

PAST DEVELOPMENTS OF LARGE WIND GENERATORS IN EUROPE

Ulrich Hutter

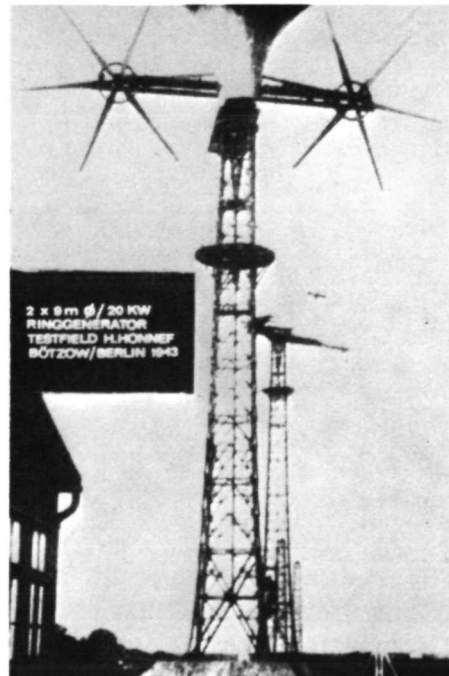
University of Stuttgart
Stuttgart, Germany

This presentation describes the more important large wind-driven power systems that have been proposed or built in this century in the various countries of Europe. Some of these are shown in the accompanying figures 1 to 9. The physical size, maximum power output, and other characteristics of each system were described with the aid of slides. The most important of the large-size wind-driven plants in Europe were built in Germany, England, Denmark, France, and Russia.

Also described, in some detail, was the 100-kilowatt wind-driven generator that was designed and built by the author in cooperation with the Allgaier-Works of Wurtttemberg, West Germany (figure 10). A short movie was presented to show the 100-kilowatt Hutter-Allgaier machine in operation. In figure 11 is displayed the measured output in kilowatts for various wind speeds. For comparison, the data of Andreau-Enfield-Cables wind generator system are shown.



30 m ϕ . 100 KW DC RUSSIAN WIND-TURBINE, YALTA, BLACK SEA, 1931.



2 x 9 m ϕ / 20 KW
RINGGENERATOR
TESTFIELD H.HONNEF
BÖTZOW/BERLIN 1943

Figure 1

Figure 2



Figure 3

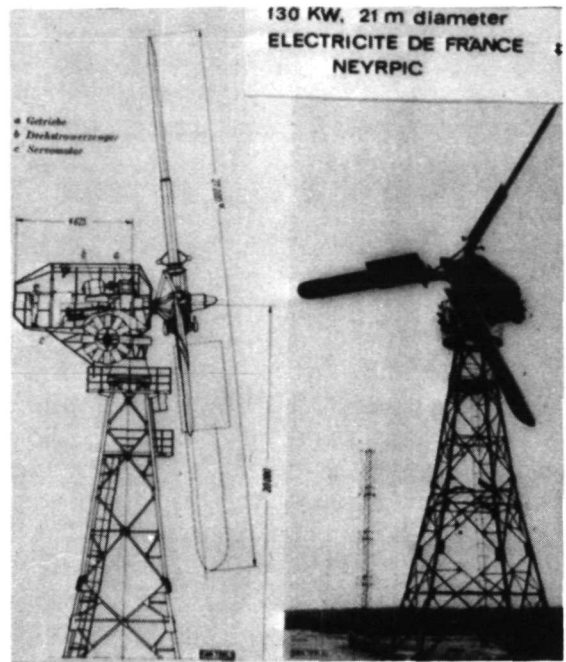


Figure 4



Figure 5

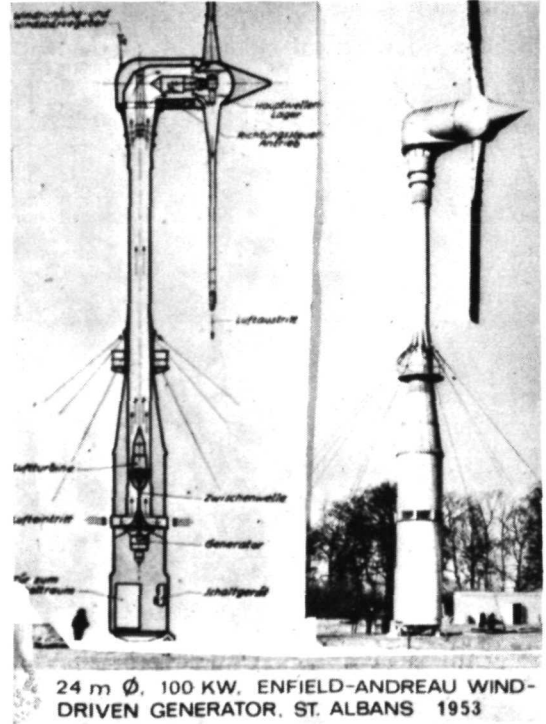


Figure 6

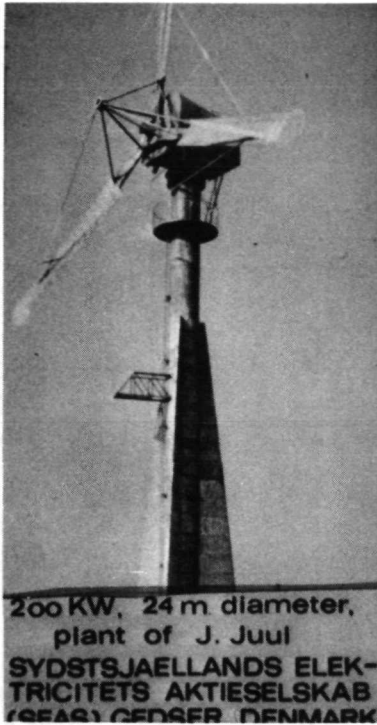


Figure 7

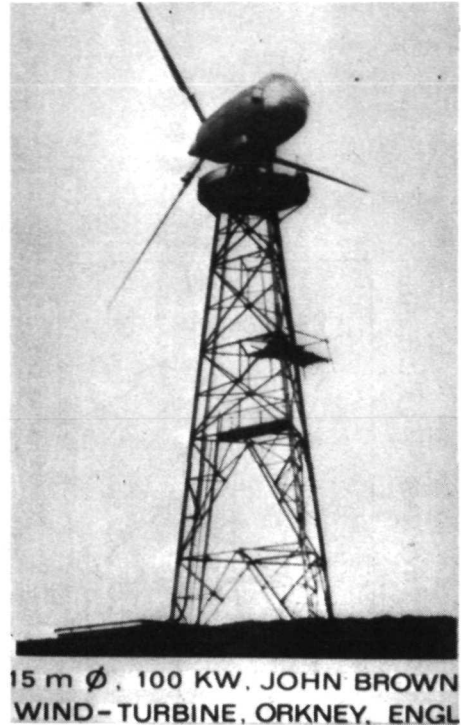


Figure 8



Figure 9

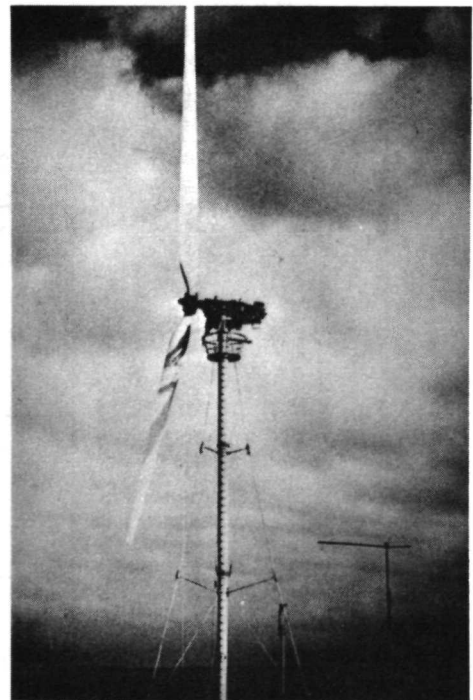


Figure 10

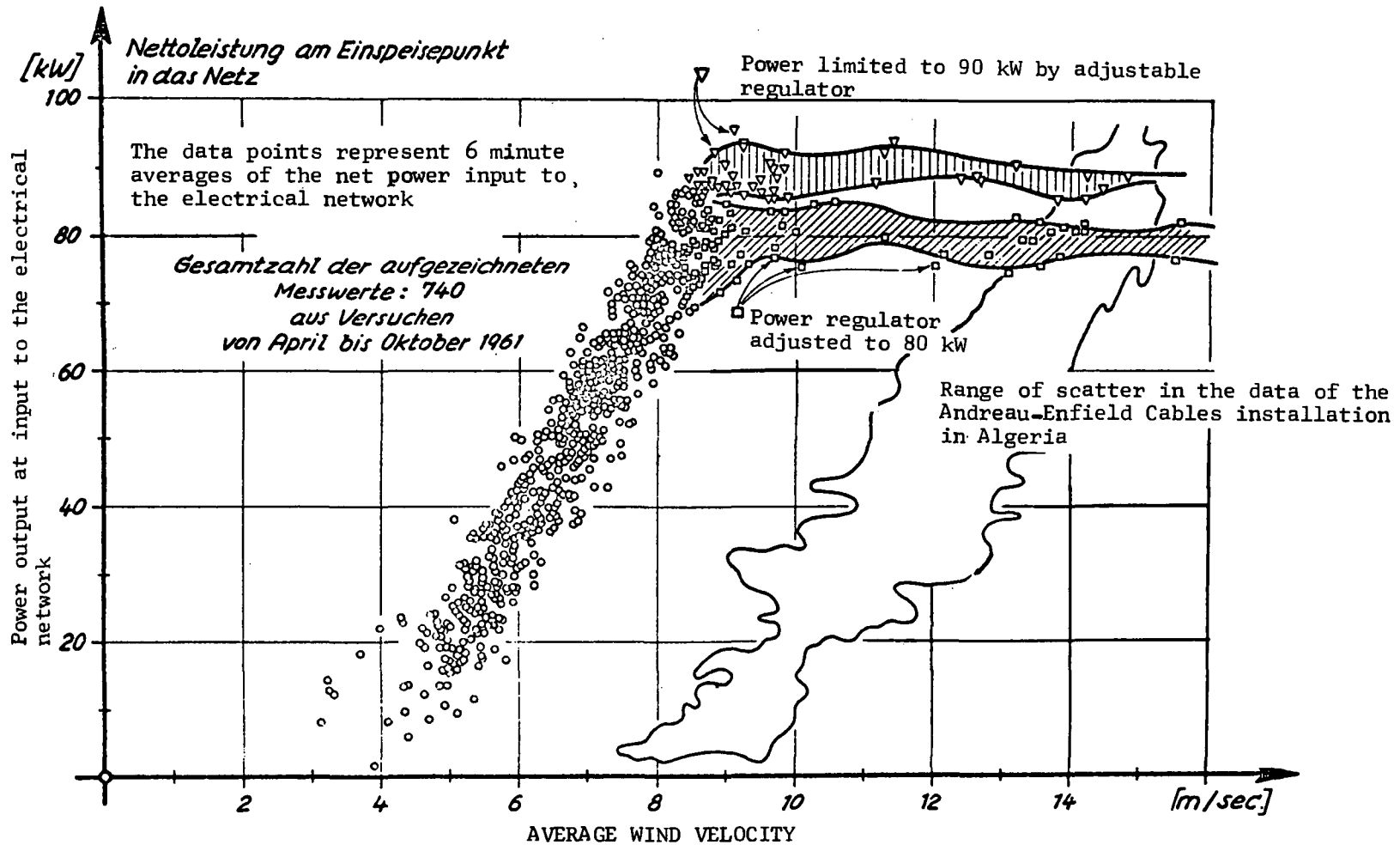


Figure 11.- The power output of the Hutter-Allgauer 100 kW wind-driven generator plant as a function of the average wind speed and a comparison with the performance of the 100 kW Andreau-Enfield-Cables wind generator.