2021A7 (NET VALUES, PERCENTAGES)

Level 1: The net energy purchased from the utility is determined by the equation below:

$$Energy\ Purchased\ from\ Utility\ (kWh) = Total\ Energy\ Consumed(kWh) - Wind\ Project\ Production(kWh)$$

Because the facility uses net metering, it does not matter if the turbines produce more energy than the facility uses on a given day. The total facility usage and wind project production should each be summed for the week.

$$Energy\ Purchased\ from\ Utility\ (kWh) = 514{,}900\ kWh - 453{,}318\ kWh$$

$$Energy\ Purchased\ from\ Utility = 61{,}582\ kWh$$

Level 2:

$$Energy\ Bill = Utiliy\ Consumption\ (kWh) * Utility\ Price + Wind\ Project\ Production(kWh) * Wind\ Proejct\ Price$$

$$Energy\ Bill = 61{,}582\ kWh * {}^{\$0.0625}/_{kWh} + 453{,}318\ kWh * {}^{\$0.055}/_{kWh}$$

$$Energy\ Bill = \$3{,}848.88 + \$24{,}932.49$$

$$Energy\ Bill = \$28{,}781.37$$

The percent increase is the difference between the two bills as a percentage of the bill with wind. To determine the percent increase, first determine the total bill if all energy was purchased from the utility.

$$Energy\ Bill = Facility\ Consumption\ (kWh) * Utility\ Price$$

$$Energy\ Bill = 514{,}900\ (kWh) * {}^{\$0.0625}/_{kWh}$$

$$Energy\ Bill = \$32{,}181.25$$

Then determine the difference between the two bills.

$$Bill\ Difference = Utility\ Only\ Bill - Utility\ \&\ Wind\ Bill$$

$$Bill\ Difference = \$32{,}181.25 - \$28{,}781.37$$

$$Bill\ Difference = \$3{,}399.88$$

Divide by the total bill with the wind turbines to determine the percent increase.

$$Percent\ Increase = \frac{Bill\ Difference}{Utility\ \&\ Wind\ Bill} * 100\%$$

$$Percent\ Increase = \frac{\$3{,}399.88}{\$28{,}781.37} * 100\%$$

$$Percent\ Increase = 11.8\%$$

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

A wind project at a net-metered facility.