

# Energy Savings from Advanced Screen Rotor Technology

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Advanced rotor technology can provide substantial energy reductions. Mill trials conducted in the brown stock screen system at Canfor-Northwood's mill showed how a 52% energy reduction could be obtained by installing an AFT Gladiator HC™ rotor and operating it at a reduced rotor speed. This amounts to a saving of 60 kW per screen and payback period of 12 months for the rotor. The mill trials were conducted as part of a BC Hydro demonstration project. A variable frequency drive was installed on the trial screen to optimize rotor speed and establish the sensitivity of power, efficiency and capacity to speed changes. The AFT Gladiator HC™ rotor was shown to reliably operate at a tip speed of 24 m/s – relative to a speed of 29 m/s for the existing rotor. Shive removal efficiency was shown to be about 98% with the AFT Gladiator HC™ rotor and a 3 m/s passing velocity. The change in rotor and speed led to reduced reject thickening. Maximum screen capacity increased by 20%. Pilot plant trials were conducted to complement the mill study and provide fundamental insights into the power savings. These trials confirmed the advantages of the AFT Gladiator HC™ rotor relative to conventional rotors in terms of power, capacity and reject thickening. These trials also showed that power consumption increases with rotor speed to the third power.