Power-Gen International 2001

In recent times the focus of the PowerGen Conference has been technology, either emerging distributed generation initiatives or the larger combined cycle gas turbines, played out in the context of a fundamental shift from steam to gas turbines.

This year's conference was about collaboration, both technical and commercial, with a focus in three primary areas, themselves a simple reflection of the key DG dilemmas.

Distribution Channel
To date, most of the products that have been promoted are in the 30-100kW range and are intended for application in small commercial establishments, a class of customer most affected by deregulation initiatives and a group with few real options. Small commercial customers have an on-peak load, poor load factor and, National Accounts aside, have little or no purchasing leverage.

Most of the equipment developers do not have an established distribution capability, nor can they afford to create one. There are insufficient sales and service opportunities to support dedicated outlets, and these companies must rely on some sort of existing distribution channel to build a critical mass.

The ESCo's, for all their presumed capability, are focusing on larger commercial and industrial accounts, because their business model is far too costly to be effective in a smaller commercial setting.

Funding
The venture funding for these technologies is in an extended pause. Money is available, but valuations are such that developers are looking for strategic partners as a preferred source of funds.

Technology
The current microturbine offerings claim 26-28% efficiency and carry a retail price of at least $1000/kW. The manufacturers are focused on cogen and "opportunity fuels" as early opportunities, and to add economic value to an otherwise marginal return on investment.

For me, the most intriguing aspect of the PowerGen Show was the various collaborations in that were in evidence that seem to be addressing these issues.

Commercial collaborations includes Cummins packaging and marketing the Capstone engine, CAT and FuelCell Energy forming a commercial alliance, Turbec exhibiting as part of the Volvo Penta booth and Elliott Energy Systems also displaying their "M-series" reciprocating engine generator.

Strategic Investor situations include AEP with Gas Power Systems, UTC exercising parental control over Pratt & Whitney Canada and International Fuel Cells, and similar efforts at Ingersoll-Rand with the combination of Hussman, Ingersoll-Rand Energy Systems and the Genset business. CAT and Solar Turbine, of course, have had a common ownership, and Amerada Hess was an interesting new entree with the Hess Microgen offering.

The other interesting development is the shift from the 30-100kW, 3.0-4.5 pressure ratio microturbine sizes, to the more installed-cost effective 200-500+kW sizes, operating at higher pressure ratios and featuring combined cycle options, in an attempt to reach the DoE 40% efficiency performance threshold. The three most interesting concepts here include the Intercooled Recuperated Cycle (ICR), the Organic Rankine Cycle (ORC) and the Fuel Cell/GT Hybrids. The other factor in the shift to these larger sizes is an obvious attempt to mitigate the transaction costs associated with actually permitting and installing these units.

Peter Baldwin
Contributing Editor
pete_baldwin@base-e.net

Turbomachinery International
March/April 2002
Vol. 43 No. 2