عنوان مقاله:

Determining Optimal Locations for Biogas Plants: Case Study of Tehran Province for Utilization of Bovine and Aviculture Wastes

نویسندگان:

Maryam Nosratinia - *Department of Energy, Materials and Energy Research Center (MERC), P. O. Box: ۳۱۷۷۹۸۳۶۳۴, MeshkinDasht, Alborz, Iran.*

Ali Tofigh - *Department of Industrial Engineering, Amirkabir University of Technology, P. O. Box: ۱۵۹۱۶۳-۴۳۱۱, Tehran, Tehran, Iran.*

Mehrdad Adl - *Department of Energy, Materials and Energy Research Center (MERC), P. O. Box: ۳۱۷۷۹۸۳۶۳۴, MeshkinDasht, Alborz, Iran.*

خلاصه مقاله:

Given the world's growing population and energy demand, modern methods are developed to contribute to generating alternative energies. They aim to maintain the renewability of the supplied energy and decrease environmental contaminations. Biogas is a renewable energy carrier that has recently been under consideration in Iran. One objective of such plans is to find proper locations for installing and running the existing potentials and infrastructures. In this paper, Tehran, Iran is selected as the study area which is ranked the ۱st in population density and proper infrastructures available here are accessible. According to the widespread poultry and cow-breading farms in this province, bovine and aviculture excreta are considered as raw materials in producing biogas. An inference network was established in this research for evaluating the process taking into account the infrastructural parameters, geomorphological constraints, resource availability factors, and limiting parameters such as protected/prohibited areas.In this paper, the fuzzy method was used to standardize the data and the fuzzy-analytical hierarchy process method was employed to weight the locating criteria in the geographical information system. The evaluation outcomes suggested certain zones in southern parts of the province in which the industrial livestock farms become frequently widespread and the suburb areas of smaller cities on the eastern part of the province are the most proper areas for this purpose.

کلمات کلیدی:

Location, Biogas, Geographical information system (GIS), Fuzzy logic

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1252805