



## Becoming energy conscious

It has happened relatively slowly, but little by little we have become a more energy-conscious society.

When we buy a new appliance, we now check its energy rating. When considering a new car, miles per gallon is near the top of the checklist. And soon we'll be using only LED lights or those crazy-shaped CFL bulbs instead of the conventionally shaped energy-wasters we've known all our lives.

The reasons for our evolution are numerous and obvious: high energy prices, the need to use fewer fossil fuels and be less dependent on foreign oil, improved technology, and the overall "greening" of our society.

Last year the Obama administration launched the Better Buildings Challenge arguing that energy efficiency is "one of the fastest, easiest and cheapest ways" to save money and reduce pollution; the DOE estimates that buildings waste 30 percent of the energy they use. To date, according to *USAToday*, more than 50 partners—companies, universities, cities, manufacturers and the state of Minnesota—have signed on, including companies such as 3M, Alcoa, Best Buy, and General Electric. Private investors have committed a total of \$2 billion for energy-efficiency upgrades, according to the DOE.

The pulp and paper industry has always had a vested interest in energy efficiency. As the third largest energy user in the U.S. behind the petroleum and chemical industries, it consumes about 2.35 quadrillion BTUs of energy each year. Conservation is naturally a high priority.

Since 1980, the industry has reduced energy consumption by more than 40 percent, and on average has achieved renewable generation of steam and electricity to meet 65 percent of its internal needs—no other industry has or can approach this level of energy self sufficiency.

In this issue we look at energy efficiency as relates to the paper machine, as well as specifically how steam is being used, saved, and reused in the modern papermaking process.

According to Dick Reese in his article on paper machine energy conservation, the world average energy cost for manufacturing paper is 17.4 percent of total cash cost—16 percent in the U.S., 20 percent in Canada, and 26 percent in Mexico. "Some companies have reduced the cost of consumed energy per ton by as much as 20 percent in recent years, even though the cost of fuels has increased," reports Dick.

Where there's steam of any type, there's energy, says Mark Williamson in his article in this issue. A lot of it flows through the paper drying process. The heat energy used in the dryer section alone, accounts for up to 70 percent of the total energy required to make a sheet of paper, board or tissue. Reducing even a small amount of this can mean impressive savings on even a modest-size paper machine that can consume up to \$6 million per year in steam energy.

Today, the rising cost of energy has led to a number of innovative uses of and ways to save steam. To look more closely at how steam is today being reduced, recovered and reused, we polled a number of experts in the steam business and their thoughts are included in this issue.

Best of all, saving or recovering energy can not only produce a sizeable cost reduction on the bottom line, but can also trim a mill's need for fossil fuels. So a good energy-related ROI can also reduce the carbon footprint of a mill.

Being energy conscious makes good sense, for all of us.

GLENN OSTLE | [gostle@tappi.org](mailto:gostle@tappi.org)



### EDITORIAL STAFF

**GLENN OSTLE**  
EDITORIAL DIRECTOR/  
ASSOCIATE PUBLISHER  
[gostle@tappi.org](mailto:gostle@tappi.org)

**LARRY N. MONTAGUE**  
PRESIDENT & CEO, TAPPI  
[lmontague@tappi.org](mailto:lmontague@tappi.org)

**ERIC FLETTY** VP OPERATIONS, TAPPI  
[efletty@tappi.org](mailto:efletty@tappi.org)

**KEN PATRICK** SENIOR EDITOR  
[kpatrick@tappi.org](mailto:kpatrick@tappi.org)

**MONICA SHAW**  
EDITORIAL DIRECTOR, *TAPPI JOURNAL*  
[mshaw@tappi.org](mailto:mshaw@tappi.org)

**RAMESH GUPTA**  
INTERNATIONAL EDITOR  
[bsc\\_rcg@hotmail.com](mailto:bsc_rcg@hotmail.com)

**ELISE HITCHCOCK**  
ONLINE EXCLUSIVES EDITOR  
[ehitchcock@tappi.org](mailto:ehitchcock@tappi.org)

### ADMIN/PRODUCTION/SALES

**PUBLISHER** TOM SCHELL  
[toms@naylor.com](mailto:toms@naylor.com)

**MANAGING EDITOR** MICHAEL SENECA  
[msenecal@naylor.com](mailto:msenecal@naylor.com)

**MARKETING** BRIANNA MARTIN  
[bmartin@naylor.com](mailto:bmartin@naylor.com)

**INTEGRATED MEDIA DIRECTOR**  
SHANE HOLT  
[sholt@naylor.com](mailto:sholt@naylor.com) (352) 333-3345

**SALES ASSOCIATES**  
SHAUN GREYLING [sgreylin@naylor.com](mailto:sgreylin@naylor.com)  
NICHOLAS MANIS [nmanis@naylor.com](mailto:nmanis@naylor.com)  
JOHN O'NEIL [joneil@naylor.com](mailto:joneil@naylor.com)  
JASON RUPPERT [jrupper@naylor.com](mailto:jruppert@naylor.com)  
RICK SAUERS [rick@naylor.com](mailto:rick@naylor.com)  
ROBERT SHAFER [rshafer@naylor.com](mailto:rshafer@naylor.com)  
MATTHEW YATES [myates@naylor.com](mailto:myates@naylor.com)

**INTERNATIONAL SALES**  
MURRAY BRETT [murray.brett@abasol.net](mailto:murray.brett@abasol.net)

**DESIGN**  
SUNNY GOEL

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