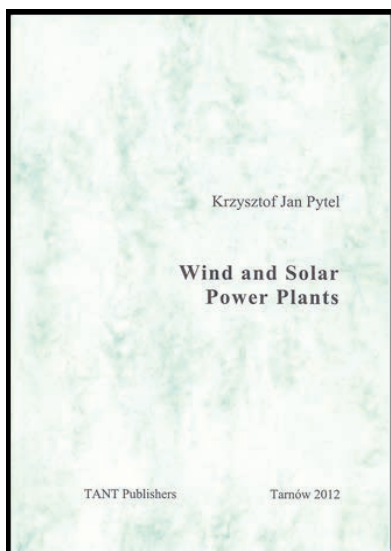


Krzysztof Jan Pytel, *Alternative Sources of Energy: Wind and Solar Power Plants*, Tant Publishers, Tarnów 2012, 180 s.



The monograph is dedicated to the important topic of energy sources, with special focus put on renewable energy using wind and solar sources in Poland. The author explains in detail the criteria and indicators considered for selection of the energy source.

The publication starts with the description of various technologies of electricity production which can be used in Poland – shale gas, nuclear power plants, microgeneration and renewable energy.

The work continues with a detailed list of indicators showing the potential of wind and solar energy usage in Europe and then focusing on regions with the highest potential in Poland.

Three main variants of technology are selected for further analysis – electricity obtained from wind power, solar power, and combination of wind and solar power. The author presents the precise parameter requirements and related calculations for setting up the solar, wind, or combined power plants, based on seven selected project sites.

The important sides of the decision about setting up the renewable energy plant are the ecological and economical aspects. From the ecological point of view, power plants are measured in terms of bringing the environmental benefits – reduction of CO₂ in the atmosphere and costs of greenhouse gases reduction. The author looks at the parameters of CO₂ emission avoidance and the greenhouse gas emission reduction when using different types of wind turbines, solar panels, and hybrid wind-solar power plants. Similarly, each type of power plant equipment is

also analyzed from the financial point of view to see what is the financial return of investing into either wind, solar, or hybrid power plant in Poland.

All findings from the energetic, ecological, financial, and economic analyses and calculations on the usage of wind, solar, and hybrid power plants in Poland are summarized in the last chapter. This chapter also contains the recommendations on the types of wind, solar, and hybrid power plant equipment appropriate for Polish conditions.

In general, the book offers an interesting evaluation of using renewable sources of energy in Poland, through analysis of key aspects which have to be considered in the decision-making process for setting up of a wind, solar, or hybrid power plant.

The monograph presents the latest knowledge in science and technology focused on wind and solar power. It contains vocational text, which can be used in teaching and engineering practice.

Mária Vargová