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PULSECONNEX CASE STUDY · SOLAR PV MONITORING

Two Colorado Churches Verify Solar PV Performance

How two churches used two-channel monitoring from PulseConnex to confirm their new solar PV arrays were working, without waiting for the utility bill.

The Challenge

Many organizations turn to solar to relieve high electric bills. With net metering rates that are hard to follow and utility data that can arrive up to a month after the fact, it is hard to know how well a solar PV array is actually performing.

Churches are a good fit for demand control, and two in the Denver area were planning large solar PV installations. Each wanted a way to see, in plain terms, whether the investment was doing its job.

How PulseConnex Helps

PulseConnex counts pulses directly from the meter, so it shows energy use as it happens instead of a month later. It does not measure the output of the solar array itself. Instead, its two pulse inputs let a site compare energy delivered by the utility with the building's total load on the same graph. When the utility line falls while the total load keeps rising, the difference is being supplied by the array.

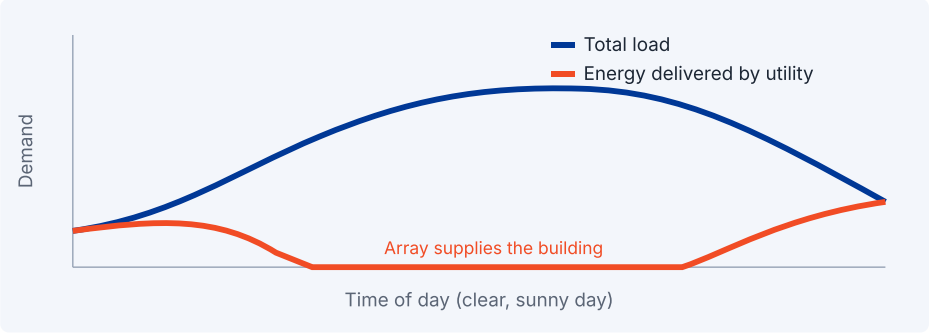
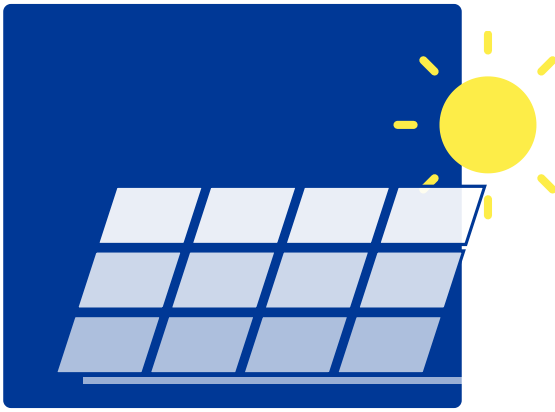


Illustration of the two-channel view on a clear day. Not actual customer data.

Advent Lutheran Church, Westminster

Advent Lutheran Church set out to become more energy efficient. It installed a demand controller, a solar PV array, and PulseConnex to monitor how well those measures worked.

On clear, sunny days, church administrators can see the building's total load rising through the morning while energy delivered by the utility



AT A GLANCE

Customers	Advent Lutheran Church and Arvada United Methodist Church
Location	Westminster and Arvada, Colorado
Application	Verifying solar PV performance and comparing before and after
Product	PulseConnex Real-Time Demand Monitor
Result	Same-day confirmation that the arrays supplied the building's energy

drops to zero by mid-morning. Whether they are looking at live data or load profile history, the graph confirms that the array is supplying all of the church's energy on those days.

Arvada United Methodist Church, Arvada

Arvada United Methodist Church took a more cautious approach. It installed PulseConnex several months before its solar PV array to build a record of its energy use without solar.

With the array in service, the church compares the same day a year apart. Before the installation, energy delivered by the utility tracked the building's whole load. After it, utility-delivered energy drops to zero whenever the array is providing 100% of the church's energy. The church can see for itself that the investment is paying off.

The Results

Both churches have visual, same-day confirmation that their solar PV systems are working as expected, and a before-and-after record that supports the decision to invest. Neither has to wait for the utility bill to find out.

For utilities with net-metering customers and for solar installers, PulseConnex is a simple way to help customers see what their new array is doing, in real time or from accurate historical pulse data.

BENEFITS

- Visual confirmation of when a building is running off the grid
- Utility-delivered energy and total load compared on one graph
- Before-and-after load profiles to verify a solar investment
- Live and historical data without waiting for the utility bill

See your peak before it sets your bill.

PulseConnex Real-Time Demand Monitor from Radian Research

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