

Accepted Manuscript

Title: Benefit Maximization of Demand Side Management Operator (DSMO) and Private Investor in a Distribution Network

Authors: Hamed Hosseinnia, Daryoush Nazarpour, Vahid Talavat



PII: S2210-6707(18)30125-2
DOI: <https://doi.org/10.1016/j.scs.2018.04.022>
Reference: SCS 1062

To appear in:

Received date: 20-1-2018
Revised date: 17-4-2018
Accepted date: 17-4-2018

Please cite this article as: Hosseinnia, Hamed., Nazarpour, Daryoush., & Talavat, Vahid., Benefit Maximization of Demand Side Management Operator (DSMO) and Private Investor in a Distribution Network. *Sustainable Cities and Society* <https://doi.org/10.1016/j.scs.2018.04.022>

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.

Benefit Maximization of Demand Side Management Operator (DSMO) and Private Investor in a Distribution Network

Hamed Hosseinnia¹, Daryoush Nazarpour^{2,*}, Vahid Talavat³

¹ *Electrical Engineering Department, Urmia University, Urmia, Iran (Email:*

Hamed.Hosseinnia@gmail.com)

² *Electrical Engineering Department, Urmia University, Urmia, Iran (Email:*

d.nazarpour@urmia.ac.ir)

³ *Electrical Engineering Department, Urmia University, Urmia, Iran (Email:*

V.talavat@urmia.ac.ir)

**Corresponding Author: Daryoush Nazarpour, Electrical Engineering Department, Urmia*

University, Urmia, 57153 1177, Iran. Tel./fax: +98 4432775660; E-mail addresses:

d.nazarpour@urmia.ac.ir

Abstract

In this paper, the beneficial impact of private investor participation and demand side management operator (DSMO) in planning problem is investigated. All system uncertainties are modeled by fuzzy number approach. Bi-objective optimization model is proposed for the maximum benefit of DSMO and private investor in the planning horizon. To tackle the optimization problem, ϵ -constraint and fuzzy decision making methods are jointly used. Different scenarios are modeled including and excluding electric vehicles (EVs) charging impact on the daily load curve. The problem is formulated in the general algebraic modeling system (GAMS) environment and solved by its embedded high-performance solvers. The obtained results reveal that the desired benefits of a private investor cannot be satisfied in the no benefit sharing scenario. In non-zero benefit sharing scenario, Pareto optimal front includes non-negative values for both DSMO and private investor which demonstrates the

Download English Version:

<https://daneshyari.com/en/article/6775353>

Download Persian Version:

<https://daneshyari.com/article/6775353>

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