

Solar power much cheaper to produce than most analysts realize, study finds

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The public is being kept in the dark about the viability of solar photovoltaic energy, according to a study conducted at Queen's University.

"Many analysts project a higher cost for solar photovoltaic energy because they don't consider recent technological advancements and price reductions," says Joshua Pearce, Adjunct Professor, Department of Mechanical and Materials Engineering. "Older models for determining solar photovoltaic energy costs are too conservative."

Dr. Pearce believes solar photovoltaic systems are near the "tipping point" where they can produce energy for about the same price other traditional sources of energy.

Analysts look at many variables to determine the cost of solar photovoltaic systems for consumers, including installation and maintenance costs, finance charges, the system's life expectancy, and the amount of electricity it generates.

Dr. Pearce says some studies don't consider the 70 per cent reduction in the cost of solar panels since 2009 . Furthermore, he says research now shows the productivity of top-of-the-line solar panels only drops between 0.1 and 0.2 percent annually, which is much less than the one per cent used in many cost analyses.

Equipment costs are determined based on dollars per watt of electricity produced. One 2010 study estimated the this cost at \$7.61, while a 2003 study set the amount at \$4.16. According to Dr. Pearce, the real cost in 2011 is under \$1 per watt for solar panels purchased in bulk on the global market, though he says system and installation costs vary widely.

Dr. Pearce has created a [calculator program available for download online](#) that can be used to determine the true costs of solar energy.

The Queen's study was co-authored by grad students Kadra Branker and Michael Pathak and published in the December edition of *Renewable and Sustainable Energy Reviews*.

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