

An 80 MW Wind Energy Farm in Wyoming

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Data To Be Used: Annual Wind Data for Multiple Years in a high wind Wyoming county

Abstract: This paper will detail the general design and operation of an 80-MW wind power plant in the high wind Carbon County of Southeast Wyoming. Using hourly wind data, the study will model wind profiles and perform parametric analyses of different design aspects. The research will discuss two possible configurations of 22 x 4 MW turbines or 30 x 3 MW turbines to determine the impact that an individual turbine's capacity can have on design and energy production/efficiency. The study will focus on analyzing the Annual Energy Production and Capacity Factor based on height and spacing. The goal of this study is to design the better of the two configurations after analyzing them to determine which will provide a better energy output.