



Cogeneration – Heard and Seen

By Walt Patterson

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You always know a conference is going well when at coffee breaks you can't hear the person speaking to you. At the first international symposium on cogeneration, 1–2 February in Washington, DC, the coffee breaks were deafening. All 265 participants from 20 countries seemed to be talking at once, at the top of their voices. The atmosphere crackled with enthusiasm.

The symposium organizers could be forgiven for looking slightly shell-shocked. For weeks beforehand they had been worried that the symposium would be a damp squib, with a disappointing turnout and little to show for a heroic effort. (I must here declare an interest: I was involved on the periphery of the organizing, and was as worried as anyone.) Instead the symposium, the first of its kind, was an unambiguous triumph. Indeed it may have laid the groundwork for a genuinely global cogen community. The symposium included participants from companies involved in electricity, gas, engineering, manufacturing and project development; government departments and agencies; international organizations; trade bodies; universities; research organizations; and environmental organizations. The cross-fertilization was exuberant and exhilarating. A reception at the British Embassy, augmented by several dozen people from Capitol Hill and the diplomatic quarter, added further cachet to the occasion.

Cogeneration comes in many forms, with many technologies, now ranging all the way from major industrial installations to residential units. But the symposium took cogeneration technologies themselves mainly for granted, and focused instead on policy. The numerous US participants were especially surprised to see that the symposium was sponsored jointly by the US Department of Energy and the US Environmental Protection Agency, two branches of the federal government usually at each other's throats. On this occasion, however, the DOE contingent and the EPA contingent were the soul of cordiality with each other, egging each other on to greater effort on behalf of the benefits of cogeneration for both energy and environment.



DOE Assistant Secretary Dan Reicher, opening and closing the symposium, called upon the audience to seize the opportunities to expand cogeneration and distributed generation, to help build ‘a clean energy future on a global scale’. Paul Stolpman of the EPA declared that cogen technologies would rank high in pollution prevention strategies in EPA’s own facilities and around the world. Ontario’s Minister of Energy and Minister for the Environment echoed these sentiments, announcing measures to boost the role of cogen in Canada’s industrial heartland. Throughout the symposium speakers stressed cogen’s environmental advantages, especially its potential role in meeting national commitments under the Kyoto Protocol to reduce emissions of greenhouse gases.

Europeans used to calling cogen CHP, for ‘combined heat and power’, found that an alternative interpretation of this acronym is rapidly gaining credence: ‘cooling, heat and power’. The symposium heard presentations from China, India, Brazil and Burkina Faso, underlining the potential importance of cogen technology in developing countries. In these countries the demand for electricity is far outstripping the ability of traditional centralized systems to supply it; and industrial users in particular find the unreliability and low power quality of network supplies costly and frustrating. On-site generation, especially cogeneration, is therefore becoming an increasingly attractive option, especially when in low-latitude countries it can include absorption chillers for cooling, another environmental benefit.

In developing countries, however, the existing traditional electricity systems raise obstacles to cogen and on-site generation even more obstructive than similar obstacles in OECD countries. Electricity liberalization, especially in OECD countries, has reduced the ability of traditional systems to cause trouble for cogenerators; but even here stubborn problems persist. A prospective cogenerator almost anywhere in the world, for instance, now routinely faces major hurdles to arrange a connection to the network, and may be asked to pay a connection charge as high as a quarter of the cost of the project, even when the on-site generation reinforces that part of the network. Cogenerators may be levied heavy charges for standby power elsewhere on the network, and charged punitive rates for backup power to the site. The symposium heard speaker after speaker decry unreasonable and inequitable barriers such as these as the biggest single impediment to rapid expansion of cogen around the world.



These barriers will be the first target of a co-ordinated international campaign to be mounted under the aegis of the International Cogeneration Alliance, a co-sponsor of the symposium. The ICA is a newly-established global umbrella group of national cogen organizations including the Combined Heat and Power Association of the UK, the US CHPA and sister organizations in other parts of the world; for further information see the ICA web site www.localpower.org.

After the symposium ICA director Michael Brown declared that 'For the ICA, the main message delivered by the delegates from around the world was that the global CHP market is potentially a massive one, if the policies can be put together in the right way. CHP could be a \$20+ billion/year global market opportunity - and for developing countries in particular it offers so much in terms of economic development, electrification opportunities, local environmental improvements and energy modernization. This was the clear message from major countries like China, Brazil and India.'

Cogeneration by its nature tends to be local and site-specific. In Washington, nevertheless, cogen people hitherto focusing on their own local issues found that colleagues around the world faced similar issues. The symposium sowed the seeds of a concerted global effort to tackle these common issues, especially the widespread and irksome institutional barriers that hamper and impede the expansion of cogen. The consequences for cogen worldwide could be dramatic.

From now on international cogen people are going to have a lot to talk about. Plans are already afoot for a second international symposium, probably somewhere in Europe. Expect the coffee-breaks to be even more ear-splitting.