

Settlement Operational Maturity and Cashflow Stability in Long-Term Power Purchase Agreements

Abdulaziz A. AlHaddab, Abdullah Ahmed Al Eyadhi, Abdulaziz Al-Zimami, Adnan Fida
Saudi Principal Buyer, Riyadh, Saudi Arabia

Extended Abstract

[Download file](#)

Abstract Summary

Long-term Power Purchase Agreements (PPAs) are widely used to support investment in electricity generation by providing stable revenue arrangements for power producers. These contracts define tariff structures, dispatch obligations, and payment mechanisms intended to ensure predictable financial outcomes over the life of a project. In practice, however, the realization of revenue under a PPA depends not only on contractual provisions but also on the operational processes that translate delivered electricity into verified invoices and payments.

Electricity settlement typically involves several operational stages, including metering, data acquisition, validation, reconciliation, and invoice preparation. These activities require coordination between generators, system operators, and market institutions. Differences in the efficiency and reliability of these processes can influence the timing of revenue realization and may affect the predictability of cashflows for power producers.

This paper examines how the operational performance of settlement systems may influence financial stability in long-term power contracting. The study introduces the concept of Settlement Operational Maturity (SOM) to describe the capability of settlement processes to produce consistent and reliable financial outcomes. Using a probabilistic simulation framework, the analysis explores how variations in settlement maturity may affect the timing and stability of revenue realization.

The results indicate that improvements in settlement processes can contribute to more predictable cashflow patterns, highlighting the importance of operational coordination in supporting stable financial outcomes in electricity markets.

Presenting Author Biography

Adnan Fida is Electrical Engineer with a PhD in Computer Science from UBD and a Master's degree in Communications Engineering from Lancaster University, United Kingdom. He

currently serves as a Senior Power Purchase Specialist at the Saudi Principal Buyer, where he works within market operations and contributes to the development, testing and integration of settlement systems for independent power producers operating under long-term Power Purchase Agreements. Dr. Fida has authored more than thirty publications in areas spanning computing, communications, and applied engineering systems. His recent work focuses on settlement systems, and processes that support electricity market operations and financial settlement mechanisms.