Case Study — Leas Family Farms, IN

PVKIT® & ProteaBracket™

At-A-Glance

Project Name
Leas Family Farms

Location
Montpelier, IN

EPC
Midstates Energy Solutions (MES)

Engineer
Rex Collins Electric

Module Manufacturer
JinkoSolar

Inverters
SolarEdge

S-5! Supplier
Platinum Metal Products

Roof Profile
Exposed-Fastened Metal Roof

Industry
Agricultural

The Situation

Given the sharp increases in utility rates, the farmer wished to offset his electrical usage by installing a rooftop solar system.

The Result

By taking advantage of the Federal Investment Tax Credit, the farmer will receive a total return on investment within 5 years. The PVKIT and ProteaBracket system provided an aesthetically-pleasing, cost-effective PV mounting solution–saving him time and money on installation and materials, enabling such a short pay-back period.

Project Stats

Roof Measured: 34,000 square feet per building
Roof Pitch: 5/12
S-5! Products Supplied:

- PVKIT® (700)
- ProteaBracket™ (700)

The Project

Located in rural Indiana, Leas Family Farms operates a 2,000-acre farm that harvests corn, wheat and beans. Additionally, two hog barns supplement the farm's operations.

Mounted to the barn's south-facing exposed-fastened metal roofs are 243 – 410 watt solar panels secured in place by the **PVKIT®** and **ProteaBracket™**.

The 100kw PV grid-tied solar system feeds a single-phase meter electrical system that supplies the operation. Eight 11.4kW single-phase inverters provide DC to AC conversion to match utility service voltage.

The farmer will receive the Federal Investment Tax Credit, which allows for a tax credit of 26% of the total project cost plus an anticipated savings of approximately 64% or $14,241.37 in electricity spend at the current rate in the first year.

The Challenge

Leas Farms was concerned about farm equipment, vehicles, machinery and debris interfering with a ground mount system, not to mention taking up valuable farmland. The farmer wanted a system that would be safe and away from all the activity on the ground.

He also wanted a lightweight mounting system that could be engineered to handle the service loads (primarily wind uplift) of the solar modules and would keep his roof watertight.

Additionally, given the sharp increases in utility rates, he was looking to offset his grid electrical usage by installing a rooftop solar system that would enable him to reduce his overall electrical spend and a system that would pay for itself.

The Solution

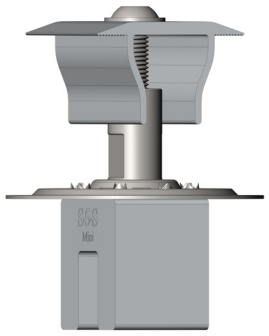
A local Amish metalworker recommended the PVKIT direct-attach™ solar solution paired with the ProteaBracket to provide a secure, economical system for attaching solar modules to the roofs.

The PVKIT was the lightweight solution (85% lighter than a traditional racking system) that local EPC contractor, Midstates Energy Solutions (MES) was seeking.

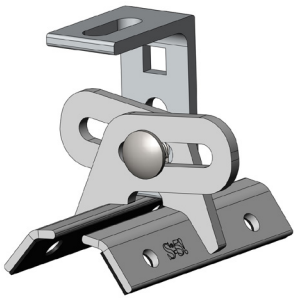
Featuring far fewer components than traditional mounting systems, the PVKIT allowed for quick and easy installation and enabled solar installers to “lay & play” PV modules with tested, engineered, cost-saving attachment. Matter of fact, MES estimated a labor savings of up to 40% in installation time.

The ProteaBacket, mounted directly onto the rib of the trapezoidal sheet, comes with a factory-applied, EPDM pad to ensure the weatherproof fit the customer wanted.

MES estimated the system would show a return on investment in just 5 years. The farmer now has an advantage over energy inflation by taking a variable energy cost and locking in a fixed cost for the 25 years following the initial pay-back period.



PVKIT®



ProteaBracket™

How Did S-5! Products Help?

- **Cut mounting material costs in half (compared to rail-mounting), and eliminated all freight costs**
- **Simplified assembly using only three components**
- **Reduced installation costs by eliminating the requirement for long, cumbersome rails**
- **Improved aesthetics**
- **All roof penetrations are tested by ASTM E2140—the most rigid static water testing in the construction industry**
- **Quality-assured by roof-lifetime warranty**

Long-Term Outlook

As utility rates are expected to rise at a rate of 2% per year, the farmer wanted a rooftop solar PV system that would enable him to supplement his power usage.

His cost savings will continue to grow each year with a total forecasted savings of more than $400,000 over the next 25 years.

“The S-5! PVKIT solar installation on the hog barn was quick and easy. By utilizing the PVKIT, we were able to reduce our installation time by 40% compared to traditional rail mounting. We will definitely be using the PVKIT on all our metal roof installations moving forward, and we truly appreciate all your customer support to ensure a smooth installation.”

—Darin Johnson, Midstates Energy Solutions