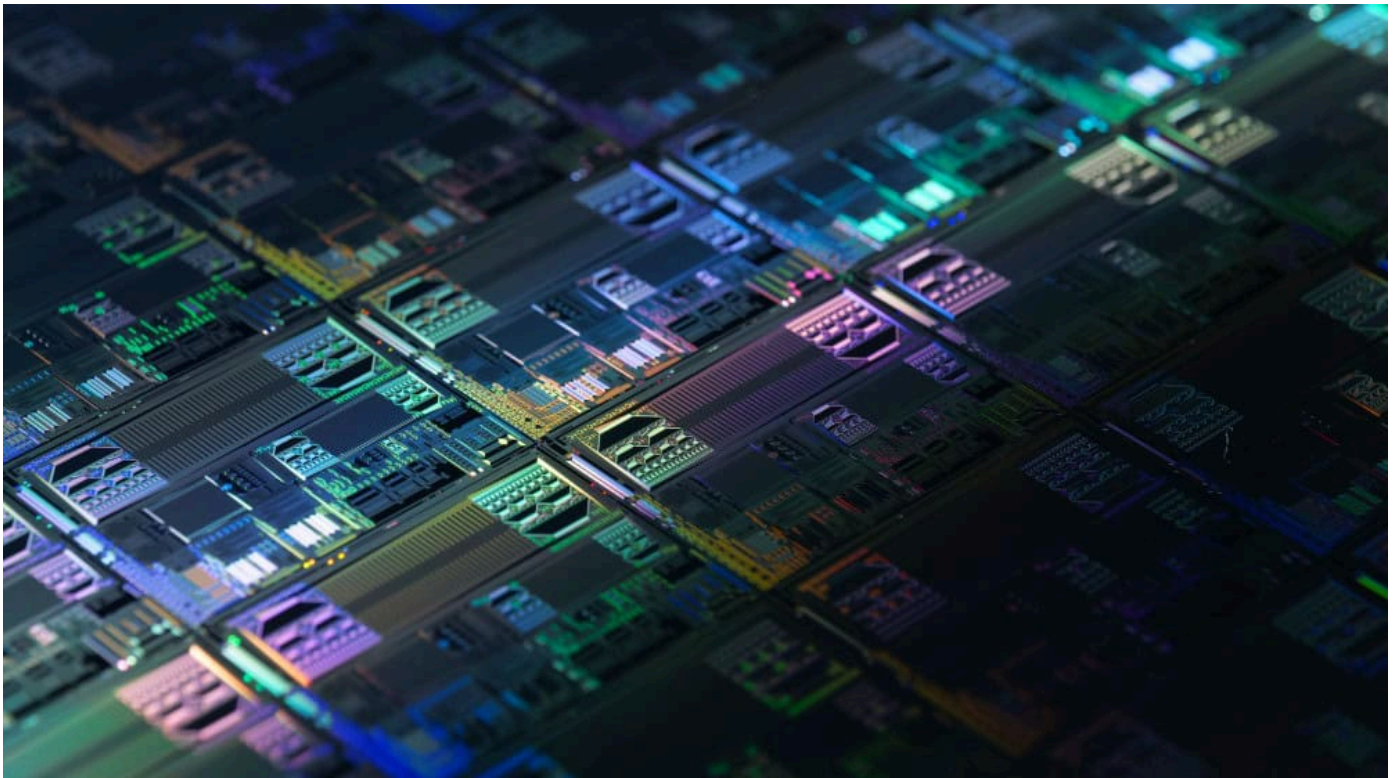


## physicsworld

QUANTUM | NEWS

### Australia raises eyebrows by splashing A\$1bn into US quantum-computing start-up PsiQuantum

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**Bold bet:** The investment from the Australian government makes PsiQuantum the world's highest funded independent quantum company (courtesy: PsiQuantum)

The Australian government [has controversially announced](#) it will provide A\$940m (£500m) for the US-based quantum-startup [PsiQuantum](#). The investment, which comes from the country's National Quantum Strategy budget, makes PsiQuantum the world's most funded independent quantum company.

Founded in 2015 by five physicists who were based in the UK, PsiQuantum aims to build a large-scale quantum computer by 2029 using photons as quantum bits (or qubits). As photonic technology is silicon-based, it benefits from advances in large-scale chip-making fabrication and does not need as much cryogenic cooling as other qubit platforms require.

The company has already reported successful on-chip generation and the detection of single-photon qubits, but the technique is not plain sailing. In particular, optical losses still need to be reduced to sufficient levels, while detection needs to be more efficient to improve the quality (or fidelity) of the qubits.

Despite these challenges, PsiQuantum has already attracted several supporters. In 2021 private investors gave the firm \$665m and in 2022 the US government provided [\\$25m to both GlobalFoundries and PsiQuantum](#) to develop and build photonic components.

The money from the Australian government comes mostly via equity-based investment as well as grants and loans. The amount represents half of the budget that was allocated by the



government last year to [boost Australia's quantum industry over a seven-year period until 2030](#).

The cash come with some conditions, notably that PsiQuantum should build its regional headquarters in the Queensland capital Brisbane and operate the to-be-developed quantum computer from there. Anthony Albanese, Australia's prime minister, claims the move will create up to 400 highly skilled jobs, boosting Australia's tech sector.

### A bold declaration

[Stephen Bartlett](#), a quantum physicist from the University of Sydney, welcomes the news. He adds that the scale of the investment "is required to be on par" with companies such as Google, Microsoft, AWS, and IBM that are investing similar amounts into their quantum computer programmes.

[Ekaterina Almasque](#), general partner at the venture capital firm OpenOcean, says that the investment may bring further benefits to Australia. "The [move] is a bold declaration that quantum will be at the heart of Australia's national tech strategy, firing the starting gun in the next leg of the race for quantum [advantage]," she says. "This will ripple across the venture capital landscape, as government funding provides a major validation of the sector and reduces the risk profile for other investors."

### Open questions

The news, however, did not please everyone. [Paul Fletcher](#), science spokesperson for Australia's opposition Liberal/National party coalition, criticises the selection process. He says it was "highly questionable" and failed to meet normal standards of transparency and contestability.

"There was no public transparent expression of interest process to call for applications. A small number of companies were invited to participate, but they were required to sign non-disclosure agreements," says Fletcher. "And the terms made it look like this had all been written so that PsiQuantum was going to be the winner."

Fletcher adds that is is "particularly troubling" that the Australian government "has chosen to allocate a large amount of funding to a foreign based quantum-computing company" rather than home-grown firms. "It would be a tragedy if this decision ends up making it more difficult for Australian-based quantum companies to compete for global investment because of a perception that their own government doesn't believe in them," he states.

[Kees Eijkel](#), director of business development at the quantum institute QuTech in the Netherlands, adds that it is still an open question what "winning technology" will result in a full-scale quantum computer due to the "huge potential" in the scalability of other qubit platforms.

Indeed, quantum physicist Chao-Yang Lu from University of Science and Technology of China [took to X](#) to note that there is "no technologically feasible pathway to the fault-tolerant quantum computers PsiQuantum promised" adding that there are many "formidable" challenges".

Lu points out that PsiQuantum had already claimed to have a working quantum computer by 2020, which was then updated to 2025. He says that the date now slipping to 2029 "is [in] itself worrying".

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