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Department of Energy

# Mirror Film Company Has 'Concentrated' Plans for Expansion

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In concentrating solar power, glass is king—but it's fighting to hold on to its crown.

The reflectivity of glass mirrors makes them a great choice for focusing sunlight onto a heat generator. However, the glass mirrors can be expensive and heavy -- reducing their ability to compete with conventional energy sources.

ReflecTech Inc. has an option: a silvered polymer-based film that does the same job, but with half the weight and cost. Using that film, the company can make 100,000 square feet of mirror panels per year at its factory in Arvada, Colo.

Through an Advanced Manufacturing 48C tax credit through the Recovery Act, the company will expand that capacity by 100 times—to 10 million square feet of mirror panels per year.

## **Expanding to meet demand**

Alison Mason, director of marketing communications for ReflecTech's parent company, SkyFuel Inc., says the company is moving to mass production of mirror panels from its

initial demonstration-scale capacity. It has already made the mirror film in large volumes for three years.

“We are expanding the facility to meet increasing demand from the concentrating solar power industry, which is projected to grow by 10 gigawatts between now and 2014,” says Mason, who estimates the total expansion cost to be about \$2.5 million.

### **Collaborative research**

ReflecTech opened its doors in 2007 and currently has three people making mirror panels. Mason says the expansion work, scheduled to begin in October and end in spring or summer of 2012, will eventually allow the factory to employ 43 people. She says the factory will over its lifetime produce enough mirror film to prevent 140,000 metric tons of greenhouse gas emissions.

The mirror film was developed through several Collaborative Research and Development Agreements between ReflecTech and the National Renewable Energy Laboratory in nearby Golden, Colo.

### **Science pays off**

The mirror panels will be used in parabolic troughs (including SkyFuel’s SkyTrough), a type of utility-scale concentrating solar power generator. ReflecTech’s mirror film is intended to improve on conventional glass mirrors used in those systems.

Glass has the right reflectivity for the job, but it has several problems, including the potential to break when left in harsh outdoor environments for long periods. Not only do broken mirrors reduce the amount of sunlight collected, but it can damage other parts of the system.

According to ReflecTec, the mirror film has roughly the same reflectance as glass (94 percent) and is made of a flexible polymer, making it shatterproof, lightweight and easy to fit onto a curved surface.

Even attached to an engineered aluminum base, Mason says, it’s also 49 percent less expensive than glass.

“Compared to glass mirrors, silvered polymer films are much lower in weight, substantially lower cost, unbreakable and easier to manufacture and install,” she says.

## What does this mean for me?

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