

Eye on the Environment

Yes, we have no bananas, but the waste from banana plantations may yet be as productive and profitable as the fruits themselves, reports Samantha Schelling.



By Samantha Schelling

Going bananas on recycling

A technology turning banana waste into paper is gearing up to go commercial. And it has several distinct market advantages — a commercially viable cost structure, superior product and positive environmental benefits.

In 1996, engineer and businessman Ramy Azer began researching paper making from banana tree trunks. From that research at the University of Adelaide, Azer has developed the concept to the point of commercially testing the technology.

Indeed, that is just about to happen, with the first production line to be completed in Adelaide by this month, Azer told *ProPrint*, with a full-scale commercial operation in North Queensland to follow. (Papyrus Australia Ltd, of which Azer is MD, was publicly listed last year, raising \$4 million towards that commercialisation.)

Azer says the plant will initially produce two types of “banana ply paper” (BPP) products: 100gsm and 250gsm raw paper, to be sold as commodities for further processing.

So what is BPP? BPP is an un-pulped paper made from banana tree trunks, or, more correctly, the “pseudo stem” of this giant herb. Suckers spring up around the main banana plant, with the eldest replacing the main plant when it fruits and dies. The cut “trunk” from harvested bananas becomes waste, and it is this waste that Papyrus makes into BPP. The supply of banana waste is continuous, because bananas fruit year-round.

A regular guest lecturer on sustainable business development and innovation, Azer says Papyrus’ technology “may be the only fully sustainable paper making technology, given it is based on a renewable source of otherwise waste material, without recourse to the destruction of natural forests or purpose-planted plantations”.

He says Papyrus’ technology is unique, fitting between the conventional pulp-and-paper technology and the lumber veneering and custom-wood technologies.

“The banana trunk’s long fibres produce a stronger, more durable product than traditional, pulped paper. Preserving the fibre’s natural structure is key in producing a quality end product that is water repellent and greaseproof.”

Chemical free, waterless processing

Ramy Azer says another strong point in Papyrus’ technology is the actual paper making process. “It’s far more environmentally friendly than the conventional process of paper production. In contrast, no toxic chemicals or water are required during manufacture of banana paper, no effluent or landfill waste is created, and the process is estimated to use about one per cent of the energy of a typical woodchip paper plant.”

Just as with conventional pulped paper, raw BPP can be manufactured into various types of papers and boards, with end-uses from packaging (say cardboard boxes and bags), office use (office-class and printing paper), right through to building use.

While the raw paper differs markedly in appearance, texture and quality from the processed version, Azer says, “An important feature of BPP is that for some applications, the raw feedstock doesn’t need additional processing, unlike wood-pulp-based raw paper.”

Market advantages

Papyrus believes its technology has several distinct market advantages over other technologies (including those in development). Along with the positive environmental benefits and superior product, Azer says Papyrus also offers a commercially viable cost structure.

He contrasts the total production costs (including material, labour and power) for pulped paper at \$689/tonne, with BPP at \$147/tonne.

But perhaps even starker are the total capital-cost comparisons: \$2,302/tonne for pulped paper, and just \$78/tonne for BPP.

Further work

In October 2005, Papyrus sent several samples to finishers and merchants for testing. Further samples were made incorporating that feedback, with the results being accepted.

“Now we need to make those papers on the production line,” Azer told *ProPrint*. “We can make them using a lab atmosphere, so we know it is ‘doable’, but we need to do runs on a commercial line, so we know it’s possible to mass produce.”

“The production line was built to test the samples. Now we know what type of paper to produce, the next step for Papyrus Australia is — and we’ve already started this — to design and gear up to build the commercial facility in Queensland, which will be in commercial production by next April.”

Visit www.papyrusaustralia.com.au.

Urban Fresh freshens up

With growing numbers of printers asking about FSC, environmental print consultancy Urban Fresh has revamped its website.

But it’s not just FSC and chain-of-custody queries, says founder Kristina Holdorf.

“Increasingly, printers are asking us for general guidance on ‘issues green’. Urban Fresh offers a range of consulting services, including strategic CSR policy development, environmental paper and print programmes, waste management programmes, environmentally

responsible merchandising for distributors and resellers, bespoke training, setting up an EMA and certifications for paper and print.

“The site goes into greater detail than before, so people can use it to catch up with the latest information or for backgrounding before they talk to us, to go further.”

As well as a downloadable FSC application form, the new site includes a daily “green buzz”, with a newsfeed from Greenbiz.com.

“Greenbiz is a great site that gives a very broad picture, encompassing corporate and industrial businesses, the changes they are making in sustainability and how that is impacting on their businesses.”

Visit www.urbanfreshservices.com.

Printing Industries signs with Australian Environment Business Network

Printing Industries will establish its own “green printer” programme, building on the successful Green Stamp Program from Western Australia.

On May 25, the peak body appointed the Australian Environment Business Network (AEBN) as consultants for a new, processed-based, environmental improvement scheme.

Called “Printing Industries Environmental Principles”, the proposed programme will consist of tiers within four different streams, so companies can progress to levels chosen on a combination of commercial and competitive factors.

Printing Industries’ manager of industry and commercial policy, Hagop Tchamkertenian, said, “Each tier is designed to deliver environmental improvements and improve understanding of statutory environmental regulations and responsibilities. The programme’s associated certification streams will help verify environmental claims and, over time, will reduce the incidence of unsubstantiated claims concerning environmental performance.”

AEBN will begin developing material in the next few months based on ISO 14001 standards (among others), with feedback given by an industry reference group. The project is expected to last up to six months, with an anticipated launch date for the new programme in early 2007.

Tchamkertenian told *ProPrint*, “*Printing Industries* has been working on this for quite some time. The current globalised, ultra-competitive trading environment results in falling profit margins and return on assets. We see this initiative would give an opportunity for participating companies to distinguish themselves from their competition, both domestic and international.

“Becoming more environmentally responsible gives distinct benefits, not only in delivering beneficial environmental outcomes, but in improving the bottom line through savings in areas such as waste disposal costs, raw materials and energy consumption.

“Also, increasingly, major corporations are moving towards triple-bottom-line reporting, which gives consideration to the environmental

and social activities associated with commercial activities — ISO 14001 certification is a growing print procurement criterion for major corporations.”

Tchamkertenian said “Printing Industries Environmental Principles” has its origins in industry concerns about the growth of “so-called environmental standards and environmental labels”.

“The terms ‘environmentally responsible’, ‘environmentally friendly’ or even ‘green printer’, have been cited too regularly; organisations often use them solely for marketing purposes without any actual improvements in environmental performance.

“Equally of concern, was industry feedback relating to certain environmental standards applying to the printing and publishing sectors being



Printing Industries’
Hagop Tchamkertenian.

developed by organisations purely for commercial gain and involving little industry involvement or consultation.”

Thus a working party was set up in early 2005 to develop an industry-

appropriate environmental labelling accreditation scheme. Tchamkertenian says AEBN has been involved in the industry for several years (including updating the body’s environmental manual), “so they know the industry already”.

He said they foresee some companies being involved who want to go beyond what’s required by ISO 14001 “simply because they are responsible corporate citizens. As part of this project, *Printing Industries’ Environmental Management Manual* will be rewritten and significantly expanded, incorporating the new material. A new publication will be produced, called *Printing Industries Environmental Principles*. An industry-specific environmental Code of Practice will be produced alongside it.

“The proposed documentation will thus enable printing companies to introduce an environmental management system that meets their needs.

“As part of our scheme there will be audit and certification streams to help validate participants’ various environmental performance claims. Workshop-style training sessions will also be involved, helping participants reach and progress through the programme’s different levels.”

Tchamkertenian said, “It’s important this is processed based, rather than product based. Recently, standards have been developed whereby a printing company can put an environmental label on a particular printed matter and say ‘that was done in an environmentally responsible manner’. Our programme means participating printers will become environmentally responsible printers for all their jobs.”

Special programme rates will apply for *Printing Industries* members. §

Thermal Laminating (CELLOGLAZING) films



- Lami-Tack Thermal film - Made in Japan
- Australia’s leading thermal film
- Available for immediate delivery in over 30 sizes (Gloss & Matt 30 & 45 micron)
- No minimum order - friendly service
- “Superstick” film available for digital prints such as Xerox




Tel 1300 888 723 • Fax (02) 8399 2277 www.jet-technologies.com.au