

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

11 August 2021

## Chinese patent granted for <sup>12</sup>CQ quantum computing chip

### Highlights

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- Major commercial milestone reached with the grant of a patent protecting the <sup>12</sup>CQ quantum computing chip in the world's second largest economy.
  - Chinese patent for the <sup>12</sup>CQ chip is a significant validation of the technology's industrial and technical global competitive advantage.
  - China has over 2.6 million patents in force, second only to the US, with foreign patent applications mostly from the US, making China one of the biggest innovation economies in the world.
  - Archer is the only ASX listed company and one of a few players in the world developing a qubit processor chip in the quantum computing industry<sup>†</sup>.
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Archer Materials Limited ("Archer", the "Company", "[ASX: AXE](#)") is pleased to announce the granting of a Chinese patent ("CN Patent") associated with Archer's <sup>12</sup>CQ quantum computing chip technology ("<sup>12</sup>CQ chip").

The CN Patent (Patent No. 4606612) represents a major commercial milestone in Archer's development of the <sup>12</sup>CQ chip. The grant of the CN Patent is a significant step in the Company's efforts to access global markets. Patent protection in China is required for any future commercial operations in China, while giving Archer access to the world's second largest economy to exploit IP rights related to the <sup>12</sup>CQ chip.

The CN Patent application successfully underwent substantive examination procedures in China by the Chinese Patent Office<sup>‡</sup>, which has over 2.6 million patents in force<sup>§</sup>, second only to the US (3.1 million), making China one of the biggest innovation economies in the world.

The Company considers China as a critical strategic jurisdiction to protect and commercialise its IP<sup>\*\*</sup>. China has the world's largest population and market size, with over half a billion people using mobile devices in an economy that is transitioning from a low-cost manufacturer to a consumer of technology incorporating AI, autonomous systems, and blockchain<sup>††</sup>.

In the commercialisation of Archer's <sup>12</sup>CQ chip, the Company will look to use existing chip manufacturing facilities to build the <sup>12</sup>CQ chip. Most of the world's chip manufacturing takes place in Asia. Archer must have patent protection in the relevant countries if the Company wants to utilise these chip manufacturing plants in the future.

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<sup>†</sup> IBM Quantum Network: <https://www.ibm.com/quantum-computing/network/members/>

<sup>‡</sup> China National Intellectual Property Administration: <https://english.cnipa.gov.cn/>

<sup>§</sup> World Intellectual Property Indicators 2020: [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_941\\_2020.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2020.pdf)

<sup>\*\*</sup> World Economic Forum: <https://www.weforum.org/reports/global-technology-governance-report-2021>

<sup>††</sup> World Economic Forum: China: Dynamic Briefing. Generated for Dr Mohammad Choucair, Archer Materials.

China has named investment in semiconductors as one of its seven key priorities in its five year economic plan, with the country committing to spend more than US\$1.3 trillion on high-tech industries with a particular focus on semiconductors. Archer will need patent protection if the Company is to participate in the growing Chinese semiconductor industry.

Significant patenting activity in China continues to grow, with the largest in-flow of non-resident patent applications coming from the US, Japan, Korea, and Germany. China is currently the third most sought after patent office behind the US and European patent offices.

**Commenting on the grant of the Chinese patent, Archer CEO Dr Mohammad Choucair said:** “Archer’s quantum computing chip IP is now protected in China – the largest market in the world, a major global economy, and powerhouse consumer of mobile technology. The grant of a patent in China further protects, validates, and substantially derisks, our unique technology.

“To realise the full commercial benefits of the <sup>12</sup>CQ technology globally, Archer’s IP strategy includes patent protection in China. This is in line with the key commercialisation activities of the biggest semiconductor chip manufacturers from the US, EU, and Asia.

“Archer is one of few companies in the world with a patent portfolio protecting quantum computing chip technology. Archer’s global competitive advantage is difficult to erode, especially in such a revolutionary industry with significant barriers to entry”.

#### **<sup>12</sup>CQ is a world-first quantum computing processor chip technology**

The patent granting process and procedures for the additional five international patent applications in the jurisdictions of Australia, Hong Kong, Europe, and the US, continue to progress.

#### **About Archer**

Archer is a technology company that builds advanced semiconductor devices, including processor chips that are relevant to quantum computing. Archer’s <sup>12</sup>CQ chip is a world-first qubit processor technology that would allow for mobile quantum computing powered devices. For more information, please view Archer’s [webinar](#) with IBM.

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

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