



Southern Paper Group

Turn to us.

Energy Savings

Part 1- Energy Costs

We have had energy spikes in the 70's and the 80's but this time the spikes may be here to stay, growth rates of 8 to 10% in India and China will likely make it so.

In this Newsletter we will key in on the Energy Savings possible during the Paper Drying process. Future Newsletters will discuss the selection and applications of Fan and Needle Jet Nozzles in an Energy Saving program.

To help point us to the Energy Savings possible in Drying the Paper Web we have collected some great articles for review.

Initially we review the cost to dry paper and then review a few articles which study the subject in greater detail – i.e. the best practices.

Drying the wet web offers great opportunities for Energy Savings.

Here are the costs of drying the wet web-based on one study we reviewed. (Richard Reese, Solutions! April 2006.)

Former	Press	Dryers
\$0.014/T	\$0.019/T	\$22.00/T.

Keeping Water Removal out of the Dryers - A Major Energy Saving

- A. Change Wet Felts when they stop working at peak performance.
- B. Keep Wires clean. Dirty and contaminated forming fabrics can lead to wet streaks. There are few things more costly than over-drying most of the sheet to get one streak into specification. Wet streaks coming from the forming fabric will also plug the felt quicker as more water is pushed into or through the wet felt, along with fines and various and sundry contaminates. A well designed and maintained showering system is critical to keeping the forming fabric clean.
- C. Keep Felts as clean as possible with the proper showering system and a good chemical cleaning program.

How to keep the Wires and Felts clean?

We have collected articles from Academics, Independent Consultants, Clothing suppliers and Nozzle manufacturers for your review. Please download and print any of these articles. Others are available at www.spgspg.com in the [Library Section](#).

A quick review of some of the articles:

[Save Energy by Optimizing Paper Machine Clothing](#), Richard Reese, Solutions! April, 2006.

Great article for comparisons of the various costs incurred in the paper making process. Easy to understand. Case studies for different paper grades. You will need to plug in your current energy costs as this is a 2006 article.

[Press Felt Cleaning and Conditioning](#), Weavexx.

Overview of location of showers, calculations on oscillation, details of type of shower nozzles, distance from fabric and pressure. Uhle box sizing and vacuum requirements. Would skip the chemical section, too simple for today's PMs and furnishes.

[Needle Shower Review Highlights Best Approach to Setup, Operation](#). James E. Stein, Jr. Weavexx.

Ignore the first 2 graphs; they refer to surface cleaning only. Dig into the words and graphs after page 1. Covers most of the areas of interest in cleaning with showers.

[Showering in the Wire and Press Section. In which Direction is the development Going?](#) Hans J. Struck, Papiermaschinen-Systemtechnik GmbH, Offenburg

At 22 pages this article has to be considered the treatise on showering by the owner of PMS. Use the table of contents in the summary if you want to key in on a specific area. Of particular interest for the high efficiency PMs will be the edge cleaning. Great photomicrographs of ruby, SS and ceramic. (Caution on jumping right to ruby if your crews are conditioned to poking the SS nozzles with sharp items as Ruby cracks very easily. Your overall performance will likely be better if you stick to SS.) Great explanation of brush showers and nozzles. If your nozzles look like a 'Witches Hat' your brushes are likely not working after the first week or so.

[The Corundum Conundrum](#), Steve Corlew, PaperAge Sept 2006

Comparison of Ruby vs Sapphire for nozzles. Other than color they are the same. For us more mature paper makers, stick with Ruby, it is easier to see in the nozzle and a lot easier to spell correctly.

[Good luck, the jobs you save might be yours and mine!](#)