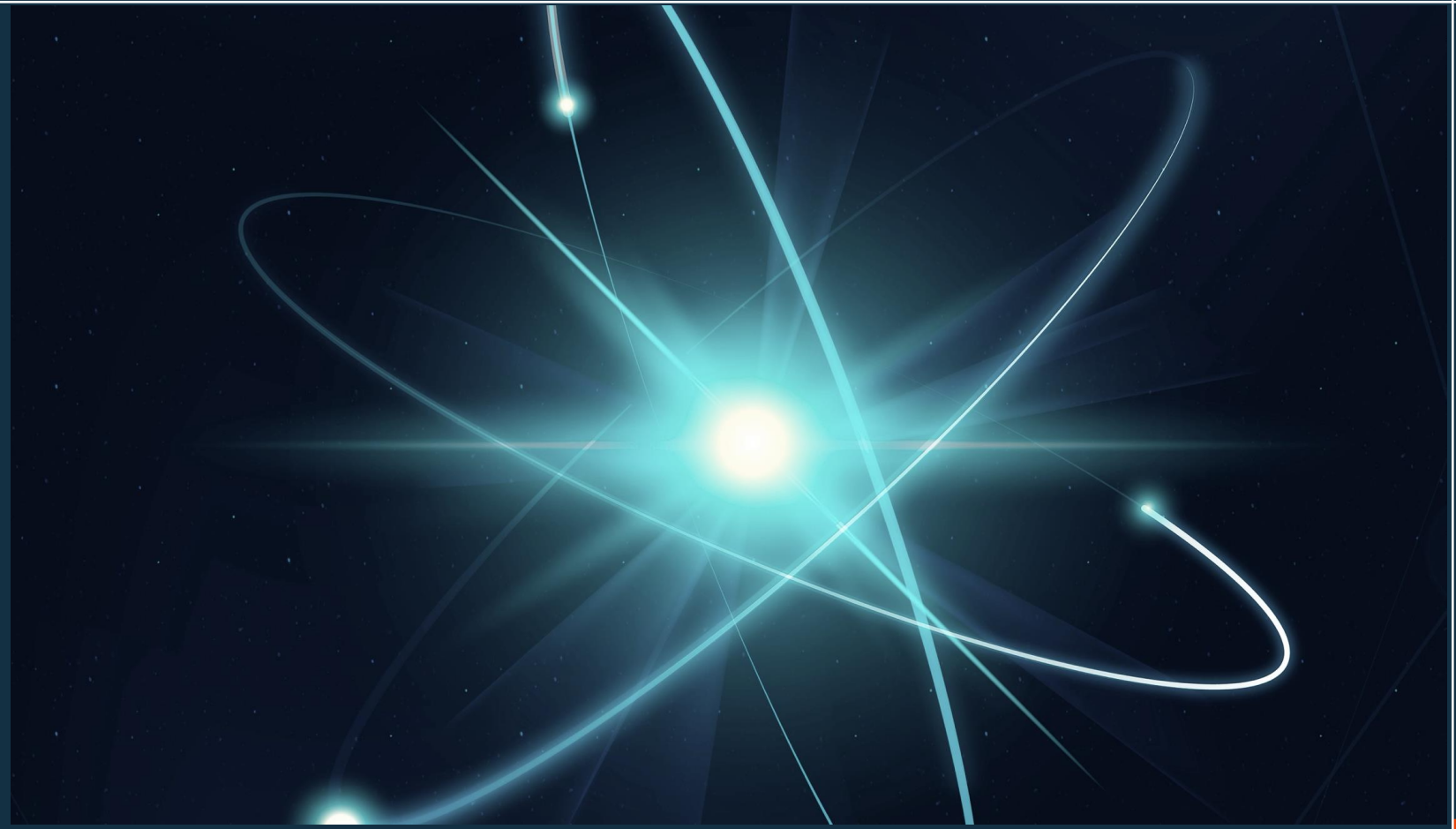
ARCHER

Investor Presentation

September 2025



Company Overview



01

Our Foundations

Archer has the foundations in place to advance its quantum technology towards commercialisation in global markets.

Future technologies

Archer's devices look to solve high value problems using quantum technology.

Strong partnerships

Strong industry partnerships and links with leading research institutes.

Growing markets

Archer's technologies have a range of applications across growing markets such as medical diagnostics, quantum computing & sensing, and massive data like AI.

IP portfolio

A growing IP portfolio of granted and pending patents across key markets such as North America, APAC, and Europe.

ABOUT ARCHER

Corporate Snapshot

Founded in 2007, Archer Materials (ASX:AXE) is developing unique semiconductor technology to solve critical problems in quantum tech and bio electronics, helping unlock transformations across industries, economies and healthcare – and improve millions of lives.

ASX Code: **AXE**

255m
Shares on issue

$0.27
Share price (9 Sep 2025)

$70m
Market capitalisation

Nil
Debt

$14m
Cash (30 Jun 2025)

21%
Top 20 shareholders

2025 Operational Highlights

^{12}CQ Chip

- Achieved key milestones towards qubit demonstration
  - Demonstration single electron isolation (for readout) through Coulomb blockade.
  - Demonstrated electron spin coupling to micro-resonators (for control)
  - Increased spin coherence times at room temperature

Biochip

- Integrated Archer's proprietary biosensor technology with CMOS readout circuity
- Entered partnerships with leading development institutes to productise the biosensor e.g. IMEC
- Significant progress in demonstration of required potassium sensing accuracy

Advanced Sensing

- Commenced identifying opportunities for TMR sensor use across a range of industries

Corporate

- Appointment of Dr Simon Ruffell as CEO in March 2025

Our Technology

Archer Materials is the only ASX-listed quantum technologies company. We are developing products to address high-value problems in computing, sensing, and medical markets.

^{12}CQ Chip

A carbon-based quantum device for applications primarily in computing and the possibility of integrating with other electronics.

✓ Qubit demo 1HCY26

Biochip

Highly sensitive, chip-based sensors for at-home management and treatment of chronic diseases.

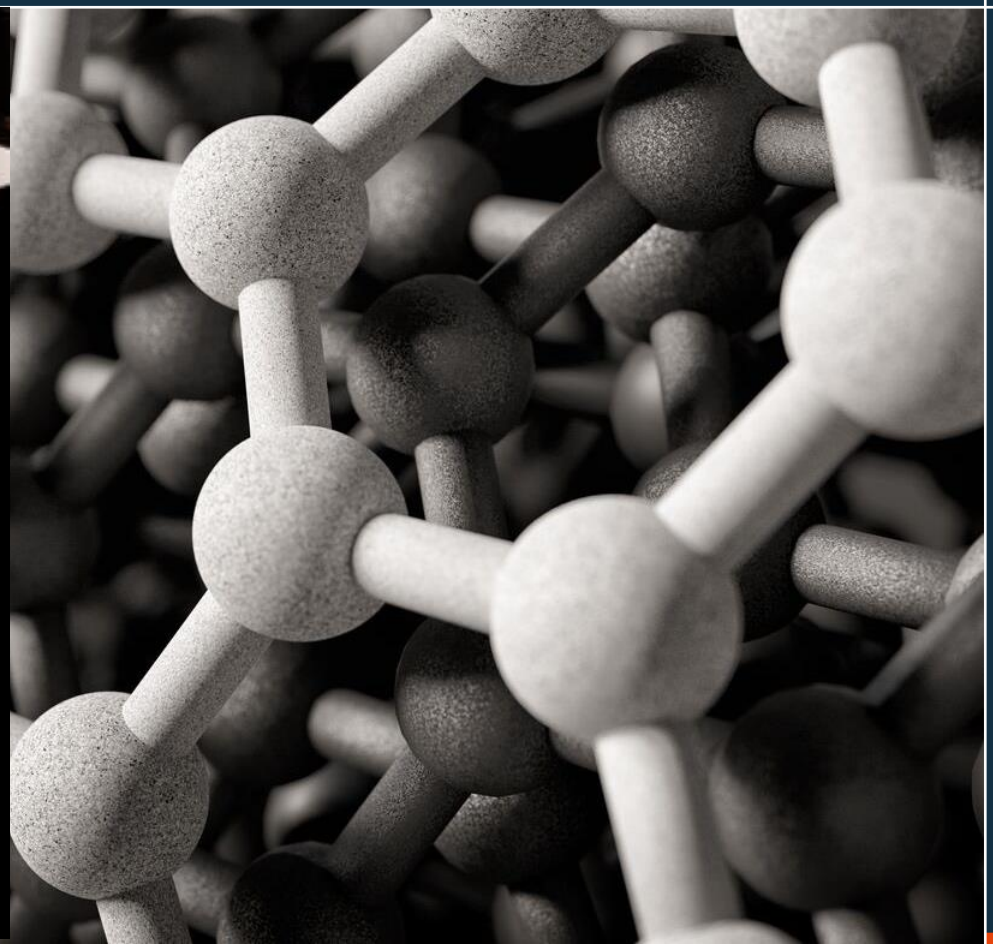
✓ Lab demo end of CY2025

Advanced Quantum Sensing

Highly sensitive sensors. Wide range of applications.

✓ Identification of application end of CY2025

Quantum Compute and Sensing



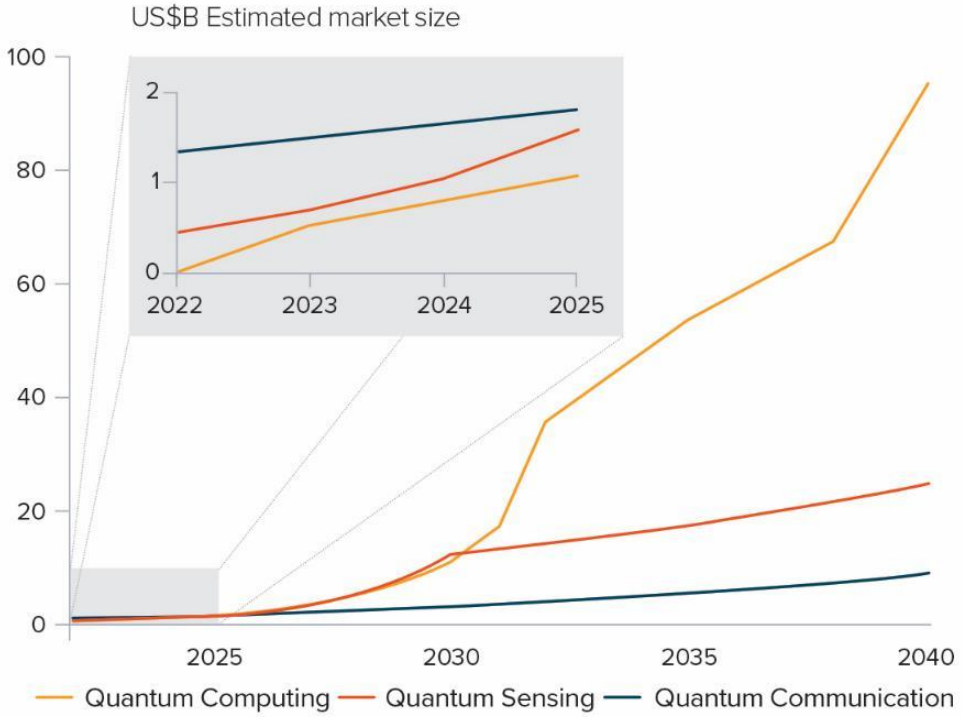
02

Quantum Technology: The Next Frontier

Archer considers quantum technology to be the next great technological advance.

- Archer is the only ASX-listed quantum company.
- Adoption of quantum tech expected to increase with quantum hardware maturity.
- Quantum computing and sensing is expected to rapidly increase in share of total quantum value.
- US$30B market by 2030.

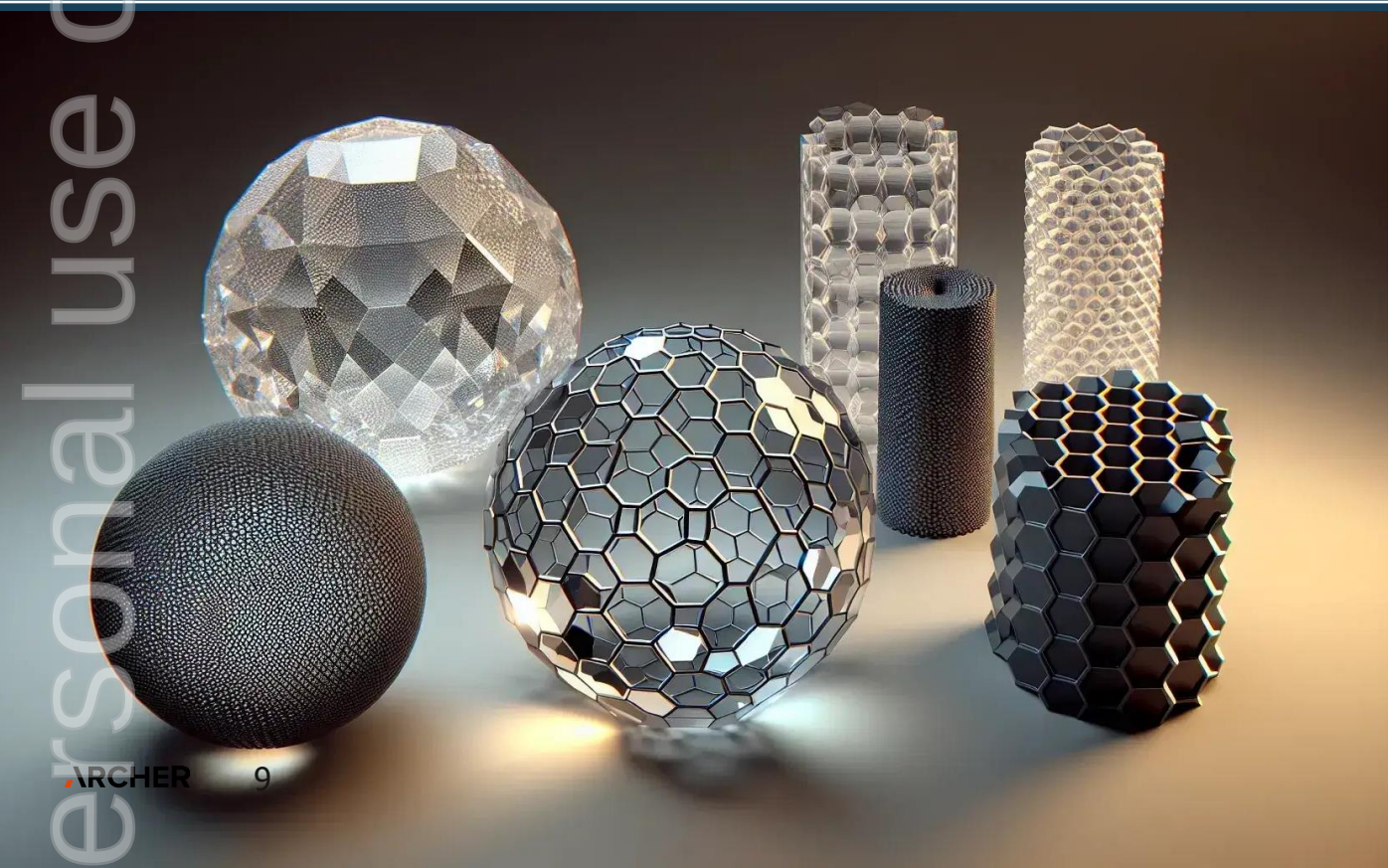
Quantum Technology Market Growth Projections 2025-2040

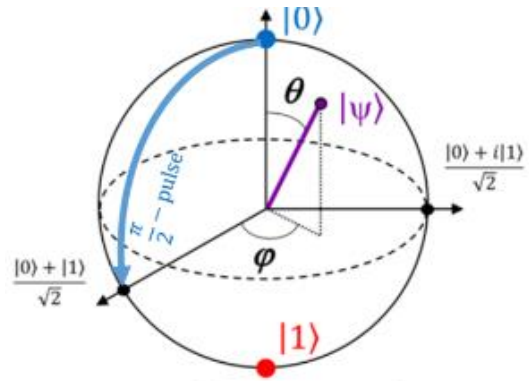


Sources:
BCG analysis
Krelina, "Quantum technology for military applications" EPJ Quantum Technology (2021); IBM quantum roadmap; IonQ quantum roadmap

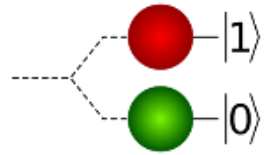
Quantum Computing

Quantum computing via qubits made in Archer's novel carbon





$$|\psi\rangle = \cos\frac{\theta}{2}|0\rangle + e^{i\varphi}\sin\frac{\theta}{2}|1\rangle$$



1010
1010

Classical, Digital bit
Either 0 or 1

Computers solve problems in a sequential fashion

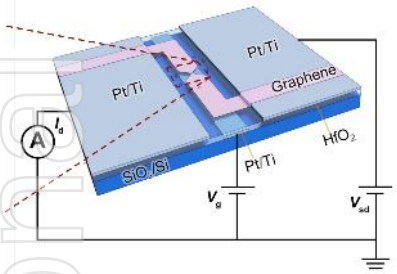
Quantum Qubit
0 and 1 at the same time

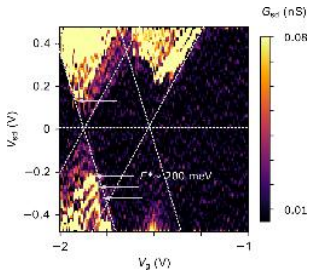
Computers solve problems by evaluating solutions simultaneously

Status of Archer Qubit Development

01

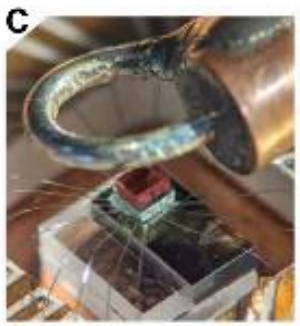
(Confinement i.e. isolation of a single electron spin)

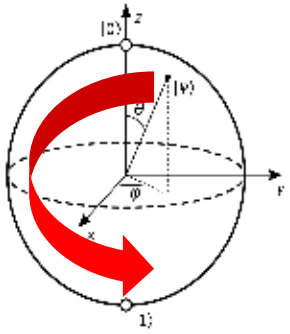




02

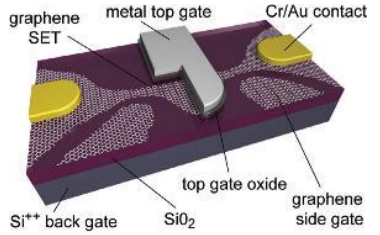
(Control (Global/Local))

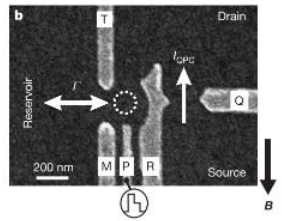




03

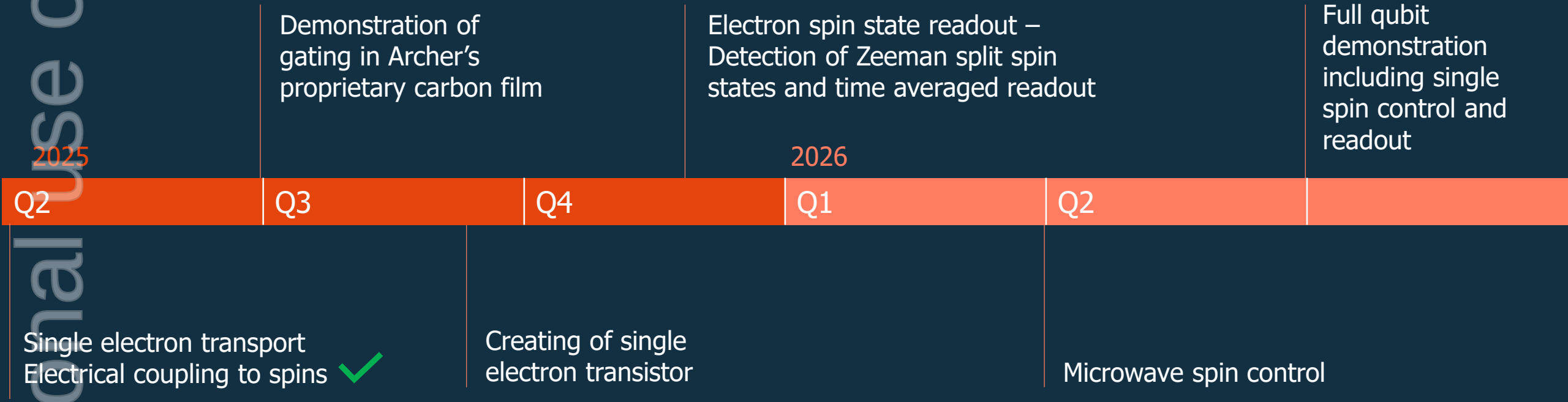
(Readout (device built around graphene single electron transistor))





Qubit Roadmap

Work will be extended on devices built around nanodots of carbon. Targeting a qubit architecture demonstration in 2026.



Quantum Strategy

	2026+	2027+	2029+	
Qubit demo	Development & demonstrate technical entitlements	Scaleup → >1 qubit	Demonstrating utility at increasing temperature	Room temperature demo of useful machine

- Drive technology development to increase licensing opportunities
- Leverage learning to develop nearer-term opportunities e.g. quantum sensing

1 qubit	10 qubits	100 qubits	1k qubits	10k qubits	1M qubits
• Quantum sensing	• Improved sensing and QRNG • Classical-assisted Monte Carlo simulations • Non-quantum advantaged compute	• Classical assisted quantum algorithms (e.g. VQE)	• Classical-assisted machine learning	• Quantum network applications • (e.g. transmitting quantum information)	• Advanced search Optimisation • Machine learning and AI • Materials research, chemical simulation

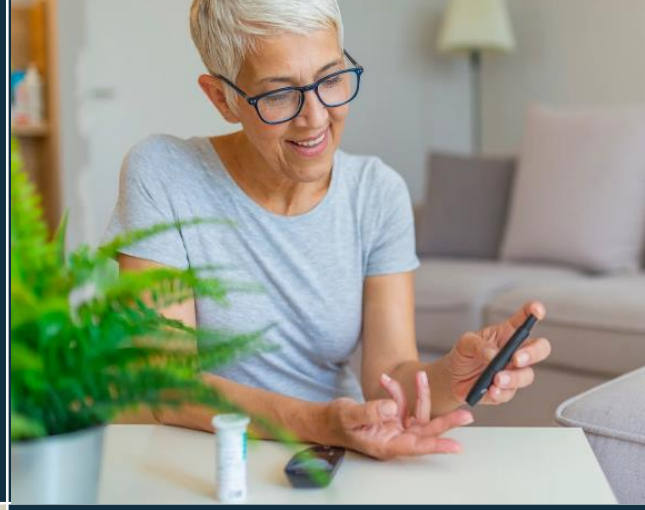
Tapping into Growing Quantum Sensor Market

- Overseas foundry developing TMR sensor with Archer for industrial applications.
- TMR sensors have applications in AI, data centers, automotive, and IoT implementation.
- TMR leverages quantum phenomena to provide a performance edge over classical incumbents.
- Part of Archer's ^{12}CQ project, leveraging expertise in quantum mechanics to design advanced TMR sensors.
- We have been investigating potential applications, partners, and potential customers.

2025 To identify a lead application and build product development strategy.

2026 Protype and go-to-market strategy development.

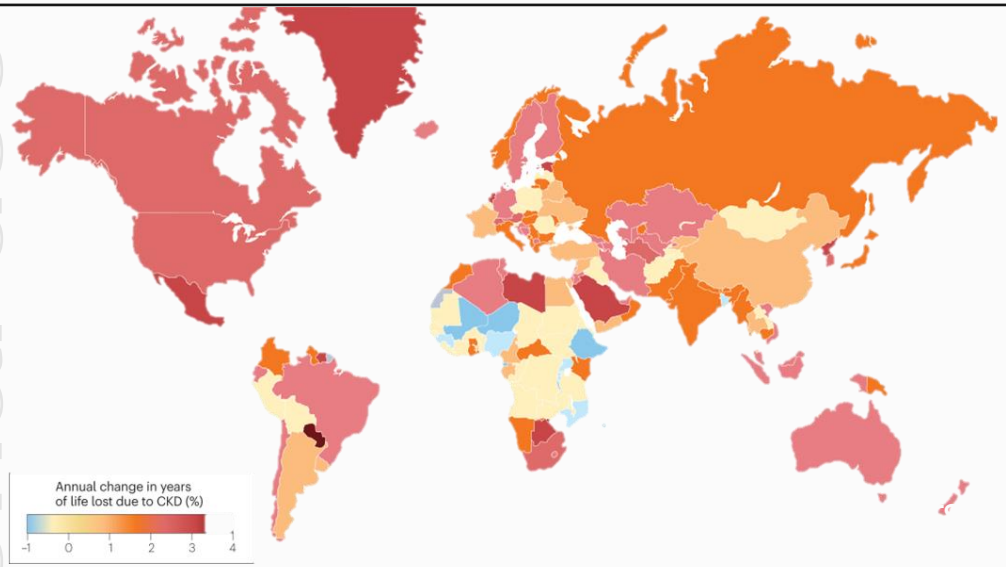
BioChip



03

High-Value Problem

Archer's biochip uses highly sensitive, high speed, low power sensors to detect ions in blood. The chip will be integrated into an at-home testing system that will analyse a finger prick of blood.



4% annual increase

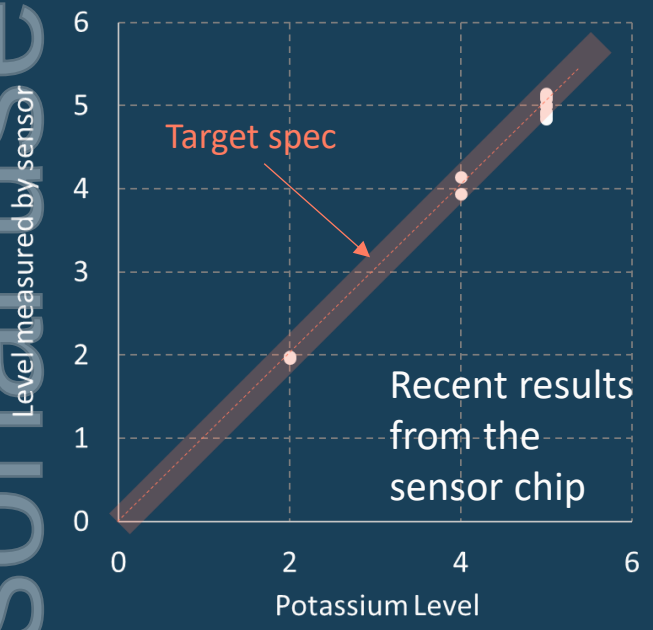
1. Kidney Health Australia (https://kidney.org.au/kidney-check heart-diabetes-blood-pressure)
2. Yole "Biosensors Marketing Report 2024-32", Market Research Future "Renal Disease Market Report". Bottom-up estimate using refs above

- Over 850M people (>10% of global population) suffer from chronic kidney disease (CKD).
- More than US$3B total addressable market within the US$80B+ renal disease space.
- Kidney disease patients are at high risk of lethal potassium imbalances (kidneys regulate electrolytes) → Hyperkalemia.
- Potassium testing is lab-based, monthly, and too infrequent for timely intervention.
- Extendable to heart disease and treatment.
- Extendable to more applications in medicine, industrial, and agriculture.

Our Solution: Archer Potassium Test

The first of its kind

Built to prevent life-threatening cardiac events.



Concept Image

Potassium Sensor

Chip - Highly sensitive, fast response, low power

Haemolysis Sensor

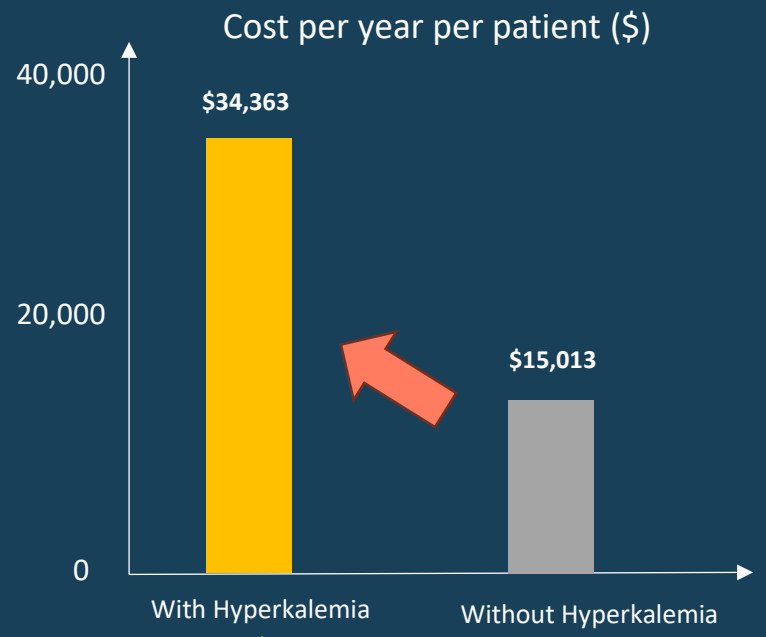
Eliminates false positives from blood cell rupture

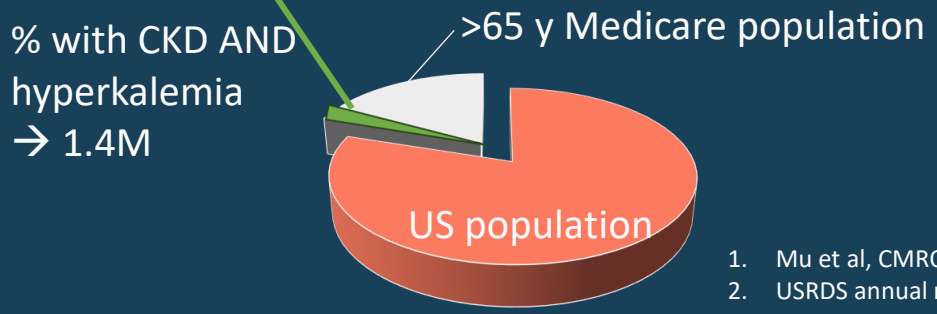
Accessible

Simple at-home testing, even in rural or remote areas

Value Proposition (US Medicare Population)

- **The Problem**: CKD patients with hyperkalemia drive billions in preventable costs (>$15k per patient, >$30B total).
- **The Gap**: No convenient, fast, low-cost potassium testing exists today.
- **The Opportunity**: Our portable tester enables early detection → fewer admissions → significant savings.
  - $1 to $10B savings from the >$30B current burden.
  - $50 to $1000 per year per patient cost vs >$15,000





1. Mu et al, CMRO (2020)
2. USRDS annual report

At-home Potassium Sensor - Roadmap

Phase gate development process for a diagnostic medical device regulated under ISO13485

Proof of concept	Feasibility	Development & Optimisation	Scale up & transfer to manufacturing	Verification & validation	Launch

2025

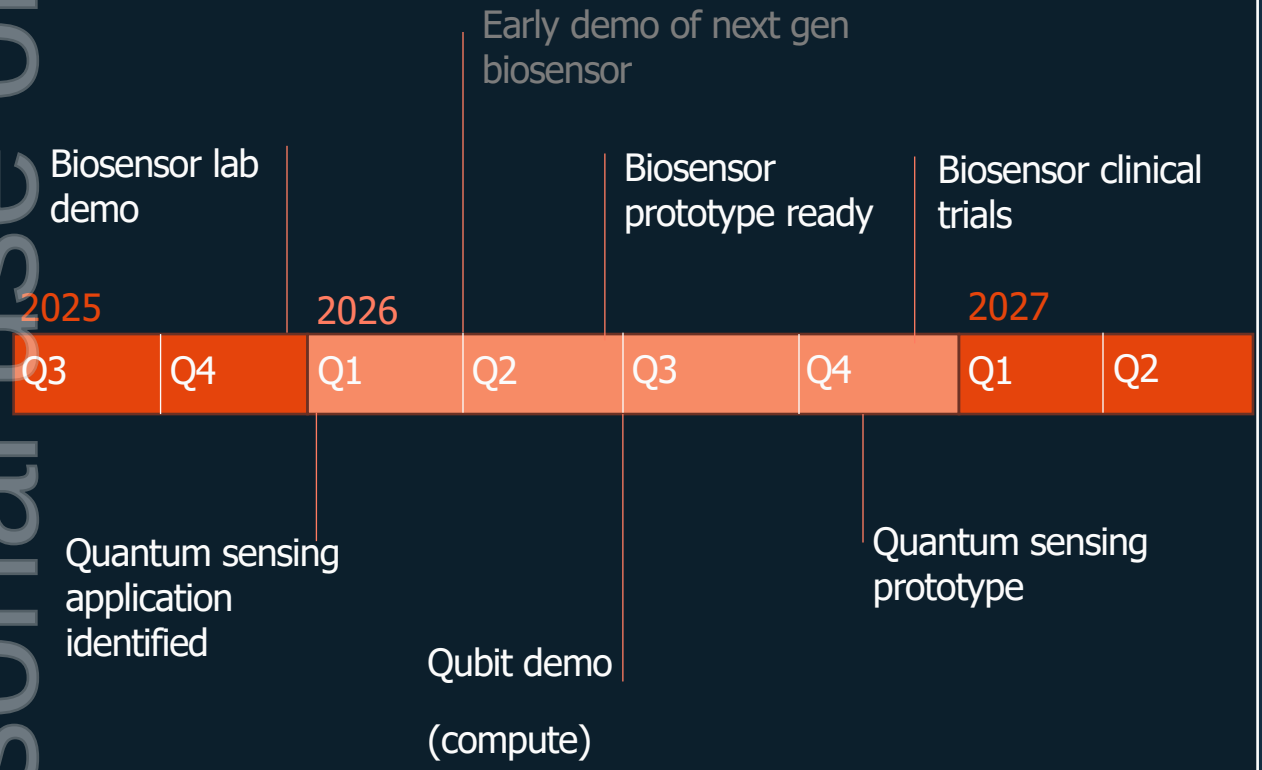
- Work ramping up in Sydney, towards Archer's 1st prototype.
- Building strategic partnerships: medical diagnostics companies, academic groups, product development consortia.
- Building access to clinical advisors, potential trial locations.
- Developing regulatory and product placement/use-case strategy.

Target of lab prototype in 2026. Develop regulatory and product placement plan.

Archer aiming to begin clinical trials in by end of 2026.

Key Catalysts and Outlook

Calendar years to 2027



- Lab demonstrator of blood potassium sensor end of 2025
- Blood potassium prototype sensor mid-2026
- End of 2026 begin clinical trials for blood potassium sensor
- Targeting quantum sensing application and market validation end of 2025 (TMR, carbon)
- Work to begin on development of next generation biosensor from R&D – early 2026
- Carbon-based quantum qubit demonstration mid-2026 (computing)

Thank you

ASX Code: AXE

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

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Our Board

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What our stakeholders say

"If I've just had a banana or taken a potassium binder, I want to know — right then — what my potassium level is. That peace of mind is priceless."

- CKD Patient Advocacy Group

"A rapid at-home potassium testing device would be very much welcome and much needed in this space."

- Physician, Harvard Medical School

"The costs of chronic disease management are spiraling. All simple, cost-effective strategies must be employed, as exemplified by Archer."

- Primary Care Specialist, NSW

Archer's Carbon Qubit - Scorecard

	Spin Qubits				Other		
	Archer carbon	**Si (donar)**	**NV centre**	**Si (QD)**	**Superconducting**	**Trapped Ion**	**Photonic**
2-qubit gate fidelity	TBD	99.8 %	99.9 %	99.9 %	99.9 %	99.9 %	99 %
Scalability	▲ High	▼ Challenging (single atom placement)	▼ Many challenges	▲ High	▼ Some challenges, large footprint	▼ Laser systems	Hard 2 qubit ops
Coherence	▲ ~1us (>1 ms theory)	▲ 0.5s	▲ 100us – 1ms	▲ 100us – 1ms	▲ 50-100 us	▲ Up to 1s	▲ Very high
CMOS compatibility	▲ Good	▲ Good	▼ Challenging	▲ Good	Some challenges	▼ Difficult	▲ Good

Archer's carbon-based qubits have excellent technical entitlements and can be a quantum computing enabler

Disclaimer

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This presentation contains information which was reported in ASX announcements lodged between 1 October 2017 and 13 February 2024 (together the "Announcements"). All material assumptions and technical parameters set out in the Announcements continue to apply and have not materially changed. The Announcements can be viewed online at www.archerx.com.au.

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