

Restructuring Today



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Casten paints picture of DG world, US waste

Thomas Casten suggests the biggest barrier to true competition is the universal ban on private wires.

Consider, the CEO of CHP owner and developer Primary Energy challenged the Center for the Advancement of Energy Markets (CAEM) convention yesterday, whether Michael Dell could have revolutionized the computer industry if he had to ship his PCs on IBM trucks on IBM schedules at IBM monopoly rates.

CAEM and other market proponents should aim to end monopoly protection of distribution.

DG is Casten's business and passion and it works around the monopoly, he noted, but only partially.

Tying into T&D monopoly systems still adds about a tenth of the cost to DG facilities that it adds to central plants.

The cost of grid hookup for central generating plants in fact makes the economics of DG look much better.

At first blush, Casten noted, central plants with their economies of scale cost less than DG — \$890/kw versus \$1,200/kw for DG.

But add \$1,380/kw for T&D to the cost of central plants — only \$138/kw for DG — and the picture changes.

Add too for central plants much higher line losses and the dismal efficiency of most central plants that don't capture waste heat as cogenerating DG plants do and you end up with a 44% efficiency penalty for central plants.

To serve a kw of peak load from a central plant you have to build 1.52 kw of new capacity. Compare that with 1.07 kw for DG, he noted.

Now compare the costs at \$3,150/kw for a central plant versus \$1,422/kw for DG.

America's 100-year love affair with utility monopolies has produced some "horrible decisions," Casten lamented.

Utilities cling to the concept of central generation even though it's not the cheapest or most efficient use of energy.

Utilities invested 99% of their generation dollars in central plants over the past few decades, he noted, while IPPs put about 34% of their dollars into DG.

Sticking with central plants, Casten figured, will raise the cost of building to meet US load growth through 2020 to \$831 billion versus just \$504 billion for distributed energy.

Finding the cheapest way to

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serve the US's growing appetite for power is essential to the country's ability to compete in world markets, Casten reminded.

DG accounts for only 7.1% of US power versus 50% in Denmark, he reported, with the US behind most of its main trading partners.

Among the saddest sub-optimal energy decisions under the monopoly paradigm is the power industry's failure to recycle industrial waste energy, Casten noted.

He's talking about nearly 100 gw of potential energy by recycling exhaust heat or flared gas from coke ovens and other industrial processes.

That's enough energy to serve 13% of US peak load at a load factor of 90% compared with just 14-40% for solar or wind energy.

Only 2.2 gw out of the 100 gw is used now, the EIA estimates.

Casten's firm owns six recycling plants it bought from NiSource last year.

The plants produce 440 mw of power and 460 mw of steam from recycled heat saving their steel-mill host \$100 million/year, Casten said.