

## Quandela and EDF work together to use photonic quantum computing to simulate hydroelectric dam structures

Paris, 2 November 2022 - French start-up Quandela and leading French energy company EDF have signed a partnership agreement to study the contribution of photonic computing to numerical simulations of hydroelectric dam deformation. The use of this breakthrough technology could increase the accuracy of the simulations, speed up the calculations and reduce the energy consumption of the same calculations. In the longer term, the ambition is to generalize the simulation models to other types of industrial applications and to extend photonic calculation to Machine Learning used in particular in consumption forecasting.

EDF was one of the first French industrial players to invest in quantum technologies. This was done in 2018, with a mindset of improving computing performance for energy management and supporting French and European players. It is in this context that EDF and Quandela, the European leader in photonic quantum computing, began their collaboration very early on, and this partnership marks a new stage.

Today Quandela counts many expert theoreticians, engineers, and programmers in its teams – a unique model that allows us to meet the challenges of leading industrial players such as EDF.

*“This partnership enables us to apply the knowledge of our engineers to industrial issues. EDF and Quandela are perfectly complementary. We put our expertise in differential equation solving and algorithm development as well as our first full-stack photonic quantum computers at EDF’s disposal. In return, we benefit from the knowledge and expertise acquired by EDF’s R&D teams for decades”* **says Valérien Giesz, co-founder and CEO of Quandela.**

*“EDF is an innovative company. Our R&D has almost 2000 employees worldwide and was born at the same time as the company. We started investing in quantum technologies 4 years ago now. A partnership with Quandela, which we know well and whose technology is the result of 20 years of research at the CNRS, seemed obvious. EDF has been interested in simulation for 40 years: the calculations and equations developed are the result of decades of research and effort. Quandela’s know-how, complementary to ours, allows us to form a rich and solid partnership to continue to advance on these subjects”* **adds Stéphane Tanguy, Director of Information Systems and Technologies at EDF R&D.**

### **About Quandela**

Quandela, a leader in quantum photonics, is developing a complete optical quantum computer.

Founded in 2017, the company raised its first round of funding in 2020, followed by a second round in 2021 of €15M from the deeptech investment fund Omnes, Fonds Innovation Défense and the quantum technology fund Quantonation, enabling it to considerably strengthen its R&D teams.

Quandela is a complete player in photonic quantum computing and currently employs more than forty doctors and engineers in algorithms, semiconductors, quantum optics, quantum information and computer science.

In 2022, Quandela released its photonic computer programming and simulation software, Perceval, and signed a hosting partnership with OVHcloud to strengthen the user community. Today, the company offers a cybersecurity enhancement solution with a 2-qubit processor and will make its first 6-qubit NISQ

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quantum computer available in the cloud in the fall of 2022. Quandela also assists and advises companies, such as EDF and MBDA, in the exploration and development of the first use cases.

## **About EDF**

A major player in the energy transition, the EDF Group is an integrated energy company, active in all business lines: generation, transmission, distribution, trading, energy sales and energy services. As the world leader in low-carbon energy, the Group has developed a diversified production mix based mainly on nuclear and renewable energy (including hydro) and invests in new technologies to support the energy transition. EDF's raison d'être is to build a CO<sub>2</sub>-neutral energy future that reconciles preservation of the planet, well-being, and development, thanks to electricity and innovative solutions and services. The Group is involved in supplying energy and services to around 38.5 million customers<sup>1</sup>, including 29.3 million in France. In 2021, it had a consolidated turnover of 84.5 billion euros.

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<sup>1</sup> Customers are counted since 2018 by delivery site; a customer can have two delivery points: one for electricity and one for gas.