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Educational Shorts

Precious Metals Insights, Facts, and Resources

Silver's Powerful Role in Solar

Silver has the highest electrical and thermal conductivity of all metals and is malleable. These qualities make it a star in solar panels. And because solar is an important renewable energy, the gray metal is integral to our transition to a green economy and our very future.

Quick Basics

Sunlight is composed of particles of solar energy called photons. The photovoltaic (PV) cell--the building block of the solar panel--is covered on both sides with silver paste. When photons strike the PV cell, the photons can reflect off the cell, pass through the cell, or be absorbed by the cell's semiconductor material. Only the absorbed photons (which came from sunlight that hit the cell directly) provide energy to generate electricity. [1]



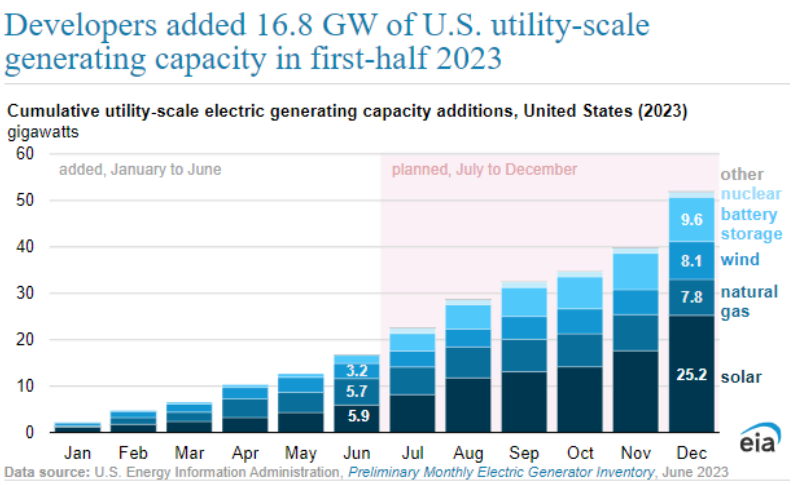
Silver paste for a solar cell.

Looking Back

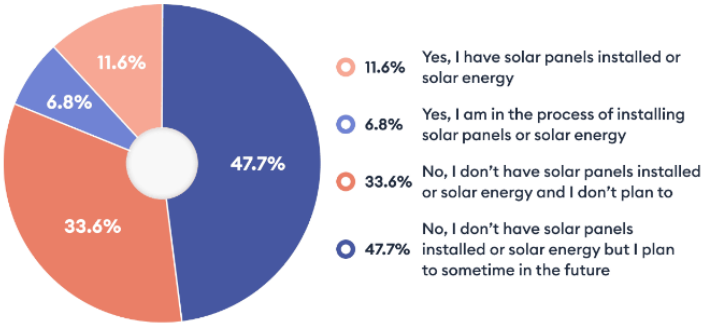
Did you know that the first practical PV cell was developed in 1954 by Bell Telephone, and that in the late 1950's they were being used to power US space satellites? While today most solar panels are connected to the grid, in the 1970s they were used to provide electricity in remote areas that lacked power lines. [2]

Today and Tomorrow

Solar is growing at the utility level.

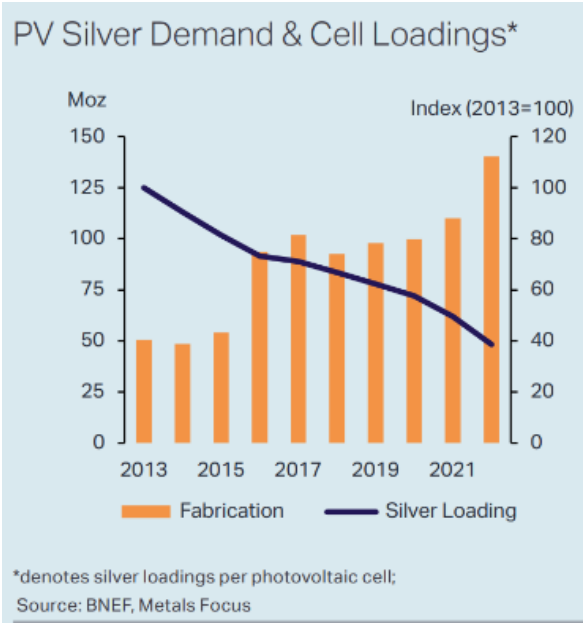


Homeowners are also interested in switching to solar.





Silver Demand in Photovoltaics



Silver consumption in photovoltaics has tripled in the last dozen years to 140.3 million oz.-- this despite thrifting by manufacturers because it is the second largest cost component in PV cells (after silicon wafers). However, the transition to the next generation of cells will require heavier silver loadings per PV cell. Manufacturers, in their thrifting exercises, have found that silver is the best metal to use to optimize energy output per panel.3 (footnote, World Silver Survey 2023, p.52)

If you would like to learn more about solar, check out Solar Photovoltaic Technology Basics. For more information on silver's role across industries, the Silver Institute provides a wealth of information.

To learn more from our educational resources, visit us at FideliTrade.com.

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1 Solar Explained, Photovoltaics and Electricity, U.S. Energy Information Administration

2 ibid

3 World Silver Survey 2023, p.52

Jennifer Ropiak is a precious metals market specialist with over 30 years' experience, including 20 years of trading (15 at Morgan Stanley). In 2014, Jennifer launched Trusted Partner Metals, an independent consultancy whose clients span the metals industry. Services include expert witness opinions in precious metals cases.

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