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# A Game Theory-Based Assessment of the Implementation of Green Building in Israel

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**Abstract:** This paper uses game theory – specifically, the Prisoner's Dilemma model – to explain obstacles to energy savings and greenhouse gas (GHG) abatement in Israel's construction industry and to predict whether government subsidies might help remove those obstacles. The Israeli green building standard (SI 5281) addresses these issues, but with a low level of requirements and within a range of other "green" issues. However the standard has gained wide acceptance and establishing a different one would be complicated. Moreover the present standard could be implemented at a higher level (by requiring two stars and above compliance). At present the government does not require builders to build higher level green homes and few of them choose to do so, while the vast majority of apartment buyers show little interest in green homes. This is a suboptimal equilibrium. This paper suggests that in order to motivate higher level green building, the government should offer incentives to both builders and buyers, which would not cost the Treasury much. Thereby the government would save on energy costs and gain support and prestige while the market would move to a new equilibrium, better for all involved.

**Keywords:** green building; sustainable building; game theory; prisoner's dilemma; public policy; Israel

## 1. Introduction

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