

A New Dynamic Model for Investigating the Effects of Renewable Energies on the Behavior of Job Creation in Iran

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Abstract

In this paper, it is tried to propose a new dynamic model for investigating the employment effects of the entrepreneurial process in the field of renewable energy (wind and sun) in Iran. For developing a model, the factors effective in the entrepreneurial process in the field of renewable energy (RE) were considered as three sub-models including investment, employment and energy-economics. The proposed dynamic model was applied in order to simulate the effect of some policies on the behavior of employment indicators in the field of RE in Iran. This paper analyzed these policies and presented those had greater effects on employment in two job-function grouping. The results from this study not only provide useful information for the government, the private sector and consumers in Iran but are also likely to be applied equally to other similar regions around the world.

Key words: Iran, Job creation, Renewable energy, System dynamics modeling, Wind and solar technologies.

1. Introduction

Today the entrepreneurship is considered the driving force for development and job creation. Most governments have adapted entrepreneurship as their national development strategy. Examples of some important issues such as avoiding greenhouse gas emission, and protecting the environment to secure the energy supplies at the national level are some major driving forces in deploying the renewable energy (RE) of the wind and sun. In other words, building up a domestically produced clean energy supply can provide greater energy independence and security, has notable environmental benefits due to reduced CO₂ emissions, and can act as a driver for significant, positive economic growth through continual innovation (1). Accordingly, a system dynamics and fuzzy multi-objective programming integrated approach provided for the prediction of energy consumption and CO₂ emissions at a regional level (2). Furthermore, these energy sources have the capability to create new jobs as well as contribution to the regional economy and income improvement. Statistically, the solar energies sector stood up well to the recession with over 100,000 jobs created in 2009 in EU-27. Photovoltaic sectors (121,800 jobs in 2009)