WIND STUDY

Wind Study is intended for grades 5-8 and 8-11
Questions posted on: Monday   Answers posted on: Friday
Find downloadable one pagers at www.oneenergy.com/one-energy-feed

2020A6   (DIVISION, TABLES)

L1: The total number of turbines the facility could potentially use is the site's consumption divided by one turbine's estimated annual production.

$$\# \ of \ turbines = \frac{Facility \ Consumption}{Estimated \ Turbine \ Production}$$

$$\# \ of \ turbines = \frac{25,000,000 \ kWh}{4,000,000 \ kWh}$$

$$\# \ of \ turbines = \ 6.25 = 6 \ turbines$$

L2:

$$Facilty \ Consumption = Turbine \ Production + Grid \ Production$$

$$Facilty \ Consumption - Turbine \ Production = Grid \ Production$$

MONTH	FACILITY CONSUMPTION (KWH)	TURBINE PRODUCTION (KWH)	GRID PRODUCTION (KWH)
Jan	2,191,000	1,504,000	687,000
Feb	1,042,000	1,040,000	2,000
Mar	1,721,000	1,297,000	424,000
Apr	1,451,000	1,348,000	103,000
May	2,173,000	719,000	1,454,000
Jun	2,484,000	728,000	1,756,000
Jul	2,505,000	500,000	2,005,000
Aug	2,488,000	563,000	1,925,000
Sep	2,343,000	626,000	1,717,000
Oct	2,210,000	1,103,000	1,107,000
Nov	2,280,000	938,000	1,342,000
Dec	2,112,000	1,493,000	619,000

The facility used 13,146,000 kWh from the grid over the year.

$$Wind \ Energy \ \% = \frac{Turbine \ Production \ (kWh)}{Facility \ Consumption \ (kWh)}$$

$$Wind \ Energy \ \% = \frac{11,859,000 \ (kWh)}{25,000,000 \ (kWh)}$$

$$Wind \ Energy \ \% = 47.4\%$$