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CUSTOMER SUCCESS STORY



## Alamosa

### Largest U.S. Photovoltaic Power Plant Deployed for Xcel Energy

Headquartered in Minneapolis, Xcel Energy is an investor-owned utility with regulated operations in eight Western and Midwestern states. Xcel Energy is a major energy player with annual revenues (2007) of \$10 billion and 12,000 employees that deliver a comprehensive portfolio of energy-related products and services to over 5.1 million customers.

Xcel Energy prides itself on being a forward-thinking, progressive utility company that includes renewable energy in its resource mix. “The last couple of years,” said Chris Pardington, Manager of Electric Area Engineering for Xcel Energy, “our goal has been to be a leading technology company and a leader in green energy.” These goals were accelerated by legislative mandates from the state of Colorado.

**Challenge** Pardington explains, “In 2004, the voters in Colorado approved Amendment 37 which required investor-owned utilities in the state to derive 10% of their energy from renewable sources by the year 2015. Since then, that number has been increased to 20% by the year 2020. Four percent of that 20% must come from solar energy.

“We had hydro and wind, but we didn’t have solar.” The company selected SunEdison as its vendor for its central solar project near Alamosa, entering into a Solar Power Services Agreement. Under this agreement, SunEdison builds, owns, operates, monitors and maintains the solar facility and Xcel Energy buys the solar power generated by the plant for 20 years along with the renewable energy credits.

In September of 2006, Xcel Energy purchased a parcel of land in Alamosa, Colorado. “The San Luis Valley of Colorado,” explains Pardington, “is one of the highest intensity solar radiation areas in the United States.” The goal was to begin construction of the solar plant in January 2007 and wrap up the project by December 31, 2007. It took until the end of March for contracts and purchase agreements to be completed, pushing ground-breaking to April. Regardless, SunEdison still completed the project ahead of the scheduled completion date.

**Solution** The Alamosa PV solar farm, built in partnership by SunEdison and Xcel Energy, is an 8.22 MW facility over 82 acres of land in Alamosa and San Luis Valley, Colorado. The facility houses 72 SOLON-Mover dual axis tracking arrays with concentrating solar panels, 24,384 polycrystalline panels mounted on single axis tracking arrays, and 2,224 polycrystalline panels mounted on seasonal adjustable racks. The facility generates 17,000 MWh annually, delivering sufficient clean energy to power 1,500 homes. The Alamosa PV solar farm will generate enough clean energy to remove the carbon emissions produced by 2,840 cars driving 12,500 miles annually or roughly 710 million miles over 20 years.



UTILITY



# Project Profile: Alamosa

**Industry:** Energy/Utility

**Location:** Alamosa, Colorado

**Company:** Headquartered in Minneapolis, Xcel Energy is a major U.S. electricity and natural gas company with regulated operations in eight Western and Midwestern states. Xcel Energy provides a comprehensive portfolio of energy-related products and services to 3.3 million electricity customers and 1.8 million natural gas customers.

**System Type:** Three distinct solar technologies: single axis tracking arrays, fixed mount arrays and dual axis tracking arrays with photovoltaic concentrator technology.

**System Size:** 8.22 MW

**Capital Outlay:** \$0

“SunEdison delivered all the paperwork that we asked for on time and worked with us on requested modifications,” said Pardington. “Once construction started, I was in constant contact with our SunEdison project manager. When the first 3 MW were installed and the first inverter went online it went very smoothly; we got that online in a single day. SunEdison completed the remainder of the work without any oversight from me, except that I was sitting at my computer watching the output of the generation as it came online.”

Pardington continued, “I had done some studies prior to putting this online because this is a lot of generation to be putting on a substation in a rural area on the tail end of some very small 69 kV transmission lines. I was expecting the automatic voltage control equipment at the substation to operate quite a bit. I was surprised to find that as the system came online,

the voltage regulating equipment was operating even less than it did before. The other day I saw 5.5 MW going back through the transformer and the transformer had only moved one step. The voltage regulation problems I was anticipating never materialized, and it has made me a lot more comfortable with large solar installations.”

**Benefits** “Colorado voters spoke up in 2004 and said they wanted this, and it’s our duty to bring it to them,” stated Pardington. “The project exposure has obviously brought us favorable publicity. In the end, it was amazing that SunEdison covered 82 acres in solar panels, using three different technologies in eight months, start to finish.”

**About SunEdison:** SunEdison is North America’s largest solar energy services provider, and operates across a global marketplace. We deliver predictably priced solar energy services to complement your existing utility services. Unlike other solar companies, SunEdison provides a fully managed service; we finance, install, own, operate, monitor and maintain photovoltaic power plants for our commercial, government and utility customers without the high capital outlays traditionally associated with solar energy.