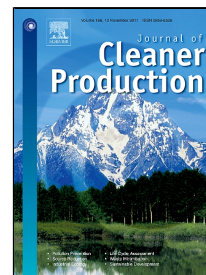


Accepted Manuscript

Public-Private Partnerships for Energy Efficiency Projects: A Win-Win Model to Choose the Energy Performance Contracting structure

Nunzia Carbonara, Roberta Pellegrino



PII: S0959-6526(17)32149-2
DOI: 10.1016/j.jclepro.2017.09.151
Reference: JCLP 10656
To appear in: *Journal of Cleaner Production*

Received Date: 24 January 2017
Revised Date: 24 July 2017
Accepted Date: 15 September 2017

Please cite this article as: Nunzia Carbonara, Roberta Pellegrino, Public-Private Partnerships for Energy Efficiency Projects: A Win-Win Model to Choose the Energy Performance Contracting structure, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.09.151

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Public-Private Partnerships for Energy Efficiency Projects: A Win-Win Model to Choose the Energy Performance Contracting structure

Abstract

To stimulate private sector investments and promote energy efficiency, in recent years through Public Private Partnership arrangements, the public sector uses private companies, the Energy Service Company (ESCO), to perform one or more activities related to the provision of energy services, and the contractual arrangements defining the contracting parties' obligations and rights are traditionally based on Energy Performance Contracting (EPC). Although EPC is a valuable model for delivering public energy efficiency projects, the adoption is still far from its vast potential mainly because of two unresolved issues: the dilemma of equally sharing the benefits between the public and private parties so as assuring a win-win condition, and the lack of adequate public procedures that support the selection of the most appropriate EPC schema given certain circumstances and projects' characteristics. The existing literature have analyzed the advantages of EPC mechanism for delivering energy efficiency projects and explored the critical success factors of EPC. However, it does not provide any solution to address the issues that hamper the adoption of EPCs in public sector. To fill this gap, this paper proposes a model for assessing and benchmarking the net benefits of the different EPC structures, so as choosing the EPC schema that creates a 'win-win' solution for both the ESCO and the government, by balancing the private sector's profitability needs and the public sector's economic interests. The assessment of the benefits of the EPC schema for contractual parties and the benchmark among the contracts are based on an economic approach, which expresses the net benefit gained by each party through the three EPC contracts in monetary terms and benchmarks the three EPC schema through the Net Present Value (NPV) method. The win-win condition is ensured by the contract that minimizes the difference between the net profits (NPV) gained by the contractual parties. This will support the public authority in the decision-making process about the EPC structure to be adopted to develop an energy efficiency project as a PPP. To demonstrate the applicability of the proposed model, we apply it to an energy efficiency project launched by the Municipality of Noci (Southern Italy).

Keywords: Energy efficiency, Energy Performance Contracting, Public Private Partnership, Energy Service Company

Download English Version:

<https://daneshyari.com/en/article/5479285>

Download Persian Version:

<https://daneshyari.com/article/5479285>

[Daneshyari.com](https://daneshyari.com)