QUANTUM SOURCE

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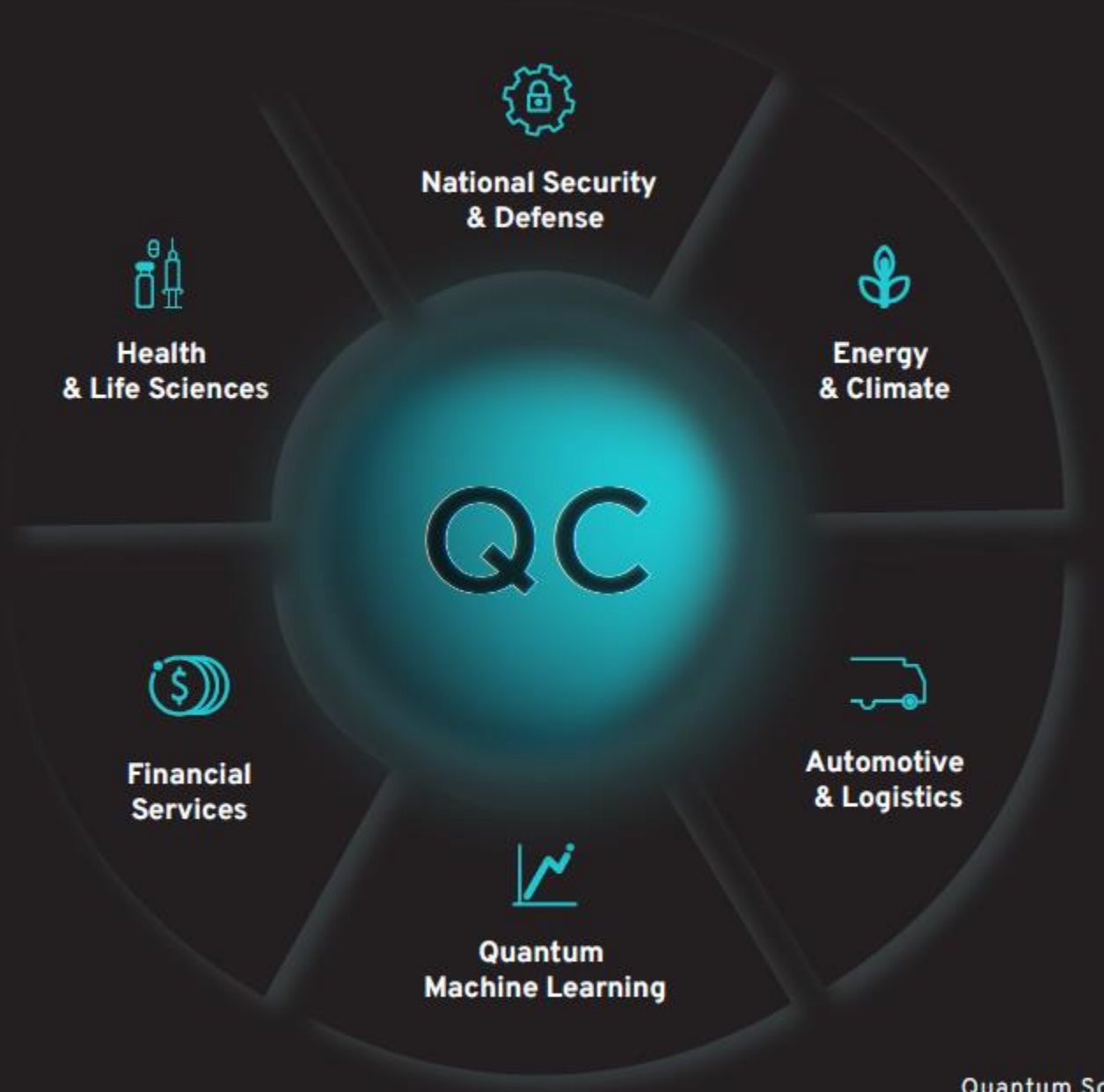
Making Photonic Quantum Computation Scalable using single Atom

The Next
Economic Frontier

Early quantum advantage
will come in 6 key sectors



Source: McKinsey & Co - Quantum Technology Monitor, Apr 2023

Large-scale, fault tolerant QC are needed to solve meaningful problems

RSA

Breaking RSA

30 million qubits (6,000 perfect qubits)

Molecule Simulation

5 million qubits (1,000 perfect qubits)

Derivative Pricing

37 million qubits (7,500 perfect qubits)

Perfect qubit = logical qubit with error rate that is better than 10-15

Leading candidate technologies for QC

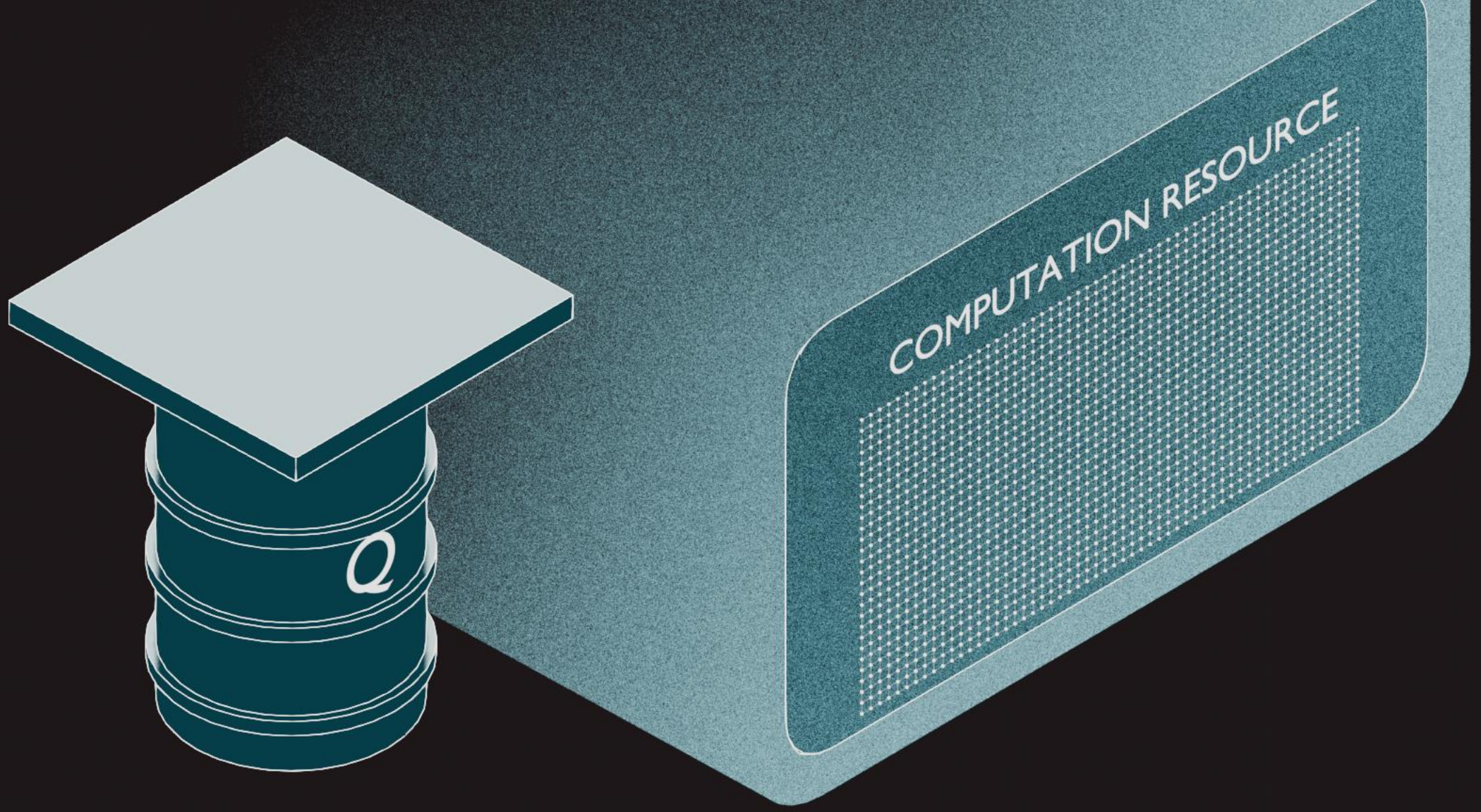
(Google, IBM, Rigetti...) (IonQ, Quantinuum...) (Quera, Atom Computing...) (Quera, Atom Computing...)

Matter Qubits

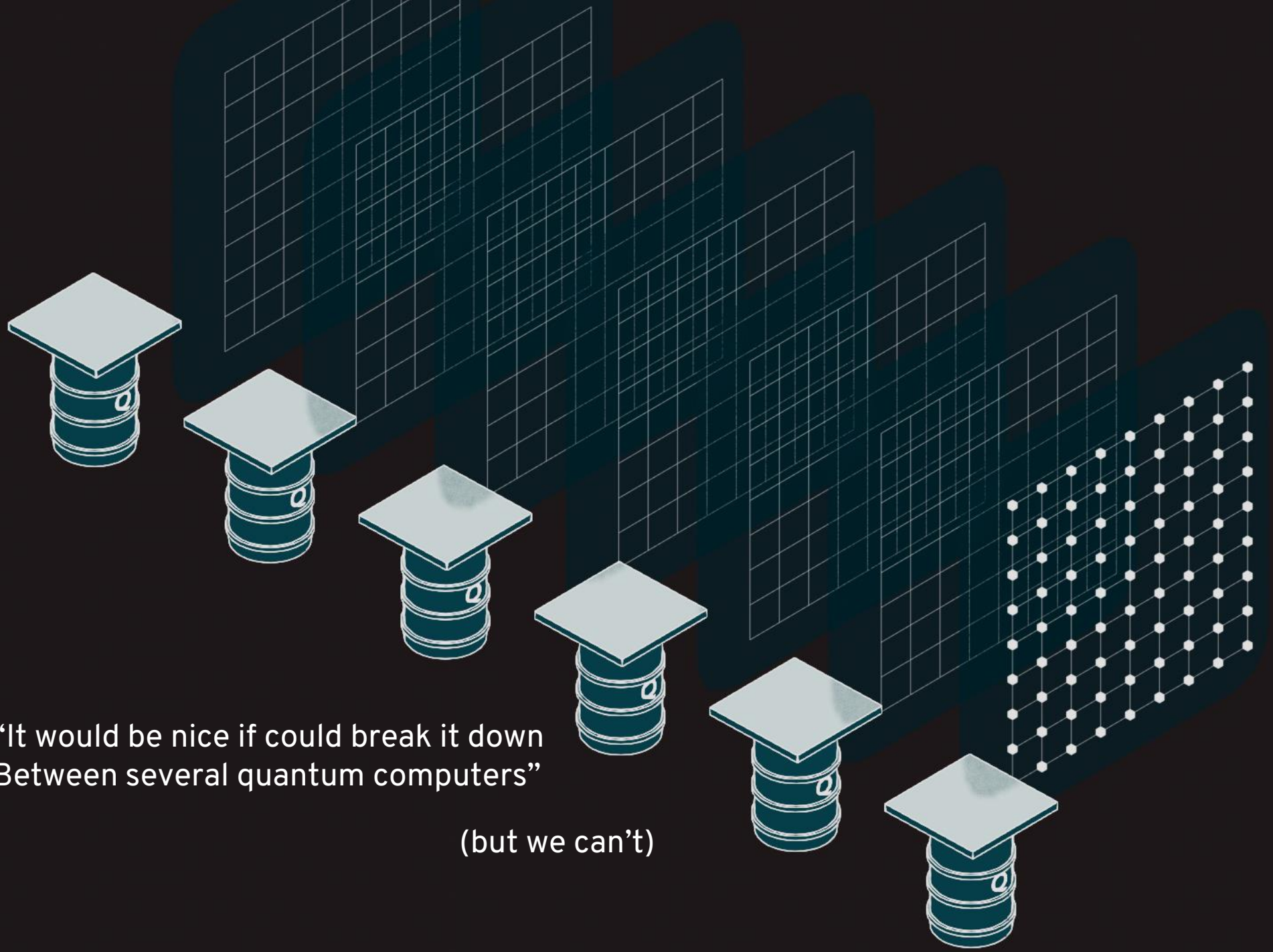
Gates are "Easy", Scaling 106 is hard

Light Qubits

Scaling 106 is "Easy", Gates are hard



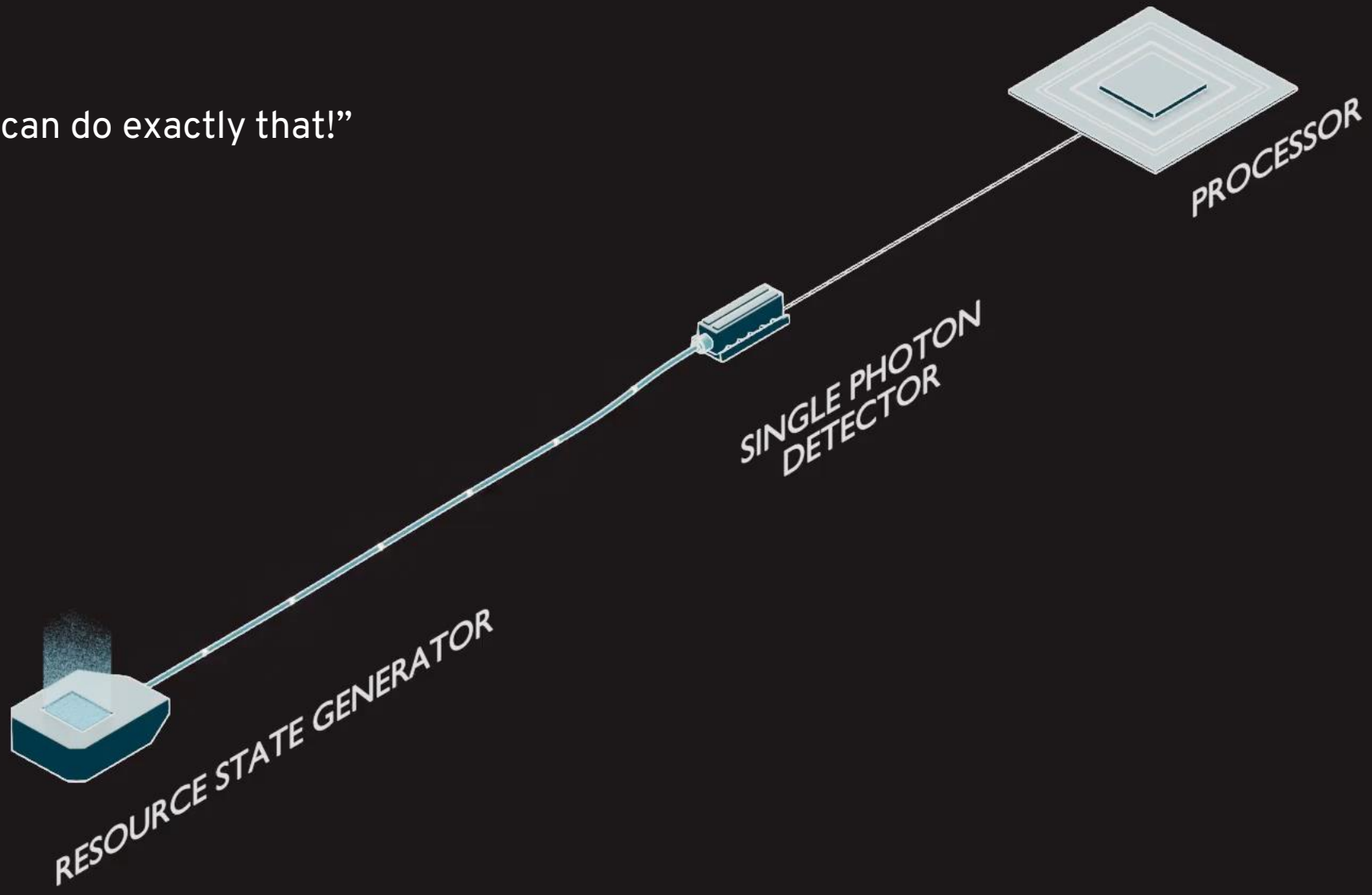
“a million qubits would have to exist together on the same machine – not feasible!”

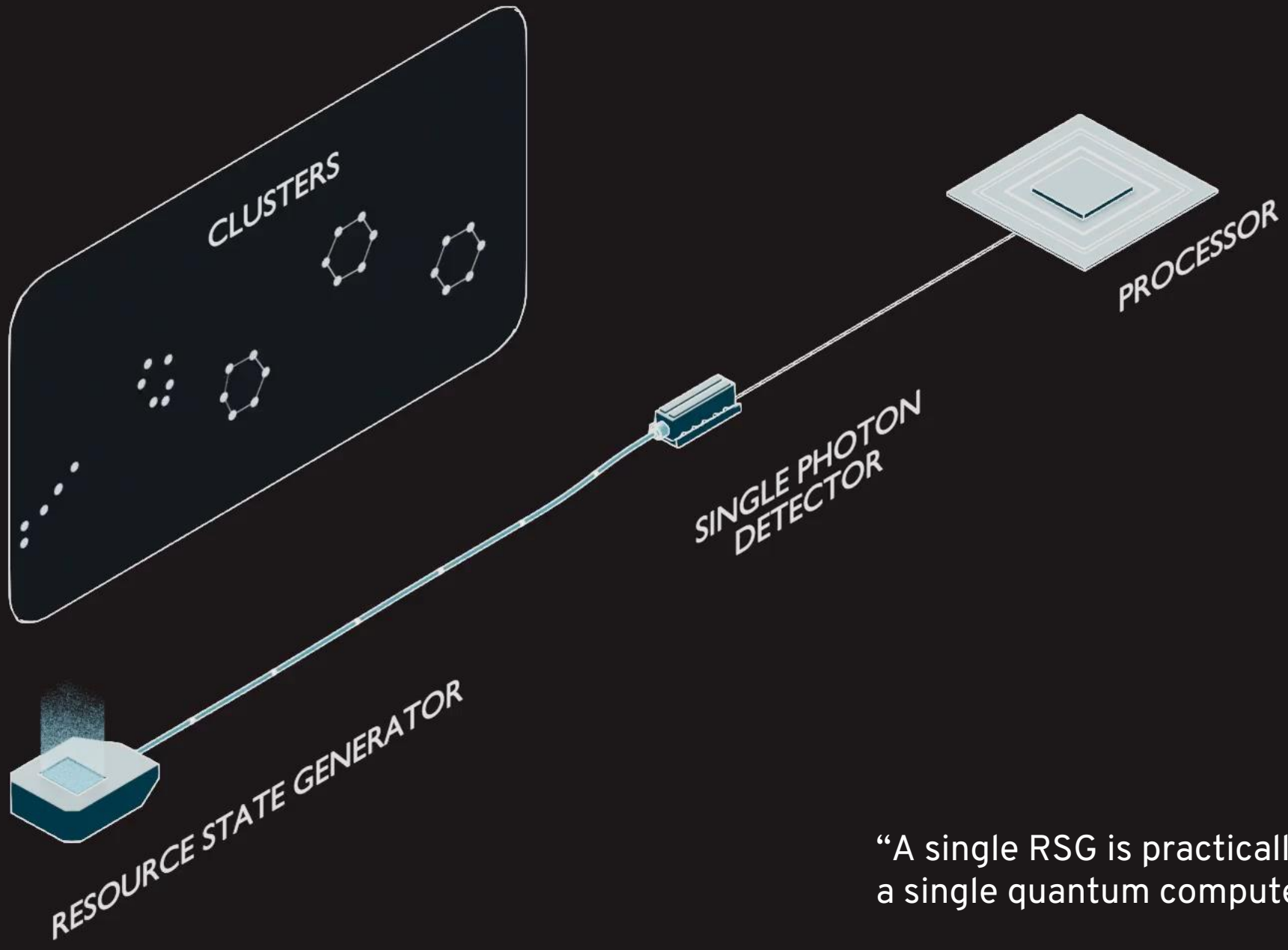


“It would be nice if could break it down
Between several quantum computers”

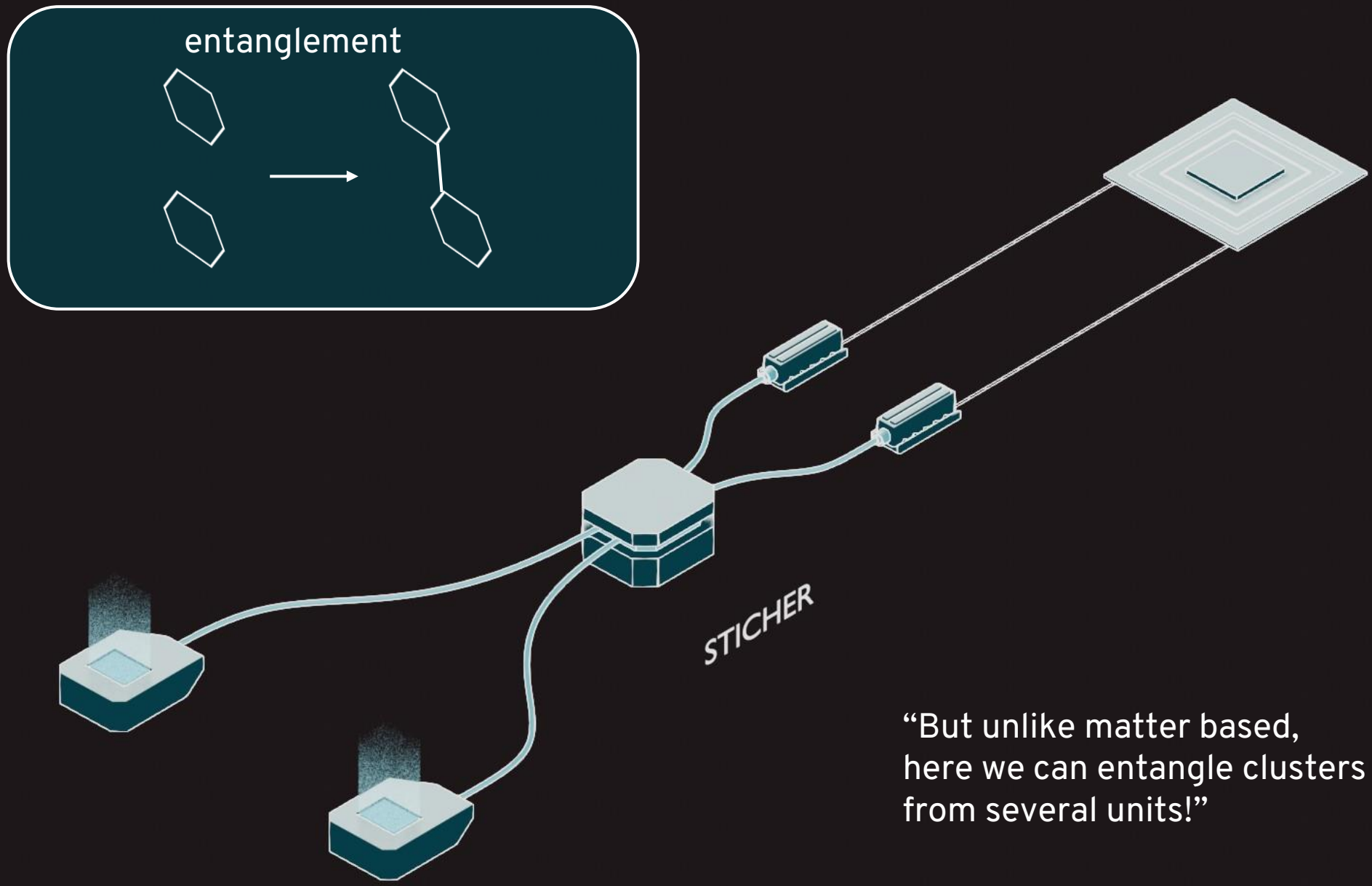
(but we can’t)

“With photonics, we can do exactly that!”

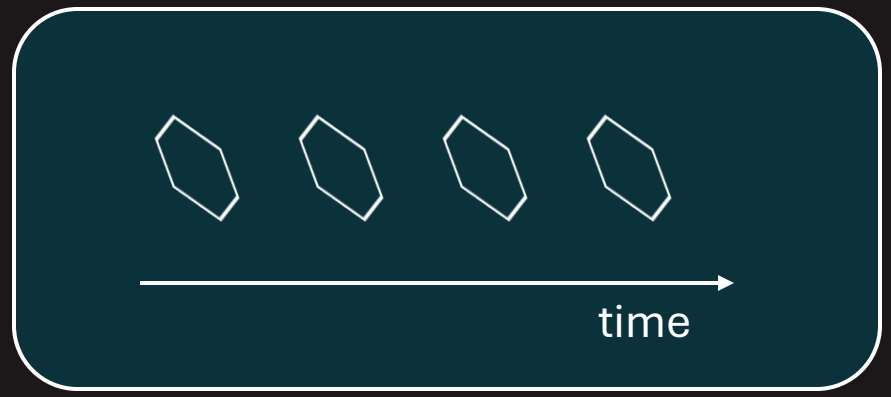




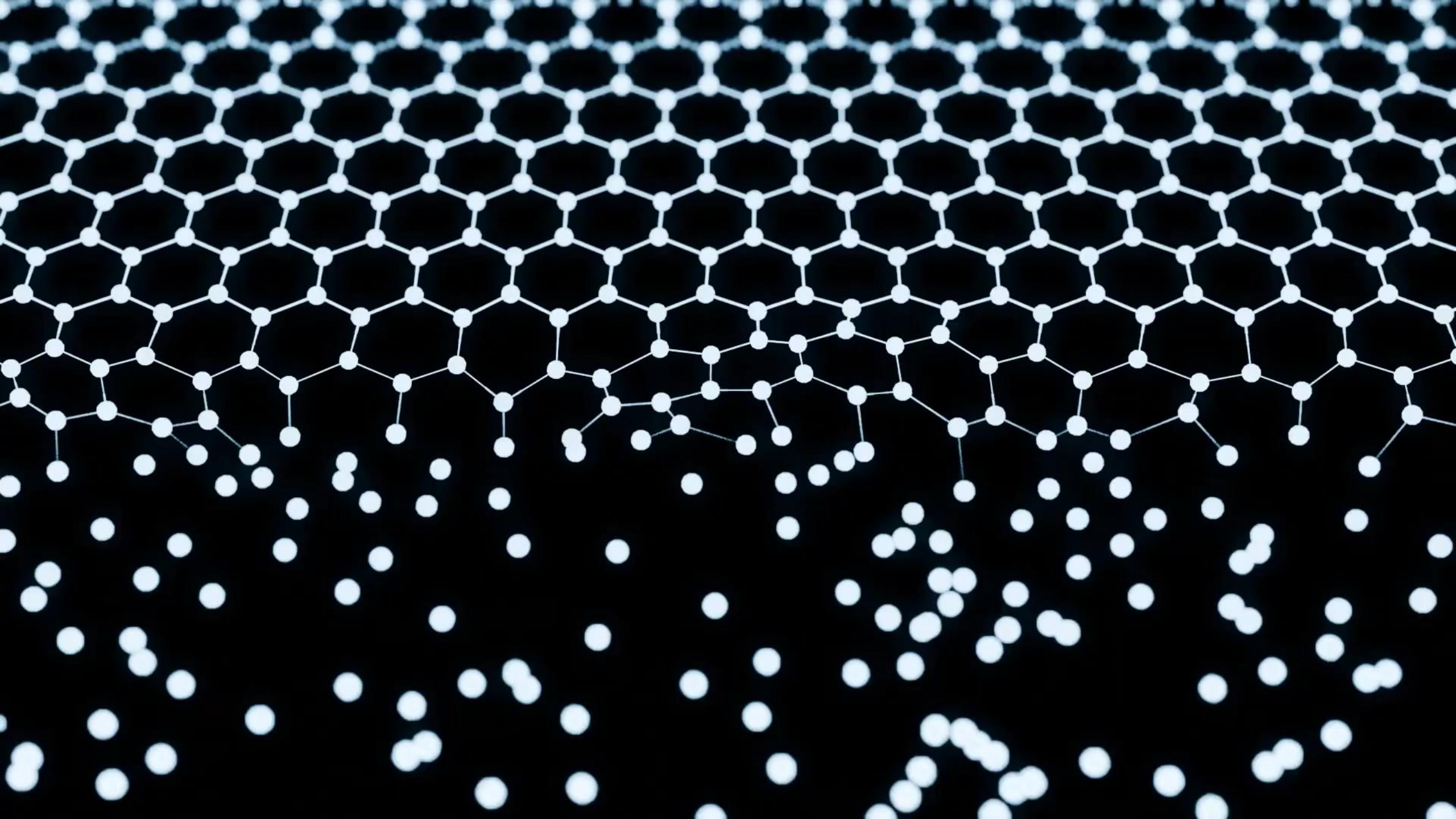
“A single RSG is practically a single quantum computer”

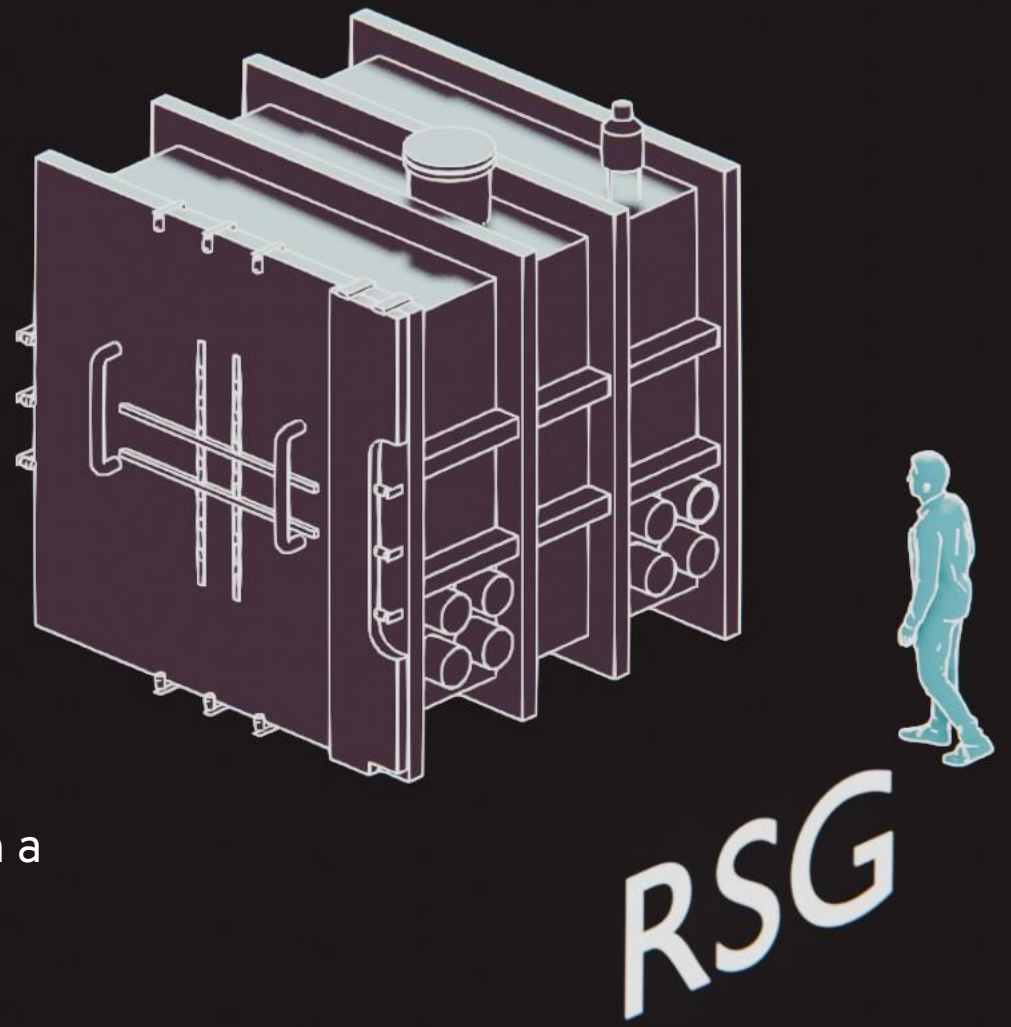


“But unlike matter based, here we can entangle clusters from several units!”



“we can even spread the production of the computational qubits over a long period of time, by storing qubits in memory!”





“Unfortunately, it comes with a great overhead”

“That’s due to the probabilistic approach.”

-But we have a different idea.

OUR SYSTEM