

## Investigating the Effect of Refinancing on Financial Behaviour of Energy Efficiency Projects

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**Abstract :** Reduction of energy consumption in built infrastructure, through the installation of energy-efficient technologies, is a major approach to achieving sustainability. In practice, the viability of energy efficiency projects strongly depends on the cost reimbursement and profitability. These projects are subject to failure if the actual cost savings do not reimburse the project cost in a timely manner. In such cases, refinancing could be a solution to benefit from the long-term returns of the project if implemented wisely. However, very little is still known about the effect of refinancing options on financial performance of energy efficiency projects. To fill this gap, the present study investigates the financial behavior of energy efficiency projects with focus on refinancing options, such as Leveraged Loans. A System Dynamics (SD) model is introduced, and the model application is presented using an actual case-study data. The case study results indicate that while high-interest start-ups make using Leveraged Loan inevitable, refinancing can rescue the project and bring about profitability. This paper also presents some managerial implications of refinancing energy efficiency projects based on the case-study analysis. Results of this study help implementing financially viable energy efficiency projects, so the community could benefit from their environmental advantages widely.

**Keywords :** energy efficiency projects, leveraged loan, refinancing, sustainability

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