
Guest Editorial

Straightening the Calf Path of Fuel Conversion

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Worldwide conversion efficiency of fuel to useful energy is simply pathetic. The enormous quantity of wasted energy causes many problems, including high energy prices, pollution, resultant health issues and balance of trade deficits.

A future is near at hand, when there will be fewer central electric generating plants that convert only 30 percent of their fuel to electricity. We see an energy path where small dispersed power plants are located near the users of heat and where these dispersed plants convert 90 percent of their fuel to useful energy.

We are amazed that this future seems so invisible to many of today's energy professionals and regulators. Right now, our company employs proven technology which cuts fuel usage in half. In fact, we operate plants that are over 90 percent efficient.

The Path of the Calf

Trigen Director Charles Bayless, who is Chairman of Tucson Electric Power Company and a thoughtful student of the energy industry, recently sent me a poem by Sam Walter Foss, entitled "The Calf Path." Here are the opening stanzas:

*One day through the primeval wood,
a calf walked home, as all calves should,
but made a trail all bent askew—
a crooked trail as all calves do.*

*Since then two hundred years have fled
and, I infer, the calf is dead.
But still he left behind his trail.
And thereby hangs a moral tale.*

*The trail was taken up next day
by a lone dog that passed that way
and then a wise bell-wether sheep
pursued the trail o'er vale and steep.
And drew the flock behind him, too,
as good bell-wethers always do.*

The electricity-generating path was blazed by pioneers who deserve much credit. But in the sense of Foss' poem, they were the calf, wobbling and wandering as they sought their way through an uncharted forest. Those that followed widened the calf path with larger generating plants and improvements to the basic "central plant" path.

As the years passed, the path was paved in stone, or perhaps "set in stone," with increasing regulation, large nuclear plants which became economic disasters, and huge investments of money and human capital. The crooked calf path of energy conversion became a grand and imposing road, filled with inefficiency—filled also, as all roads do fill, with vested interests and regulators who preserve the crooked road.

The investors, owners, managers, and regulators of the present crooked energy path have one hundred years of history, over a trillion dollars of investment, and countless lifetimes of effort devoted to central generating plants. These investments create blinders which prevent society from seeing what is obvious—the twisty old energy path is obsolete.

Here are the closing stanzas of "The Calf Path."

*A hundred thousand men were led
by one calf near three centuries dead.
They followed still his crooked way,
and lost one hundred years a day,
for thus reverence is lent
to well-established precedent.*

*A moral lesson this must teach,
were I ordained and called to preach,
for men are prone to go it blind,
along the calf paths of the mind,
and work away from sun to sun
and do what other men have done.
They follow in the beaten track,
and out and in, and forth and back,
and still their devious course pursue,
to keep the paths that others do.*

Now you might ask, “Can the mature energy conversion industry be changed? Can fuel usage be slashed in half?” The answer to both of these questions is, “Yes.” Constant small improvements make dispersed power with full heat recovery more economical—and can overcome the inertia of 100 years of central electric plants.

There are considerable benefits to society from a straighter, more efficient path. But this straightening will be painful to vested interests. Top talent, willing bankers, willing investors are needed, as well as the collaboration of electric and gas utilities. We know that when the energy path is finally straightened, the entire global society can live as it does today, but with cleaner air, using half the fuel.

ABOUT THE AUTHOR

Thomas R. Casten is president, chief executive officer, and founder of Trigen Energy Corporation in White Plains, New York. Trigen currently operates systems in 11 cities. He was formerly president and founder of Cogeneration Development Corporation, and developer and managing general partner of the Trenton District Energy Company. Mr. Casten has authored several reports and numerous articles on cogeneration district heating. He has provided expert testimony before state legislatures and federal agencies on cogeneration and district energy.

Mr. Casten was president of the International District Energy Association (IDEA) 1993-1994, and founder of the IDEA chief executive officer/principal manager forum.

ABOUT TRIGEN

Trigen Energy, the leading thermal sciences company in North America, develops, owns and operates commercial district energy cogeneration systems. Trigen uses its expertise in thermodynamic engineering and proprietary cogeneration processes to convert fuel to various forms of thermal energy and electricity at more efficient conversion rates than conventional processes. Trigen combines heat and power generation, producing electricity as a by-product, for use in its facilities and for sale to customers. Trigen serves more than 1,500 customers with energy produced at 23 plants in 13 locations, including industrial plants, electric utilities, commercial and office buildings, government buildings, colleges and universities, hospitals, residential complexes and hotels.