



Post Quantum Cryptography Framework for Energy Aware Contexts

PQ-REACT is joining the Quantum Computing race, focusing on creating, developing, and validating a framework for a faster and simpler transition from classical to post-quantum cryptography.

By utilising Europe's most potent quantum infrastructure (*the IBM Quantum Computer from Fraunhofer FOKUS*) the transition will be achieved for a broad spectrum of contexts and usage domains.



Funded by
The European Union

Why PQ-REACT

Public key cryptography has developed into a crucial aspect of the digital communication infrastructure in all over the world during the past three decades. Mobile phones, internet shopping, social networks, and cloud computing are only just a few of the numerous applications supported by these networks, which are of the utmost importance to our economy, security, and way of life.

PQ-REACT objectives

PQ-REACT framework will incorporate PQC migration routes, cryptographic agility techniques, and a toolkit for validating post-quantum cryptographic systems. Users can switch to post-quantum cryptography through this framework, considering their unique circumstances, different contexts, and a wide range of real-world pilots, such as Smart Grids, 5G, and ledgers.

The PQ-REACT project has 5 objectives that will lead its implementation and workflow.

These are not limited since the project promises to deliver impactful results in the spectrum of post-quantum cryptography.



Design and build a framework for a faster and smoother transition from classical to post-quantum cryptography for a wide variety of contexts and usage domains.



Design architectures and develop innovative approaches and tools that enable cryptographic agility and migration to new cryptographic algorithms and standards in an ongoing way.



Build an open platform that will provide a portfolio of tools around an actual quantum computer, for evaluation of PQC algorithms and cryptanalytical methods.



Demonstrate the project outcomes with a set of relevant pilot demonstrators.



Maximize the impact to streamline the migration to quantum-resistant cryptography assets. A realistic and meaningful uptake will require validating the performance and transferring knowledge among a European ecosystem of researchers and SMEs capable of capitalising on the funding and guidelines.

The pilots



**PQC for Smart
Grid applications**



**QKD on
5G networks**



**Post Quantum
enabled Blockchain**

**Discover the
PQ-REACT pilots!**



Project details

Duration: **36 months**

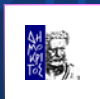
Starting date: **1 September 2023**

Call: **HORIZON-CL3-2022-CS-01**

Project coordinator: **National Center For Scientific Research "Demokritos" (NCSR "D")**

PQ-REACT team

A team of 12 distinct but highly experienced organisations form the PQ-REACT consortium, including R&D Centers, Scientific Organizations, Universities, SMEs, Marketing Agencies and Defense Institutions.



Explore the
PQ-REACT world!

@PQREACT

@PQ-REACT

@PQ-REACT-EU-PROJECT



PQ-REACT has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement N° 101119547.