



## APEC Meeting in Mexico City

CAE presented a paper at the recent APEC workshop meeting on Distributed Generation with the title, "Adopting DG, The Case for New Zealand".

The presentation gave the delegates a review of the study methodology and progress to date. The emphasis was that the experience gained from the New Zealand country study would be helpful for member economies of APEC to undertake their own assessment of the opportunities for different forms of DG. The paper is available from the CAE website ([www.caenz.com](http://www.caenz.com)).

New Zealand was well represented with Iain Sanders, IRL, another speaker and Robert Tromp, EECA, attending the expert group on energy efficiency & conservation

(EGEE&C). The DG workshop was a jointly organised by the EGEE&C and the expert group on new & renewable energy technology (EGNRET).

Other invited speakers covered the subject areas of DG Technologies, Barriers to Deployment, and Applications of DG. The workshop concluded with a plenary session on the workshop outcomes and to identifying what might be the next collaborative project with DG (or DER — distributed energy resources) within APEC.

### Company GHG Reduction

BP is living proof that companies can accomplish significant greenhouse gas reductions if they try. The company has cut emissions from its own operations to 10 percent below 1990 levels, and achieved its goal eight years early. BP achieved its cuts at no cost, primarily by increasing energy efficiency in its operations. The company notes, however, that with its anticipated growth, it will require diligence and continued efficiency improvements to hold its emissions levels constant. See the BP press kit, with links to the press release and a related speech at: [bp.com/centres/press/stanford/index.asp](http://bp.com/centres/press/stanford/index.asp)

### Centre for Advanced Engineering

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- is based at the University of Canterbury campus
- is governed by a board of directors representing industry and academia
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For more information on our energy programme work, visit the CAE website: [www.caenz.com](http://www.caenz.com)

# MEMS (microelectromechanical systems)

Engineers making the tiny silicon-based devices known as MEMS- microelectromechanical systems-are also looking for a power source for their creations. And some think nuclear batteries could be just the thing. MEMS will be created by the billion. And even if only a small proportion of them are nuclear powered, this could mean hundreds of thousands or possibly millions of nuclear batteries being used in all kinds of places.

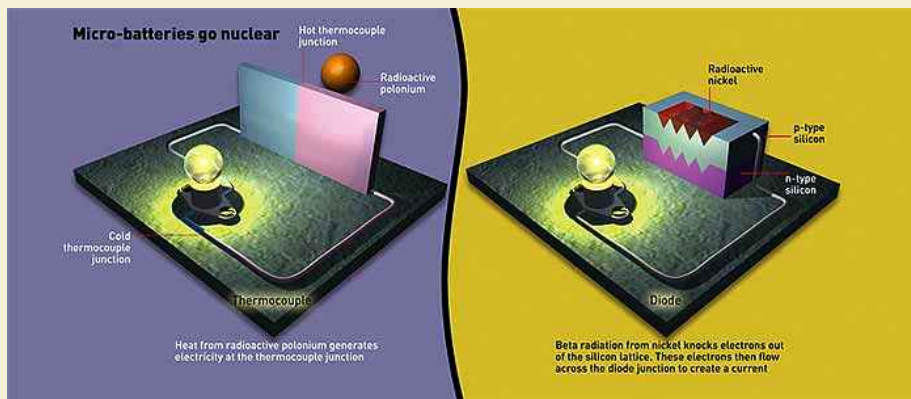
It is interesting to see that even at such a minute scale, there is competition between solar and nuclear technology as there is in the international power generation field!

One wonders how it was in the Becquerel household given that Alexandre-Edmond Becquerel (1820-91) observed the photovoltaic effect in 1839; his son, Antoine-Henri (1852-1908),

shared the 1903 Nobel Prize in Physics for the discovery of spontaneous radioactivity.

Autonomous sources of micro-energy can today serve us in less exotic products than MEMS. A large range of primarily indoor solar products already exist which can provide the benefits of increased reliability than primary or rechargeable secondary cells and of course less waste of the same batteries. The range of solar powered products include alarm clocks, office staplers, scales, kitchen whisks, torches, meters, radios, indoor/outdoor thermometer and decorations not to mention the ubiquitous calculators and watches.

(Source: New Scientist)



## DOE Awards

DOE announced last week its award of \$9 million to five industry teams to conduct research, development, and testing of distributed energy resources in the data processing and telecommunications industries.

Among the data centre projects, the Durst organisation will combine gas turbine generators and steam-driven absorption chillers to provide highly reliable electricity and cooling for a new data centre in Manhattan. (Located on West 57th Street, it was the first major commercial real estate project to get underway in New York since the events of September 11th.)

Honeywell will also use an absorption chiller in a data centre at the University of Miami, but will combine it with five microturbines. And Sure Power Corporation will develop its own approach for highly reliable data centre energy needs and install it at an Exodus Internet data centre near Seattle, Washington.

Meanwhile, the Electric Power Research Institute's Power Electronics Applications Centre (EPRI-PEAC) will develop a methodology to help end users, such as these data centres, compare the value of DER technologies with traditional power management options.

See the DOE press release at: [www.energy.gov/HQPress/releases02/aprpr/pr02056.htm](http://www.energy.gov/HQPress/releases02/aprpr/pr02056.htm).