PAPIER held its first annual reception dinner for student representatives from universities across Canada. The event, organized by Quank Foo Lee, in conjunction with PAPIER director Dr. Richard Kerekes and chairman Honghi Tran, was suggested by the students last year so that they could get to know each other, said Kerekes. Kerekes and Tran opened the reception with a quick speech. “In the future, you might look back and see this as a wonderful opportunity to get to know each other,” concluded Tran, before leaving the students to their mingling.
Pulp & Paper Canada establishes advisory board

IN AN EFFORT to bring you articles on the most pertinent topics and issues characterizing the industry, Pulp & Paper Canada has established an advisory board.

Ten prominent figures from various fields of the industry will be providing their insight and guiding us as we plan our editorial calendar.

At Pulp & Paper Canada, we strive to fill the pages of our magazine with information on all facets of the industry, from mill, research and supplier perspectives.

From energy, to chemical costs, from bleaching to corrosion, the advisory board will be instrumental in our quest to report on the most salient stories in the industry, and how they affect you, our reader.

From left to right back row: Robert Wood, of PAPTAC, Barbara van Lierop of PAPRICAN, Dennis McNinch, Dr. Joseph Wright of PAPRICAN, Anya Orzechowska of P&PC, Heather Lynch of P&PC.

Front row: Bryant Prosser, Paul Stuart of the Université de Montréal, Dr. Yonghao Ni of the University of New Brunswick and Jim Bussiere, of P&PC. Not present in the photo are Dr. Richard Kerekes of PAPIER, Richard Fouceault and Ross Williams.
Energy: Looking at ways to save

by Perry Greenbaum

ONE OF THE most urgent problems that mills continually face is energy reduction, today more so than ever, with the increasing costs of fossil fuels - a prime source of energy for most mills. Equally important is reducing the environmental effects of energy use, notably the emissions of greenhouse gases, or GHGs. Such greatllys explains the standing-room only crowd at Tuesday morning's session on Energy Cost Savings, moderated by Les Kosiak of Tembec Inc., and Tom Browne of Paprican.

Much of the session focused on the use of sophisticated computer models to identify potential energy reductions, and thus cost savings. One of the areas examined is carbon savings, an important consideration should Canada, like the European Union before it, introduce a carbon trading mechanism as part of the Kyoto Protocol. In Greenhouse gas mitigation implications due to implementation of cogeneration and increased DIP at an integrated newsprint mill, Paul Stuart of École Polytechnique in Montreal, examined the possible carbon savings that mills can achieve. One way is to increase production of deinked pulp (DIP) and implement cogeneration, a finding that was achieved by using a combination of techno-economics (TE), life-cycle analysis (LCA) and environmental impact assessment (EIA). Stuart's base case was a newsprint mill in eastern Canada, producing 375,000 tonnes/year using a mix of 80% ONP and 20% OMG. The techno-analysis and life-cycle analysis produced 18 possible design considerations analysis. The design with the best financial performance for that particular mill was to increase DIP production to 100% DIP at 1,100 t/d and have a 40-MW cogeneration facility. GHG emissions would be reduced by 63%, or about 272,000 tonnes CO₂eq/year. At $50/t CO₂eq, an estimate of the future trading rate for carbon credits, the mill would achieve $13 million in cost savings.

The idea of data collection and analysis ran through the next presentation, Benchmarking energy use in pulp and paper operations, given by Bill Francis of Paprican in Vancouver, BC. The study conducted a three-year process where Paprican engineers visited each mill to collect energy and production data. The mill's production uses pulp, paper and board from mechanical, chemical and recycled paper - a two-year process where Paprican engineers visited each mill to collect energy and production data. As Francis pointed out, benchmarking on a global basis gives a general idea of where a mill stands in comparison to a model or leading mills, but the next step is to focus on particular processes. "That is much more helpful," Francis noted. The study looked at two main areas: Energy conversion and process.

These particular areas, in turn, were defined by technology descriptors to account for differing energy use by differing technologies. For example, mechanical pulping, the energy use varies with the pulping process, such as TMP or SGW. These technology descriptors allow benchmarking comparisons among process areas with the same technology or between process areas with different technologies. Among the steps is identifying process boundaries, collection of data and energy inputs for the mill's energy use, and allocating energy and fibre resources to the two areas, energy conversion and process. After the analysis, each mill was given an energy report card of sorts - the results as useful as each mill wants it to be.

Theodora Retsina of American Process Inc. in Atlanta, GA, did a fine job showing examples of how companies often overpay on energy consumption in Energy Conservation. Energy conservation needs a multi-faceted approach. For example, mills can easily save 5% of their energy costs by purchasing smarter, using better housekeeping and doing simple things like ensuring equipment is well-maintained. Retsina said that mills should not only consider the technical side of the equation, but the human management side. As an example, she cited that, in many cases, departments work independently, and not together, to reduce energy use. The methodology and analysis is only as good as its implementation.

The next presentation not only focused on energy but also water reduction. In Roadmap to minimum energy and water use for integrated newsprint mills, Sébastien Lafourcade, a PhD student at École Polytechnique in Montreal, introduced a comprehensive methodology to minimize both water and energy use in newsprint mills, with the aim of achieving zero-effluent operation. Once again, the base case was an integrated newsprint mill, representing the most common newsprint mill configuration in Canada. With such methods as benchmarking and pinch analysis, mills can find out areas where they can reduce the use of water and energy. In Lafourcade's analysis, an integrated newsprint mill can reduce its use of fresh water to between 16 and 18 m³/air-dried tonnes (adt), and eventually to 10 m³/adt by additional equipment and process improvements. With all is said and done, mills undoubtedly have enough information to improve their processes. 

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Session looks at environmental benchmarking

By Andrea Young

ALTHOUGH THE Environment Committee’s afternoon session featured speakers from different corners of the earth, they were all resolute in demonstrating their ecological solutions to better the pulp and paper industry.

Phil Riebel, environment director for UPM - Kymmene Miramichi Inc., a company with a head office in Chicago, presented his paper: “UPM - Kymmene Environmental Benchmarking Program and Selected Results”. After boasting how his company ranked first in three of four paper types for lowest overall environment load, Riebel introduced “sustainability benchmarking in the investment community”, a stock market index for world leaders for “triple bottom line performance”. “UPM’s strategy is to be an environment leader,” he said, “and the [benchmarking] results are useful when maintaining investment decisions and when negotiating new environment permits.”

“Using a Balance Proportioning Method for Proportioning Nutrients in Activated Sludge Plants in the Forest Industry” was written and presented by Pertti Hynninen of Enviro Data Oy. “The reason for our success,” said Hynninen, who is from Finland, “lies in the balanced method for nutrients.” Identifying nitrogen and phosphorus specifically, he noted that the advantages of the method included reaching low emissions without chemical treatment. The disadvantages, however, were the slow, expensive and high demanding systematic approach of the method.

“We have benchmarked emissions to air, water, and solid waste for pulp and paper mills since 1993, annually,” said Eva Mannisto, from EKONO Inc, a company based in Washington. Her paper, “Benchmarking the Environmental Performance of Pulp and Paper Industry - An Evaluation Based on Statistical Data”, conveyed that benchmarking, while continually demonstrating the performance and progress made in the industry, also showed a significant reduction of discharges.

A Ph.D. student from Ecole Polytechnique de Montreal, Caroline Gaudreault proposed potential mill modifications in her paper, “Environmental Benchmarking of Energy-Related Kraft Mill Modification Using LCA”. To name a few, reducing steam consumption, usage of recycled fibres, energy efficiency projects and fuel switching, for example, from coal to bark.

Green house gases were the prevalent theme in Heikki Mannisto’s paper, “Benchmarking the CO2 emissions in the EU and North American Pulp and Paper Industries”. Also from EKONO Inc., Mannisto showed the challenges in CO2 benchmarking and the factors that affect the pulp and paper industry's GHG emissions.