

Rural Business Cooperatives Service • Rural Energy for America Program

## Alfalfa Farmer Saves on Diesel, REAPs Success with Off-Grid Solar

Mark Dunn, the operator of Railroad Valley Farms in central Nevada, had a unique challenge: how do you power irrigation pumps for 500 acres of alfalfa when your farm is off the grid in one of the most remote areas of the state?

With the help of a \$253,405 Rural Energy for America grant, Dunn developed and installed a system to meet the power demand that also saves money on diesel fuel.

Two 305 kW solar PV systems were installed in 2017-18 and are now fully operational, irrigating two separate alfalfa fields; a total of 500 acres. During its first full year in operation (2019) the system produced a combined 223,400 kWh in solar mode, saving 16,385 gallons of diesel fuel.

“The system is performing well,” Dunn says. “We used a little less power than we had projected due to a wet spring and time off for cutting, but the cost savings are real. We expect it will to save about \$1 million over its lifetime.”



*In FY 2017, Railroad Valley Farms in Nye County, Nevada, used a REAP grant to purchase and install two 305 kW solar PV systems. In its first year, with limited operations, 223,400 kWh were produced, irrigating 500 acres of alfalfa and reducing diesel use by 16,385 gallons.*

---

<b>Obligation Amount:</b>	\$253, 405 REAP Grant
<b>Date of Obligation:</b>	April 2017
<b>Congressional District:</b>	Representative Amodei, District 02 Senators Heller and Cortez Masto
<b>Demographics:</b>	Railroad Valley Farms is located in remote rural Nye County in central Nevada.; population 4
<b>Impact:</b>	This small-scale commercial solar photovoltaic system is powering irrigation for a 500-acre off-grid alfalfa farm in one of the most remote areas of Nevada. In its first year, diesel use was reduced by 16,385 gallons. The operator estimates the system will save over \$1 million in fuel costs over its lifetime.

---