



Bioenergy Reference Project 3

Brightwater Hog Feed System



Overview

The Brightwater Engineers Limited (B.E.L.) Hog Feed System was designed originally for the large Blue Mountain Lumber sawmill site at Tapanui in Southland where a wide variety of sawmill wood and by-product residues are produced in the day-to-day mill operation. These residues include lumber off-cuts (green and dry), sawline screen “overs”, bark, fillet sticks, wet and dry sawdust and general wood-yard waste. In most situations, these difficult-to-handle materials, often tangled and multi-sized, are deemed to be too difficult to process and are usually dumped as waste at a significant cost. Installation of a B.E.L. Hog Feed system allows this “biomass waste” material to be converted into a valuable fuel resource.

The Situation

A significant volume of green sawdust, wood shavings, lumber off-cuts, and wood residue is generated during the daily operations of the sawmill and this is utilised as fuel for a 10 MW_{th} steam and electricity co-generation plant installed on the site. The energy plant has three fuel types, each stored in separate B.E.L. supplied silos and bunker systems enabling fully automatic mixed and metered fuel supply to the boiler plant. These storage silos are Saxlund International Sliding frame silo (550m³) for wet sawdust, a Saxlund International Sliding frame silo (275m³) for dry sawdust, and a Saxlund International Push Floor bunker (20 m³) for hogged fuel.

The site requirement was for a system capable of feeding the total range of difficult-to-handle waste residues and, by passing them through a size-reducing Montgomery Hog (installed as part of the energy system), converting this material into boiler fuel. An additional challenge was to be able to feed these residues into the hog as either individual streams or as a mixture of the different residue types. This material is delivered from their individual stockpiles to the B.E.L. Hog Feed System in bulk form by frontend loader.

The Solution

The Brightwater design team developed their Hog Feed unit to handle all of the material types encountered at the site and to provide a fully automated reception and discharge bunker mechanism. The materials are delivered by wheeled frontend loader to the 8m³ capacity reception hopper and are discharged by a sliding floor plate mechanism through an adjustable pressure-controlled regulating gate. The outlet discharges the unscrambled material onto a “Brute Force” type vibrating horizontal trough conveyor. This conveyor in turn feeds the now “aligned” residues onto an elevating belt conveyor discharging into the Hog in-feed chute.

Benefits Of The Brightwater Hog Feed System

- Unscrambles and discharges materials that are traditionally considered too “hard to handle”
- Aligns longer lengths for best delivery into Hog
- Controlled and variable discharge rates
- Automatic and simple unattended operation
- Low wear and maintenance
- Minimum housekeeping required
- Extremely rugged construction
- Quiet operation
- Turnkey construction - custom design, manufacture, installation, commission
- Allows all waste on a wood processing site to be utilised as boiler fuel

The Specifications

Material handled	Bark, unhogged ex debarkers, Screen overs ex mill saws Lumber offcuts up to 1.00m length, Fillet sticks, Production waste Dry timber dockings Lilly Pads
Method of delivery	Wheeled loader
Bin Storage capacity	8 m ³ maximum
Rate of discharge	Variable according to material type and hog requirement
Discharge conveyor	“Brute Force” type vibrating conveyor 6 m long, 450mm wide.



BEL Hog feed system,
Blue Mountain Lumber, Southland.

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