Howe Sound
PULP AND PAPER LIMITED PARTNERSHIP
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Power generation: at the heart of the mill

In order to function—economically, efficiently, and environmentally—Howe Sound needs to generate its own power.

Without generation facilities the mill's power bill would be over $50 million per year! It also wouldn't be able to recycle the chemicals used in the kraft pulp process, or burn its odorous gases.

Everyday the mill requires 130 megawatts. (A megawatt is equal to 1,000 kilowatts, or 1 million watts, so we're talking a lot of light bulbs!) "Our energy usage is roughly equivalent to that of Langley," explains Mike Douglas, an assistant superintendent for the power and recovery department.

Two power generation plants allow us to "turn the lights on" everyday—the power boiler and the recovery boiler. The power boiler produces about 150 tonnes of steam per day while the recovery boiler produces 350 tonnes. On average, these two boilers generate between 45 to 60 megawatts per hour, but they are capable of making up to 90.

The power boiler

The power boiler burns "hog fuel"—an economical bio-fuel made up of wood waste, bark, and sawdust. When available, demolition wood (urban waste from tearing down houses) may also be burned. "We call it rocket fuel," says Mike. "It's a lot drier than hog." In a pinch, natural gas will be used in the power boiler (especially if the hog is too wet to burn completely) but the cost increase is exponential. "It costs $15,000 a day to run the power boiler on hog fuel," says Mike. "On natural gas, a day would cost $150,000."

"Power and recovery is the heart beat of the mill," says power engineer David Mathews, seen here in front of the mill's power distribution panel.

Dale Rietze and Victor Scott cleaning the black liquor nozzles in the recovery boiler. Black liquor is sprayed into the recovery boiler, atomizing it into small droplets that burn easily.

The power boiler is similar to a wood stove or camp fire. Adequate air is needed to burn hog fuel completely and ash must be regularly removed. "The biggest issue with burning hog fuel is moisture content," says Mike. In general, fir offers the most heat value (cedar less), and older hog provides less heat because it has decomposed and the aromatic oils have evaporated.

The recovery boiler

The recovery boiler is fueled by "black liquor." Black liquor is a chemical solution used in the kraft pulp process that contains organic compounds soaked out of wood chips.

The recovery boiler efficiently accomplishes two essential tasks. First, it burns the organics in the black liquor, which generates power. Second, it heats the liquor to over 1,000 degrees Celsius creating a chemical reaction that lets the mill recycle over 90% of the liquor so it can be used over and over again.

As an added benefit, Howe Sound uses the recovery process to burn and neutralize the smelly gases produced in the kraft pulp process, making us a low-odor mill.

A day in the life of power & recovery

"There is no such thing as a normal day in power and recovery," says Terry Kelley. "There are too many variables that are always changing." Terry is a shift engineer in Howe Sound's power and recovery department—or P&R for short.

P&R is responsible for two main functions at the mill—generating power and recovering the chemicals used in the kraft pulp process. Depending how the mill and its boilers are running, these elements are in a state of constant flux between demand and supply.

One-half to two-thirds of the mill's demand for power is used in just one building—the TMP. Here wood chips are mechanically ground into the fibre used in newsprint manufacture. "It takes a lot of energy to grind chips into a fine pulp," comments Terry. When the TMP is not operating the mill usually produces a surplus of power, which is put into the BC Hydro grid.

In contrast, the kraft pulp side of the mill is an actual net energy generator because it produces black liquor. Black liquor is a fuel, used in the recovery boiler. When the kraft pulp side of the mill is shut down (for maintenance for example) the mill loses a key source of energy and usually must purchase power.

Balancing all of these elements (and more) is a part of everyday life in P&R.

Terry Kelley checking the feed of hog fuel to the power boiler. The mill uses about 4,000 cubic meters (or one barge load) of hog fuel a day.

IN THE COMMUNITY

Endowments provide sustainable support

"This is the first time a group of employees has pooled together to create an endowment on the Coast," says Don Basham of the Sunshine Coast Community Foundation. Howe Sound employees recently established an endowment fund with the Foundation supporting health-related programs. "We're hoping that other employee groups will be inspired and think about endowment as a way to provide permanent support to the local community."

Since its inception five years ago, the Sunshine Coast Community Foundation has established 12 endowment funds. The Foundation's program supports the total community. Donors can choose to give to a variety of endeavors—youth and seniors, arts and culture, environment, health and social services, and heritage. "And the money never leaves the Sunshine Coast," adds Don, giving donors peace of mind that their legacy directly benefits the local community, forever.

Don describes endowment funds as being similar to saving accounts—the money is invested and only the earnings are used each year for programs. Because the principal is never spent, the fund goes on eternally, providing long-term support.

From left to right: CEP Union Local 1119 president Allan Reid, Howe Sound general manager Fred Fominoff, Community Foundation chair Don Basham, and Community Foundation vice-chair Peter Bogardus signing the deed of gift for the endowment fund. Contributions to the endowment fund will come from the Employees' Charity Fund. Howe Sound employees voluntarily contribute to this fund through payroll deductions.

QUICK FACT

Howe Sound Pulp and Paper is the largest co-generation power facility in the province. "Co-generation" is used to describe a facility where steam powers a turbine on its way to a process. At Howe Sound, we produce steam for mill processes such as the newsprint machine and kraft pulp machine. As steam leaves the Power and Recovery plant it powers a turbine, generating electricity. Co-generation allows us to get good value out of the energy we produce.

CONTACT US

Howe Sound's News & Views is published once a month in the Coast Reporter. Issues are also available on our website at www.hspp.ca.

Questions? Comments?

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