



BEYOND PSDP:

Tokenizing Pakistan's Power Sector for New Investment

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Pakistan's power sector has long been caught between large investment requirements and limited fiscal space. The Public Sector Development Programme (PSDP) remains an important vehicle for financing public infrastructure, but it was never designed to carry the full weight of a modern power-sector transformation. For FY2025–26, the Power Division received roughly Rs 104 billion under the federal PSDP, while the throw-forward of committed projects exceeds Rs 1 trillion. Circular debt was also around Rs 1.84 trillion by early 2026. The implication is increasingly difficult to ignore: Pakistan cannot finance transmission expansion, grid modernization, storage and the energy transition through public resources alone. The question, therefore, is not whether the PSDP should continue, but how it can be complemented by new forms of private and institutional capital.

Asset tokenization offers one such possibility. In simple terms, tokenization converts rights over a real asset, revenue stream or financial claim into digitally represented units that can be issued, transferred and settled through a regulated digital platform. Applied carefully, it could allow a power project, a defined stream of receivables, or another

bankable energy asset to be divided into smaller, tradeable interests. This does not mean placing the power sector “on crypto,” nor does it remove the need for sound project appraisal, credible tariffs or effective regulation. It is better understood as a financing infrastructure: a way of widening access to assets that are currently illiquid and available mainly to governments, banks and a relatively narrow group of investors.

This distinction matters as Pakistan moves toward greater private participation in electricity distribution. The proposed privatization of FESCO, GEPCO and IESCO may bring capital and management discipline, but privatization alone will not create deeper capital markets for power-sector investment. Tokenized instruments could eventually complement conventional equity, debt and public-private partnership structures by opening carefully selected assets to pension funds, institutional investors and, subject to appropriate safeguards, overseas Pakistanis and smaller domestic investors. In this sense, tokenization should not be presented as an alternative to privatization or the PSDP. Its value lies in adding another financing channel where conventional

public funding is constrained.

International experience provides useful signals, although Pakistan should avoid importing models mechanically. Platforms such as Power Ledger, Sun Exchange and other token-based energy ventures have experimented with peer-to-peer electricity trading, fractional solar investment and digitally represented energy contracts. The broader lesson is more important than any individual platform: digital ownership and settlement can reduce transaction frictions, improve traceability and connect a wider investor base to identifiable energy assets. Yet technology cannot compensate for weak underlying economics. A token is only as credible as the asset, cash flow, metering system, contractual rights and regulatory framework behind it.

Pakistan is now better placed to test this proposition because a regulatory architecture for virtual assets is emerging. The Virtual Assets Act, 2026 and the Pakistan Virtual Assets Regulatory Authority (PVARA) provide a potential institutional entry point, while NEPRA and the Securities and Exchange Commission of Pakistan already regulate essential parts of the energy and securities landscape. Rather than creating another institution, Pakistan should establish a clear division of responsibilities. PVARA can oversee licensing and market conduct for eligible tokenized structures; NEPRA can validate the underlying power asset, relevant licenses, and metering arrangements; and SECP should retain its role where an instrument falls within securities regulation. Banking and settlement arrangements would similarly need to remain within the applicable State Bank framework.

The most sensible starting point is not a sector-wide rollout but two or three tightly controlled pilots. A renewable IPP revenue stream, a ring-fenced infrastructure asset, or a carefully defined tranche of DISCO receivables could be considered, provided the underlying cash flows and legal claims are transparent. Each pilot should use a licensed special-purpose structure, independent verification of the underlying asset, auditable smart-meter or SCADA data where relevant, clear investor disclosures, and strict limits on retail exposure during the experimental phase. A permissioned or hybrid ledger may be more appropriate initially than a fully open system, particularly where data sovereignty and critical infrastructure are involved.

The PSDP itself can become part of this

transition. Instead of viewing every power project as either publicly funded or privately financed, government could identify commercially viable components within the PSDP portfolio that can graduate toward blended, securitized or eventually tokenized financing. Projects with predictable revenue streams could be separated from those that are fundamentally social or strategic public investments. This would help scarce PSDP resources concentrate on projects where public financing is genuinely necessary, while bankable infrastructure increasingly attracts private capital. PIDE/RASTA and similar research platforms can contribute by assessing regulatory readiness, identifying suitable pilots and developing evidence before large-scale adoption.

For Pakistan, the real promise of tokenization is therefore not technological novelty. It is the possibility of changing how infrastructure capital is mobilized, monitored and broadened beyond the public balance sheet. If introduced gradually, with strong asset verification, regulatory clarity and investor protection, tokenization could become a useful bridge between PSDP constraints and Pakistan's substantial power-sector investment needs. The objective should be practical: use digital finance to make credible energy assets more investable, transparent and accessible. Done well, tokenization would not replace the PSDP; it would help the PSDP do what it should do best, direct limited public resources toward strategic priorities while enabling viable power-sector assets to reach deeper pools of capital.

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