Editor's Note

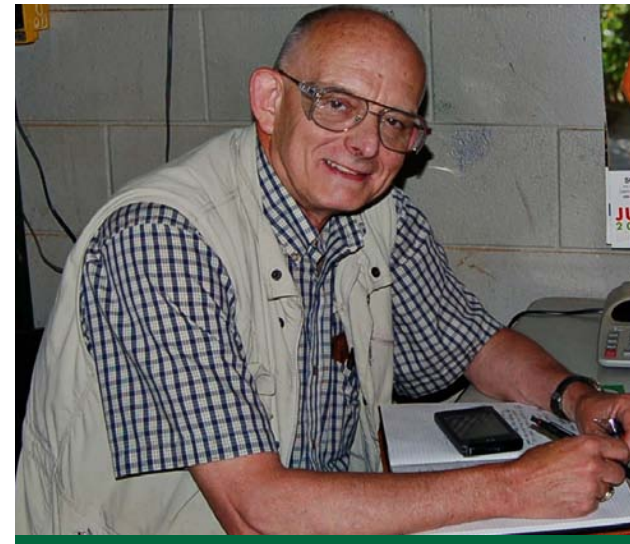
MONICA SHAW | EDITORIAL DIRECTOR
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Bill Fuller's *TAPPI Journal* enthusiasm

Editor's Note: *In coming editorial columns, we will profile* TJ*'s editorial board members. These volunteers spend long hours overseeing the peer review process and contributing to* TJ*. TAPPI would like to express its gratitude to the editorial board members for their hard work and willingness to share their expertise with the forest products community.*

– **Monica Shaw**, Editorial Director



Bill Fuller crunching numbers at the pulp mill.

When he mentions *TAPPI Journal* (*TJ*), William S. "Bill" Fuller refers to himself as "the oldest rat in the barn," having served as an editorial board member since 1980. Bill's passion for the pulp and paper industry is evident from his dedication to *TJ* and TAPPI, which he joined at his academic advisor's recommendation in 1966 while a pulp and paper technology graduate student at the University of Washington.

After graduate school, Bill began his career in 1968 as a Fiber Raw Materials Scientist with Weyerhaeuser in Federal Way, WA, where he eventually retired in 2002 as Senior Scientific Advisor – Pulp and Paper R&D. He now consults with FRM Consulting, with a focus on fiber resources, chip quality and pulp mill issues – areas where he has authored numerous *TJ* papers. Likewise, Bill has contributed chapters on chip production for TAPPI Press and Academic Press publications. Since 1982, he has been an Affiliate Associate Professor for the University of Washington, College of Forest Resources, Paper Science and Engineering.

Bill remains grateful to Michael Kouris, a former *TJ* Editor-in-Chief who enlisted him as an editor. "Michael coached me in the skills needed to evaluate, improve and refine *TJ* submissions," says Bill. "His contagious commitment and enthusiasm remain a part of my *TJ* experience."

Active TAPPI involvement

An honorary lifetime TAPPI member, Bill was recognized as a TAPPI Fellow in 1986 and has received a Leadership Award, Distinguished Service Award, and many other TAPPI accolades. He has participated in conferences, courses and the Pulp Manufacture and Research Divisions, as well as Local Pacific Section activities. From 1996 to 1998, he was a member of the TAPPI Board of Directors.

Bill attributes much of his career success to active involvement in TAPPI, with its development of leadership, team building and problem solving skills. He especially appreciates TAPPI's access to global expertise.

"Early in my career, I had access to global technology and research leaders through TAPPI, who taught and coached me," describes Bill. "If someone asks about a technology or a problem, I am connected to a global network and can direct them to the right person or organization."

TJ and the industry

Serving as a *TJ* editorial board member has allowed Bill to further develop a global technology network while staying in touch with new technologies and their implementation. The challenge, he says, is helping *TJ* authors communicate their research work clearly and concisely.

In his career, Bill has seen major industry develop-

Continued on page 6

EDITOR'S NOTE / CORRECTIONS

ments, such as paper recovery and recycling as a technical and economic success. In kraft pulping, he points to yield and uniformity improvements like those from better chip quality, as well as reduced energy use and productivity gains. The use of thermomechanical pulp for a range of printing grades is yet another.

Today, Bill says investment in process and product development by producer companies is a major challenge, as is student recruitment and the absence of a cohesive approach to shaping the industry's public image.

"I am convinced there is a key to renewed growth for our industry and our careers," Bill said in a 1983 *TJ* column. Bill today remains optimistic, looking to non-competitive projects that address environmental, raw materials supply and globalization through collective efforts of academia, government, producers, suppliers and consultants.

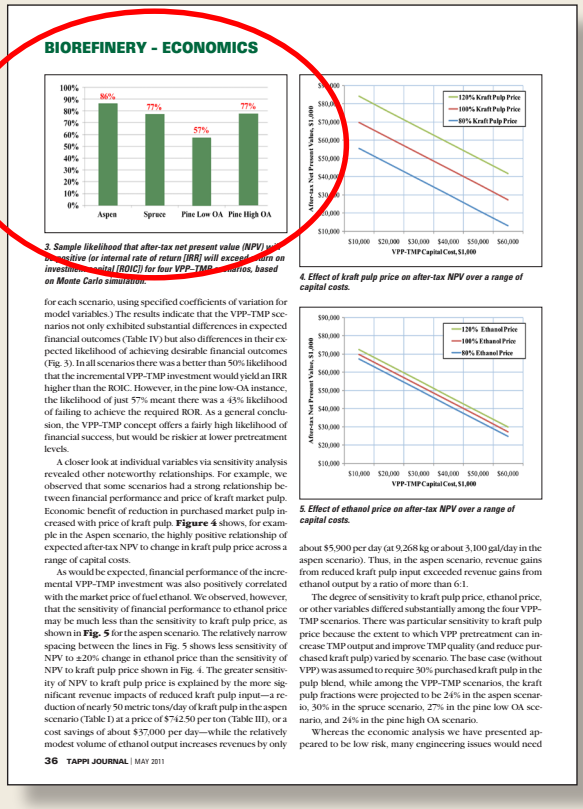
On a personal note, Bill is a resident of Federal Way, WA, where he lives with his wife, Pat, and canine companion, Suzy. In addition to consulting, *TJ* and TAPPI work, Bill enjoys spending time with his five daughters and grandchildren, collecting pens and pencils, digital photography and volunteering in other capacities, including chair of the Washington Pulp and Paper Foundation Alumni Committee and as board member for the University of Washington Forest Resources Alumni Association. **TJ**

Monica Shaw
Editorial Director, *TAPPI Journal*

Corrections in our May and June issues:

May correction

In the May issue of *TAPPI Journal*, the data in Figure 3 on p. 37 was incorrect. Please refer to this updated figure when referencing the article.



3. Sample likelihood that after-tax net present value (NPV) will be positive (or internal rate of return [IRR] will exceed hurdle on investment capital [ROIC]) for four VPP-TMP scenarios, based on Monte Carlo simulation.

4. Effect of kraft pulp price on after-tax NPV over a range of capital costs.

5. Effect of ethanol price on after-tax NPV over a range of capital costs.

for each scenario, using specified coefficients of variation for model variables.) The results indicate that the VPP-TMP scenarios not only exhibited substantial differences in expected financial outcomes (Table IV) but also differences in their expected likelihood of achieving desirable financial outcomes (Fig. 3). In all scenarios there was a better than 50% likelihood that the incremental VPP-TMP investment would yield an IRR higher than the ROIC. However, in the pine low-OA instance, the likelihood of just 57% meant there was a 43% likelihood of failing to achieve the required ROR. As a general conclusion, the VPP-TMP concept offers a fairly high likelihood of financial success, but would be riskier at lower pretreatment levels.

A closer look at individual variables via sensitivity analysis revealed other noteworthy relationships. For example, we observed that some scenarios had a strong relationship between financial performance and price of kraft market pulp. Economic benefit of reduction in purchased market pulp increased with price of kraft pulp. **Figure 4** shows, for example in the Aspen scenario, the highly positive relationship of expected after-tax NPV to change in kraft pulp price across a range of capital costs.

As would be expected, financial performance of the incremental VPP-TMP investment was also positively correlated with the market price of fuel ethanol. We observed, however, that the sensitivity of financial performance to ethanol price may be much less than the sensitivity to kraft pulp price, as shown in **Fig. 5** for the aspen scenario. The relatively narrow spacing between the lines in Fig. 5 shows less sensitivity of NPV to ±20% change in ethanol price than the sensitivity of NPV to kraft pulp price shown in Fig. 4. The greater sensitivity of NPV to kraft pulp price is explained by the more significant revenue impacts of reduced kraft pulp input—a reduction of nearly 50 metric tons/day of kraft pulp in the aspen scenario (Table I) at a price of $742.50 per ton (Table III), or a cost savings of about $37,000 per day—while the relatively modest volume of ethanol output increases revenues by only about $5,900 per day (at 9,268 kg or about 3,100 gal/day in the aspen scenario). Thus, in the aspen scenario, revenue gains from reduced kraft pulp input exceeded revenue gains from ethanol output by a ratio of more than 6:1.

The degree of sensitivity to kraft pulp price, ethanol price, or other variables differed substantially among the four VPP-TMP scenarios. There was particular sensitivity to kraft pulp price because the extent to which VPP pretreatment can increase TMP output and improve TMP quality (and reduce purchased kraft pulp) varied by scenario. The base case (without VPP) was assumed to require 30% purchased kraft pulp in the pulp blend, while among the VPP-TMP scenarios, the kraft pulp fractions were projected to be 24% in the aspen scenario, 30% in the spruce scenario, 27% in the pine low OA scenario, and 24% in the pine high OA scenario.

Whereas the economic analysis we have presented appeared to be low risk, many engineering issues would need

June correction

In the June issue of *TAPPI Journal*, pg. 5, we incorrectly stated that in 1991, Dr. Mahendra Doshi was a faculty member with Institute of Paper Chemistry (IPC) in Appleton, WI. Dr. Doshi was a consultant at that time, and not a faculty member at IPC.



Guest Editorial

CARL HOUTMANN | *TAPPI Journal* Editorial Board

TAPPI Journal welcomes *PPR*

Editor's Note: *In this issue,* TAPPI Journal (TJ) *welcomes the inclusion of exclusive content from* Progress in Paper Recycling (PPR). *It also welcomes the addition of Carl Houtman, Ph.D., to the* TJ *Editorial Board. Houtman is a research chemical engineer with the U.S. Department of Agriculture's Forest Service, Forest Products Laboratory (FPL), in Madison, WI.*

Upon joining FPL in 1998, Houtman's first project was to lead the development of test methods for determining when pressure sensitive adhesives are compatible with paper recycling. Funded by the U.S. Postal Service, this work developed methods that are part of current stamp specification.

Since that time, Houtman has continued recycling research, as well as research in process development, including biorefineries. He has held many positions within TAPPI, including Recycling Committee officer and technical program chair for several conferences. He is also a member of the Quality and Standards Management Committee. As the current editor of PPR, *he joins the* TJ *editorial board as the two journals combine.*

– **Monica Shaw**, Editorial Director

In 1990, a confluence of consumer demand, government regulation, and fiber supply drove interest in paper recycling. Capital investment followed, with a few new mills and significant process upgrades at other mills. In 1990, the U.S. paper recovery rate was 33%. As **Figure 1** shows, this recovery rate has continued to climb over the last 20 years, reaching its current level of 63%. Constant innovation has fueled this steady rise in recovery [illegible] other countries have seen similar trends.

In 1991, Dr. Mahendra Doshi, a former faculty member at the Institute of Paper Chemistry, started publishing *Progress in Paper Recycling (PPR)*. Many of the major innovations in recycling technology were described in the pages of [illegible], slotted screen rotor designs, drum pulper operation, stickies measurement methods, and flotation efficiency improvements have allowed mills to increase recovery rate in the face of declines in recovered paper quality.

Mahendra Doshi

Progress in Paper Recycling

Under the steady hand of Doshi, who is also a *TAPPI Journal (TJ)* editorial board member, *PPR* grew in parallel with the paper recovery rate and continued to highlight new ideas and technologies.

Since acquiring *PPR* in 2007, TAPPI has published *TJ* and *PPR* in parallel. For better efficiencies and reader access, *TJ* and *PPR* are now being combined. *PPR* will continue to solicit papers, but will use *TJ* publication and style guidelines.

In this issue, you will find two research papers flagged with the *PPR* logo. In future issues of *TJ*, this logo will draw attention to papers that describe innovations that will continue to help mills cope with the changing quality of recovered papers. Also, to read a special *PPR* supplement to this issue of *TAPPI Journal* on flotation deinking, visit http://www.tappi.org/Bookstore/Technical-Papers/Journal-Articles/PPR/Archives/2011/June/Overview-of-Flotation-Deinking.aspx.

1. U.S. paper recovery rate. Data published by the American Forest & Paper Association.