Paper industry: A key player in the circular economy

Few materials can compare to paper. It’s simply an amazing product. Look around you; paper is used everywhere in one form or another. Even better, paper boasts exceptional environmental credentials: it is biodegradable, recyclable, it comes from an infinitely-renewable resource and it is produced in a sustainable way. The future of paper products and applications is changing every day to meet new challenges and provide new, sustainable solutions for society’s needs. Here are a few examples of how resource efficiency can lead to new products and by-products of the papermaking process. There are many others.

Micro Fibrillated Cellulose

Stora Enso’s Imatra Mills in Finland is testing micro fibrillated cellulose (MFC). This allows for the creation of lighter and stronger renewable packaging materials, while keeping and/or enhancing current packaging properties. In the future, MFC could also replace some of the less sustainable barrier materials currently used in packaging boards, as well as fossil-based materials such as plastics.

Dissolving Pulp

Stora Enso’s Enocell Mill in Finland produces dissolving birch pulp for the textile industry. Dissolving pulp is well known in the textile industry today, but it can be used for a huge range of applications, from home furnishings to clothes, tyres, paints, cosmetics or even food and medicine.

Bio-materials

Finnish pulp and papermaker UPM has teamed up with Helsinki Metropolia University of Applied Sciences to produce the Biofore Concept Car. This unique concept demonstrates the use of renewable bio-materials in the automotive industry. Various parts of the car are made from UPM’s bio-based materials – the UPM Formi biocomposite and UPM Grada thermo-formable wood material. They improve significantly the overall environmental performance of the car, without compromising quality or safety. The concept car is fuelled by UPM BioVerno, a wood-based renewable diesel. And their label materials were used to mark spare parts as well as in the interior and exterior design of the car.
**Tall Oil**

Pulp production also generates tall oil, a very useful bonus. Depending on how it is reprocessed, tall oil can be used in a variety of ways from energy to hydraulic fluids, asphalt, paints, adhesives, and detergents, cosmetics and biodiesel. 
(Source: Metsä)

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**Microflutes**

Microflutes are a lightweight but durable corrugated board. Because it’s thin, microflute board saves space during transportation and storage, leading to a reduction in costs and the energy needed to store and transport. Because it’s strong, microflute board doesn’t need any transit packaging, minimising materials as well as costs and environmental impact.

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**Stretching the Limits**

At Swedish research company Innventia, a new project is examining how paper can be made extremely stretchable, a quality that will make it possible to replace some of today’s plastic 3D packages, thereby reducing the amount of non-biodegradable plastic waste.

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**Lighter Weight Cartonboard**

There has been a trend in recent years towards developing lighter-weight packaging grades to minimise the use of resources and the expense of transporting and storing them, as well as reducing post-consumer waste. Metsä Board has pioneered lightweighting – achieving excellent strength and printability at low basis weights. The company has reduced the weight of its board grades by 13.5% since the 1980s, representing a considerable saving of resources. And it has done it while maintaining all the qualities needed in a good-quality packaging board.

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**Office Papers Made Lighter**

A very clear sustainable consumption solution for standard office papers is to choose lower weights. Portuguese papermaker grupo Portucel Soporcel has been making 75-gramme paper as an alternative to heavier standard weights (80g per square metre) for some time, embracing the challenges of eco-efficiency. A 75-gramme paper produces less post-consumer waste, but there are still 500 sheets in a pack. By reducing the weight of the paper by 5 grammes, resources are used more efficiently and the same number of reams can be produced with fewer raw materials. This lighter paper is growing in popularity – proof that resource efficiency is a growing business.

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More information at
www.cepi.org/resourceefficiency