



Renewable energy policies in Turkey

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Abstract

Achieving solution to environmental problems that we face today requires long-term potential actions for sustainable development. In this regard, renewable energy resources appear to be the one of the most efficient and effective solutions. Although, Turkey has substantial reserves of renewable energy resources, actual utilization of these resources are quite low.

The aim of this study is to investigate the renewable energy policies and the political organizations that shape these policies. In these concept, The renewable energy potential of Turkey, the effective utilization of this potential, the energy politics, the political organizations, incentive, pricing and buying mechanisms, research and development studies, barriers for development of renewable energy are investigated in this paper. In conclusion, proposals and recommendations are given to overcome the problems.

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Keywords: Renewable energy sources; Energy policy; Solar energy; Wind energy; Geothermal energy; Biomass; Hydro power

Contents

1. Introduction	153
2. Energy resources of Turkey	154
2.1. Fossil energy sources	154
2.2. Renewable energy resources	155

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3. Renewable energy policies	156
3.1. Renewable energy policy institutions	157
3.2. Renewable policy instruments	158
3.3. Research and development on renewable energy	159
3.4. Renewable energy pricing and arrangements to subsidize or to oblige the purchase of the electricity from renewable energy	160
4. Analysis of barriers for development of renewable energy and recommendations	160
5. Conclusions	162
6. Disclaimer	162
References	162

1. Introduction

Population of Turkey is about 65 million. The population growth rate is 1.7%, the highest among IEA countries. The country has a very dynamic economy. As a net effect of these factors, Turkey's energy demand is growing rapidly and is expected to continue grow in near future.

Although Turkey has a wide range of energy resources, these resources are limited. Since, Turkey is an energy importing country. More than about 60% of energy consumption in the country is met by imports and the share of imports continues to grow each year. Therefore, it is critical to supply its energy demand by using domestic non-renewable resources (such as lignite, hard coal, oil and natural gas) and renewable resources [1].

Renewable energy resources (solar, hydroelectric, biomass, wind, ocean and geothermal energy) are inexhaustible and offer many environmental benefits over conventional energy sources. Each type of renewable energy also has its own special advantages that make it uniquely suited to certain applications. Almost none of them release gaseous or liquid pollutants during operation. In their technological development, the renewable ranges from technologies that are well established and mature to those that need further research and development [2]. The other important factor of renewable resources is to create new employment opportunities.

Turkey's geographic location has several advantages for extensive use of most of the renewable energy sources. It is on the humid and warm climatic belt which includes most of Europe, the near east and western Asia. A typical Mediterranean climate is predominant at most of its coastal areas, whereas the climate at the interior part between the mountains that are a part of the Alpine Himalayan mountain belt is dry with typical steppe vegetation [3].

The subventions given to the renewable energy sources are compulsory till the sector come a competitive point with other energy sectors [4]. Every country has its subvention mechanism for renewable energy sources. These subventions can be grouped under three title: financial, tax and production subvention. For example, in Germany its compulsory to

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