

Diamante Submission to the SEC Crypto Task Force

Subject: Quantum-Resilient Blockchain Infrastructure for Sustainable IT Systems

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Submitted by: Diamante Financial Technologies

Executive Summary

Diamante respectfully submits this written input to the U.S. Securities and Exchange Commission (SEC) Crypto Task Force in response to its invitation for perspectives on quantum computing and blockchain resilience.

The submission outlines the *Green Energy Optimization Platform for IT Infrastructure*—a system integrating predictive artificial intelligence (AI), quantum optimization, and blockchain tokenization to enhance sustainability in large-scale data centers. The platform is supported by **Diamante**, a quantum-secure blockchain protocol designed to deliver tamper-proof recording, post-quantum cryptographic integrity, and verifiable environmental asset tokenization.

Overview of the Innovation

The *Energy-Aware Infrastructure Management System Using Predictive AI and Quantum Optimization* (patent pending, USPTO) is a modular framework that applies AI-based workload prediction and quantum-assisted scheduling to reduce data center power consumption.

Through its integration with the Diamante blockchain, each unit of energy saved or emission avoided is tokenized as a **Green Energy Token (GET)**—a verifiable digital asset representing measurable environmental impact. These tokens establish a transparent, auditable chain of trust aligned with emerging ESG and sustainability reporting standards.

Diamante's Role and Technical Foundations

Diamante functions as the foundational distributed ledger layer for this system, providing:

- **Post-Quantum Security:** Consensus and cryptography based on lattice-based encryption to mitigate risks from quantum decryption capabilities.
- **Proof-of-Efficiency Consensus:** A validation mechanism prioritizing low-energy computation, supporting environmentally responsible operations.

- **Interoperability:** Smart contract gateways enabling communication with enterprise APIs, carbon marketplaces, and regulatory data frameworks.
- **Auditability and Compliance:** Immutable transaction history supporting transparent ESG disclosures consistent with SEC sustainability and digital asset frameworks.

Diamante's quantum-resilient architecture directly supports the Commission's long-term objectives for secure, efficient, and transparent digital financial infrastructure.

Relevance to SEC Priorities

The Diamante submission addresses key considerations identified by the SEC's Crypto Task Force:

1. **Quantum Vulnerability Mitigation:** Ensuring cryptographic durability of distributed financial systems against quantum computational threats.
 2. **Sustainability and Market Integrity:** Enabling measurable, verifiable green outcomes through tokenized, blockchain-based sustainability assets.
 3. **Transparency and Accountability:** Leveraging immutable ledgers for audit-ready ESG reporting, compatible with existing SEC disclosure frameworks.
 4. **Innovation Within Regulatory Guardrails:** Demonstrating how tokenized sustainability markets can operate transparently under evolving U.S. securities laws.
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Broader Implications

Data centers are projected to consume more than 1,000 TWh of energy annually by 2030. The proposed system directly addresses this challenge by converting energy savings into digital assets recorded on a quantum-secure ledger, allowing regulated entities to track, verify, and potentially monetize efficiency gains.

This framework offers a scalable pathway for regulated financial participants and enterprises to integrate verifiable sustainability outcomes into blockchain-based systems while maintaining compliance and cryptographic integrity in anticipation of future quantum threats.

Conclusion

Diamante appreciates the opportunity to contribute to the SEC's evaluation of post-quantum and blockchain technologies. We believe this framework demonstrates how

quantum-resilient distributed ledgers can underpin the next generation of sustainable, transparent, and secure financial infrastructure.

For further details or supporting documentation, please contact:

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