Iran wind turbine and solar hybrid system

Can a wind/photovoltaic/battery/diesel hybrid system work in Iran?
In this paper, a wind/photovoltaic/battery/diesel hybrid system with hourly analysis during a year is modeled and optimized for different cities of Iran with various ranges of wind, solar and ambient temperature. A number of solar panels, wind turbines, batteries as well as nominal capacity of diesel engine are considered as design parameters.

Can wind power produce hydrogen in Iran?
The wind energy systems under study were of 600, 1250, 1500 and 2000 kW. Mostafaeipour et al. evaluated Iran's potential of hydrogen production in the province of Fars using wind power in four areas of Iran's Fars province.

Is a wind-solar-hydrogen power plant feasible in Iran?
Therefore, this study has been carried out with the aim of feasibility of technical-economic wind-solar-hydrogen power plant using homer software in Hendijan area of Khuzestan province in Iran. Initially, data on wind speed, air filter indicator, daily radiation, and data related to the hydrogen system were collected for the studied area.

How many wind turbines are there in Iran?
For the number of wind turbines more than 150, fuel ratio becomes constant (equal to one) where the diesel engine is not used to power the system. The number of wind turbine for the other studied cases is 65, 30, 40 and 65 in Tehran, Mashhad, Kerman and Bushehr, respectively.

Are wind turbines profitable in Iran?
Besides,the installation of wind turbines in windy regions of the country,constructing wind farms,and distributed small-scale and centralized PV plants are already profitablein numerous regions in Iran (Ghobadian et al. 2009; Alamdari et al. 2012; Aguilar et al. 2015).

Which areas in Iran have a high potential for wind energy?
Some of the areas of Iran such as Manjil,Binaloud,Zabol,and Zahakare well-known zones with high potential for wind energy. Based on projections,the amount of wind energy that can be economically estimated to be 18,000 MW (Mollahosseini et al.,2017). Table 2shows the renewable energy plants (Solar-Wind).

In this study the PV and wind turbine are used to generate the power based on real data of solar radiation, wind speed and temperature of the four cities of Iran country. So the mathematical model of output power of PV based on solar radiation and temperature is presented in (1)-(14) and also the model of output power of wind turbine based on ...

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The simulation results demonstrate that for hybrid energy system is consists of 0.8 kW PV modules, two wind turbines (0.4 kW each), 2.5 kW inverter, and 8 batteries (200 Ah ...

Hosseinalizadeh et al. [45] studied the feasibility of a hybrid renewable energy system consisting of wind turbines, PV and fuel cells for four regions of Iran using the data pertaining to solar radiation and average wind speeds. According to the results of this study, hybrid systems consisting of wind turbines and photovoltaic cells impose ...

In this regard, Homer software is used to evaluate economic and technical analyses of PV-wind-diesel hybrid system for the two cities by the data gathering which was collected from Iran"s meteorological organization.

In this paper, a wind/photovoltaic/battery/diesel hybrid system with hourly analysis during a year is modeled and optimized for different cities of Iran with various ranges ...

The simulation results demonstrate that for hybrid energy system is consists of 0.8 kW PV modules, two wind turbines (0.4 kW each), 2.5 kW inverter, and 8 batteries (200 Ah and 12 V). The cost of energy is 1.655 US$/kWh, whereas the initial capital required, and net present costs are, 22998 US$ and 24623 US$, respectively.

In this paper, the technical and economical consideration of a wind and solar hybrid system to supply electrical energy for a number of remote users (aid and medical emergency Shelter in...

For instance, Maleki et al. analyzed a hybrid PV, wind turbine and fuel cell system for electricity generation for Namin in Iran. Among three different systems considered ...

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Results revealed that there is a high potential for using solar and wind renewable energies in Iran, so that the lowest and highest percentages of using renewables were recorded at Darab with 87% and Jask stations with 100% usage.

For instance, Maleki et al. analyzed a hybrid PV, wind turbine and fuel cell system for electricity generation for Namin in Iran. Among three different systems considered in this study, the combination of PV, wind and fuel cell (PV/wind/fuel cell) is more cost-competitive compared to the wind/fuel cell and PV/fuel cell systems.

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