

Project: Grid connected inverter

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Abstract

The purpose of this project is to develop and build a DC-AC inverter which transfers photovoltaic (PV) energy into the grid. This small-scale, roof-top grid-connected inverter should decrease the amount of electricity being consumed from the grid, and even "push" the unused sun-power back to the electric company (which, in turn, can conduct this power to another consumer).

By using "green" power sources (even only on a residential scale) we would be able to reduce the amount of electricity being created by the electric company (which uses impure, harmful, sources to produce its power), and in that way, help keep our world cleaner. In the future (when PV cells will be cheaper), lower electricity bills at the end of the month are a possibility.

Unlike most inverters nowadays, the principle of this inverter is to supply current (and not voltage) to the grid, in the same phase and frequency as the grid voltage.

For accurate operation of the inverter, it must have control; here we'll use an analog controller—the MC34066.



