

Solyndra: \$500 Million down the drain. What Happened?

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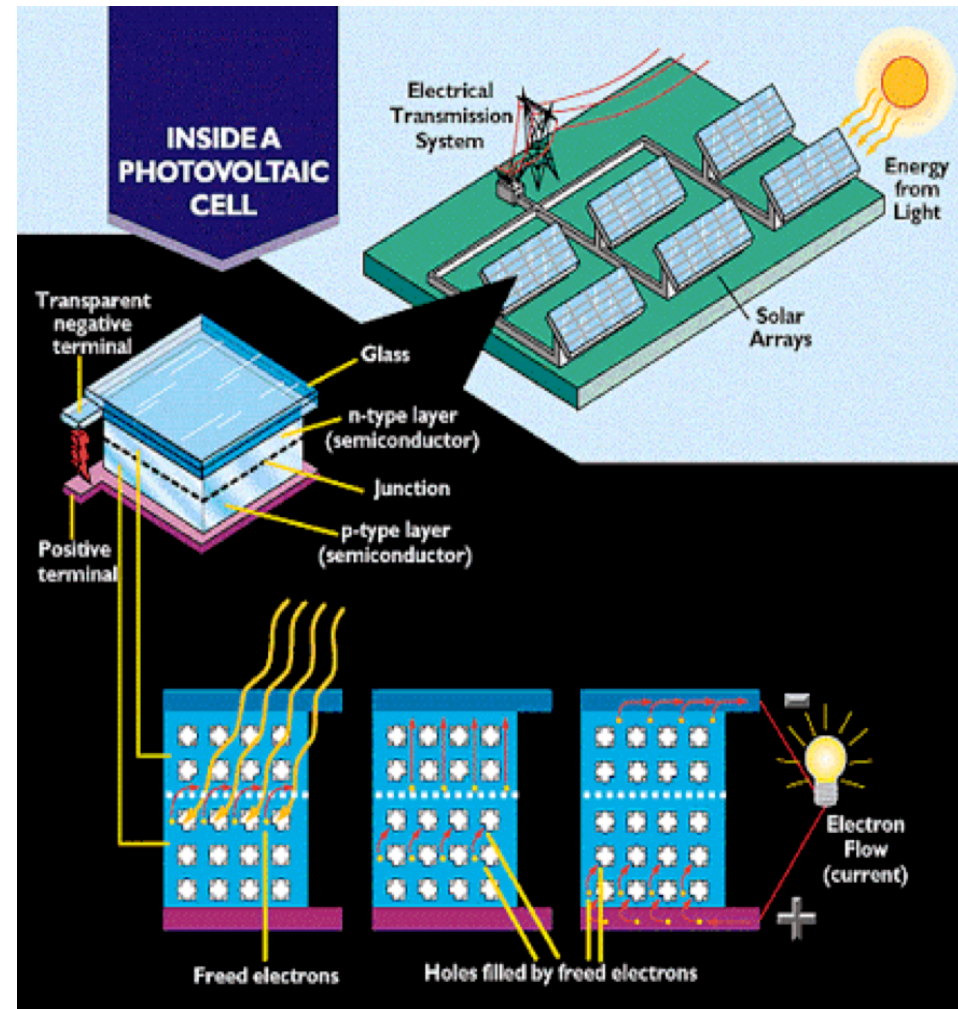




Who (or what) is Solyndra?

- Promising photovoltaics company funded by Obama 2009 stimulus bill
- Touted for unorthodox solar panel design
- Currently in bankruptcy

What is a photovoltaic cell?



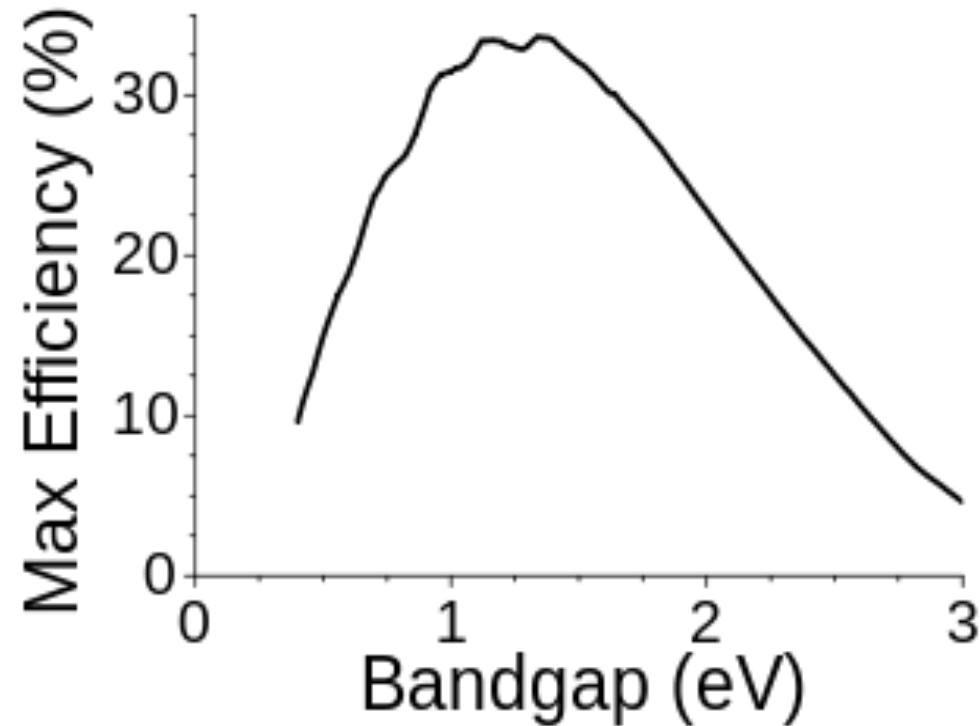
http://www.fenyienergy.com/?page_id=189

Typical Solar Panels



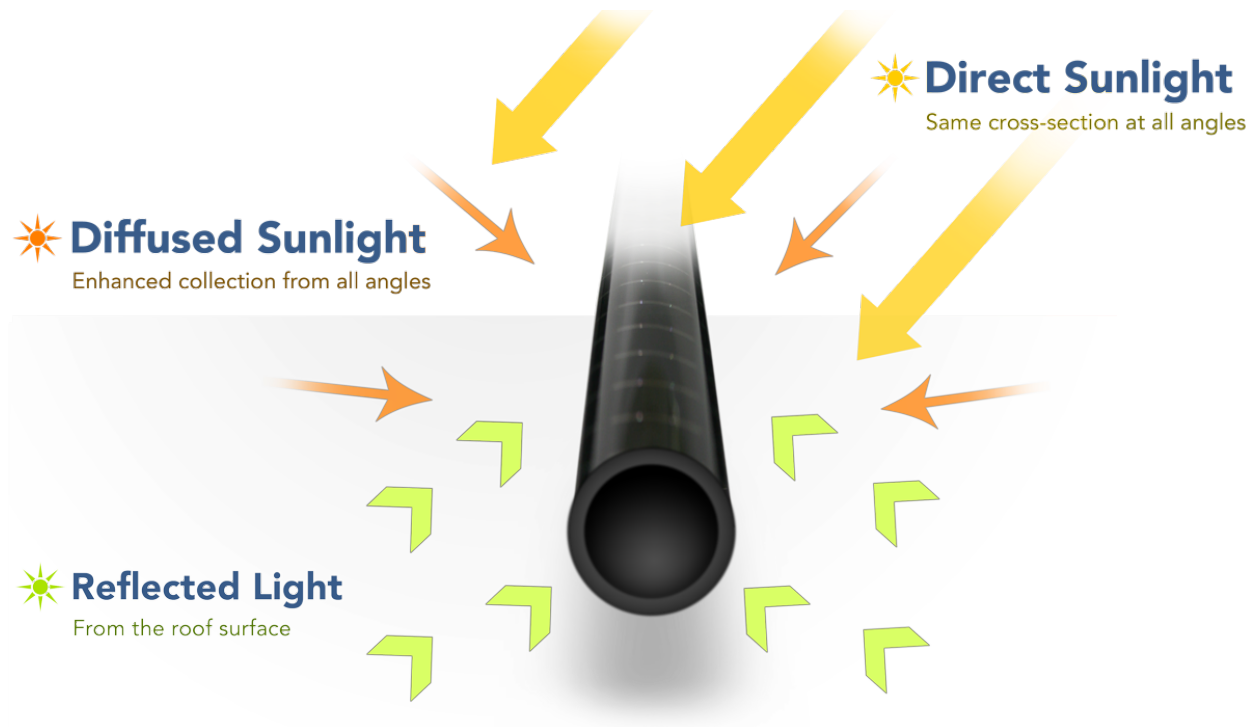
- Silicon based
 - Efficiency rate of 14 -20%
 - Accounts for 80% of the market
- Thin Film cells Copper Indium Gallium Selenide (CIGS)
 - Efficiency rate of 10%
 - Accounts for 15% of the market

Shockley-Queisser Limit



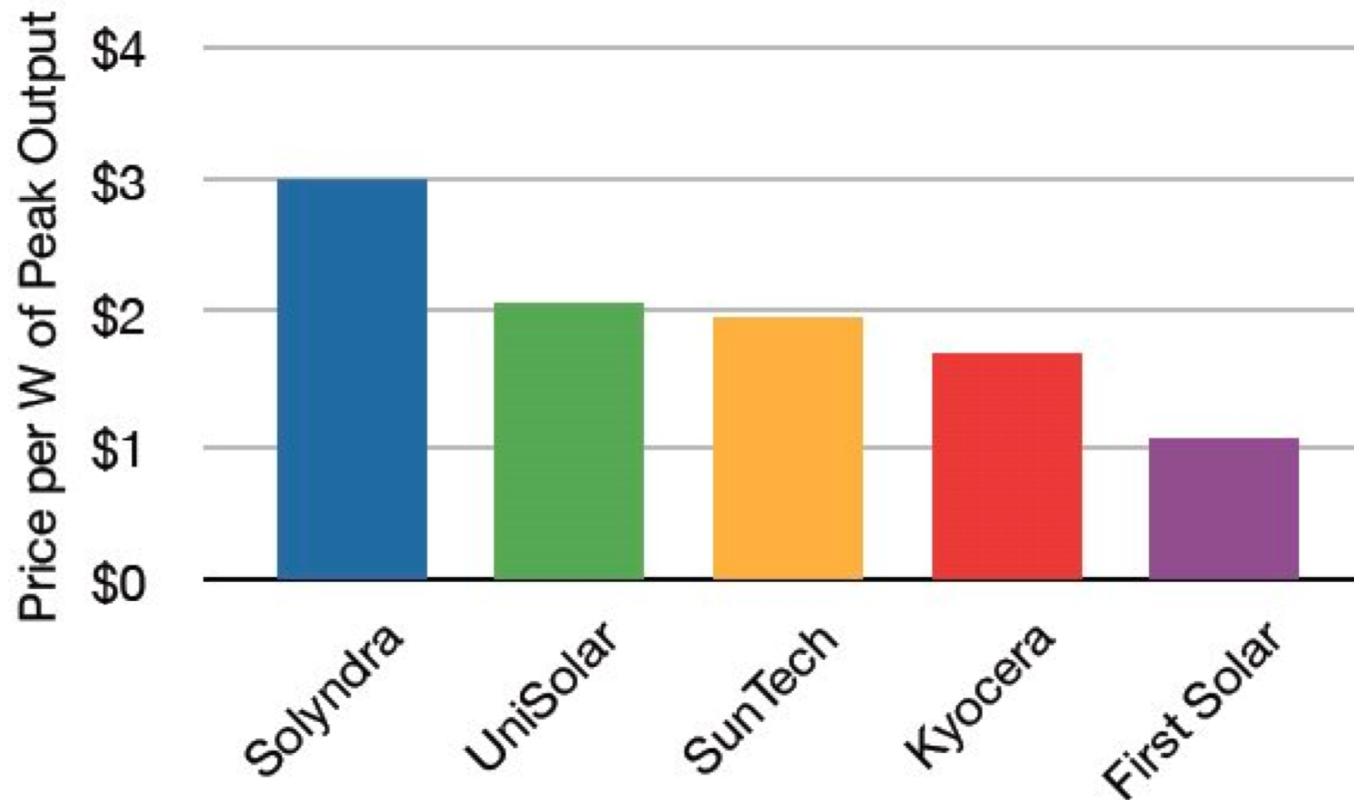
- Theorizes the maximum solar cell efficiency to be ~33%
- Losses due to
 - Black Body Radiation
 - Recombination
 - Spectral losses

Solyndra's Solar Panel...



- Lightweight
- Cylindrical shape

Is what killed Solyndra



- Difficult to produce
- Was too expensive
- Wasn't good enough to justify the price tag

Where does the Government come into play?

- Recognized by the Department of Energy in 2007
 - Named one of 16 Green companies for \$4 billion in loans
- Obama's stimulus 2009 program
 - Awarded Solyndra a \$535 million loan in installments
 - Gave about 90% (~500 million) before Solyndra declared bankruptcy in 08/31/2011

Aftereffects

- Outcry from media on the failure
- Ammunition for opposing party
- Loans from the federal government lost
- Solyndra was investigated by FBI
- Life goes on to compete in solar industry

Sources

- Solyndra. "Solyndra Offered \$535 Million Loan Guarantee by the U.S. Department of Energy." *Solyndra*. Solyndra, Inc, 20 Mar. 2009. Web. 19 Nov. 2012.
<http://www.solyndra.com/2009/03/us-department/>.
- Staff. "Polysilicon Prices Hit Record Low in 2011; Will Head Even Lower, Enabling \$0.70/W PV in 2012." : *Greentech Media*. Greentech Media, 10 Feb. 2012. Web. 19 Nov. 2012.
<https://www.greentechmedia.com/articles/read/polysilicon-prices-hit-record-lows-in-2011-will-head-even-lower-enabling-0>.
- Bathon, Michael. "Solyndra Lenders Ahead of Government Won't Recover Fully." *Bloomberg*. Bloomberg, 17 Oct. 2012. Web. 19 Nov. 2012.
<http://www.bloomberg.com/news/2012-10-17/solyndra-lenders-ahead-of-government-won-t-recover-fully.html>
- Scansen, Don. "Solyndra: Its Technology and Why it Failed" IP – Research Group EDN Network, 21, Nov, 2011. Web. 19 Nov. 2012.
<http://www.edn.com/design/power-management/4368710/Solyndra-its-technology-and-why-it-failed>