Renewable energy research progress in Mexico: A review


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Mexico ranks 9th in the world in crude oil reserves, 4th in natural gas reserves in America and it is also highly rich in renewable energy sources (solar, wind, biomass, hydropower and geothermal). However, the potential of this type of energy has not been fully exploited. Hydropower is the renewable energy source with the highest installed capacity within the country (11,603 MW), while geothermal power capacity (958 MW) makes Mexico to be ranked 4th in the use of this energy worldwide. Wind energy potential is concentrated in five different zones, mainly in the state of Oaxaca, and solar energy has a high potential due to Mexico's ideal location in the so called Solar Belt. Biomass energy has the highest potential (2635 to 3771 PJ/year) and has been the subject of the highest number of research publications in the country during the last 30 years (1982-2012). Universidad Nacional Autonoma de Mexico has led research publications in hydropower, wind, solar and biomass energy and Instituto de Investigaciones Electricas in geothermal energy during this period. According to the General Law for Climate Change the country has set the goal of generating 35% of its energy needs from renewable sources by 2024. This paper presents an overview of the renewable energy options available in Mexico, current status, main positive results to date and future potential. It also analyses barriers hindering improvements and proposes pertinent solutions.

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SciVal Topic Prominence

Topic: publication | India | authorship pattern
Prominence percentile: 72.513

Author keywords
Biomass; Geothermal; Hydropower; Mexico; Renewable energy sources; Solar; Wind

Indexed keywords

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