

## Photovoltaics: America's Smart & Clean Energy Solution

One of the biggest issues currently facing this country is the matter of energy consumption. As the population grows, energy consumption is ever increasing. Fossil fuels currently provide 83% of the nation's energy, resulting in a staggering five billion megatons of CO<sub>2</sub> being emitted annually. Renewable energy accounts for only 8%, with only 1% of that coming from solar energy. Although solar photovoltaic (PV) cells are the least used source of energy, they have the lowest emissions of NO<sub>x</sub>, SO<sub>x</sub>, and CO<sub>2</sub>, emitting only 0.007g/kWh, 0.02g/kWh, and 5.3g/kWh (respectively).

In addition to drastically lower greenhouse gas emissions, solar PV cells are the smartest solution to the energy crisis because they use a relatively perpetual energy source. Compared to fossil fuels that may only be around for another few hundred years, the Sun is estimated to have a lifespan of five billion years. The Sun is a viable, unlimited, and free source of energy, not localized in any particular location. Unlike coal and other fossil fuels, it is completely accessible and free to use anywhere on the globe. Additionally, the benefits of solar cells are numerous as they eliminate greenhouse gas emissions, noise pollution, and the risk of escalating fuel prices.

Solar energy has not reached its maximum installation capability due to various opposing forces. The most inhibiting matter is the economic factor of the photovoltaic cells – they are currently fairly expensive to produce. As efficiency technologies increase, the price per kilowatt-hour of solar PV electricity and

installation continually decreases. As of 2013, the cost of electricity from solar PV cells were \$0.11/kWh, a substantial decrease from 2000 in which the price was almost four times that much. These advancements will help solar PV electricity reach grid parity and become competitive with the non-renewable resources that currently hold the majority in the energy portfolio.