

**Announcement**  
**The 2005 International Future Energy Challenge**

The 2005 competition addresses two broad topic areas: (A) Single-Phase Adjustable Speed Motor Drive and (B) Utility Interactive Inverter System for Small Distributed Generation, respectively described as follows:

- A. Single-Phase Adjustable Speed Motor Drive:** Innovations in motors and motor drive systems that produce deep cuts in losses and costs for home (appliance) use, or that could replace “universal motor” brush machines in residential applications. Target hardware costs are US\$40 for a combination of motor, power electronic driver, and controller that can operate from a single-phase residential source, deliver rated shaft load of 3/4 HP (or 500 W) at 1500 RPM, exhibit a useful speed control range of at least 150 RPM to 5000 RPM, and provide power efficiency of at least 70% for loads ranging from 50 W to 500 W at a specified speed.
- B. Utility Interactive Inverter System for Small Distributed Generation:** The objective of this competition is to improve and foster innovation in the design of flexible utility interactive inverter systems for small distributed generation. The inverter must be efficient and comply with requirements for harmonic control, interconnection, and safety standards. The inverter must be capable to operate in typical voltage and frequencies, grid-connected or stand-alone. Target hardware costs are US\$200 for an inverter that can operate from a dc input voltage varying from 30 volts to 60 volts, under constrained input power varying from 250W to 1000W, to a single-phase utility line 110/240V either 50Hz/60Hz, with efficiency of at least 90%.

Participation is on a proposal basis. Those schools that are interested must submit a proposal no later than April 10, 2004. Each university is limited to only one topic area. Schools with successful proposals will be notified by May 15, 2004. Student teams will then carry out the work and prepare hardware prototypes and reports. First and second progress reports are due November 1, 2004 and February 1, 2005, respectively. Final progress reports are due May 1, 2005. By May 15, 2005, the judging panel will select a group of teams as Finalists. These teams will be invited to a competition event that will begin August 15, 2005. A Final Report will be due at the competition event. **Prizes totaling at least \$25K are expected to be awarded in each competition.**

For further information, please visit <http://www.energychallenge.org>.

Sponsors include the IEEE Power Engineering Society, Industry Applications Society, Power Electronics Society, and Industrial Electronics Society, and the National Renewable Energy Laboratory.