

2021 Q4**(SCALE FACTORS, CHARTS)**

In the Wind Study question posted on January 11, we talked about how One Energy applies wake loss to the Gross Annual Energy Production (AEP) to calculate the Net AEP. The next step in determining a project's estimated production is to account for other potential losses and uncertainties (i.e., maintenance downtime, data measurement uncertainty, grid downtime, etc.) by applying P-Values. These values scale the Net AEP and result in the production level that the project is expected to meet or exceed that percentage of time. For example, the P50 production value is the production that One Energy expects the project to meet or exceed 50% of the time.

Level 1: One Energy has calculated the NET AEP for a two-turbine project as 9,172,000 kWh. The following scaling factors were determined:

P-VALUE	NET AEP SCALE FACTOR
P1	1.147
P50	0.947
P99	0.798

What is the production estimate for each P-Value? Round to the nearest thousand.

Level 2: A three-turbine project has produced the following kWh for its first two years of operation.

YEAR	PRODUCTION (kWh)
1	10,713,000
2	12,864,000

The P-Value production estimates for the project are shown in the graph on the next page. What are the closest P-Values for each year of the project's production?

