

## Macawber Installation Case Study: Ground Rice Hull ASH - AT Biopower, Pichit Thailand

### IN BRIEF

After the customer purchased four x 12/12 Denseveyor® systems to fuel supply of ground rice hulls to a biomass boiler, they followed-up by purchasing reliable Ashveyor® bottom ash systems from Macawber to handle ash collected from a dust collector and ESP, as well as bottom ash. Customer was chiefly interested in eliminating dusty conditions and pipe blockages which necessitated a lot of hosing down and near constant labor. Customer's previous systems were large blow-pot types which suffered from bridging as well.

### MATERIAL CHARACTERISTICS

Material	Ground Rice Hull Ash
Bulk Density	Average 300 kg/m <sup>3</sup> (19 lb./ft <sup>3</sup> )
Size	100% < 500µ, 80% < 200µ, 50% < 100µ
Temperature	Dust Collector Ash: 200°C (390°F) ESP Ash: 200°C (390°F) Bottom Ash: 350°C (660°F)
Moisture	0%
Condition	Free flowing when aerated, highly abrasive

### SYSTEM OBJECTIVES

1. Elimination of dusty conditions and pipe blockages
2. Reduce air consumption from existing systems
3. Reduce pipe and valve wear
4. Operate with 1 psig vacuum in baghouse
5. Prove concept at 20MW plant

### SYSTEM PERFORMANCE

Transfer Capacity	13.2Mt/h (14.5t/h) total, all systems
Conveying Distance	Average 70m (230ft)
Reception Points	One per system

### IMPROVEMENTS ACHIEVED

1. System operation is stable, reliable and efficient
2. Purchased directly through end user, using local contacts; dealing with local culture
3. Systems consume 1/3 the air of their previous systems equating to valuable efficiency gains
4. Customer is using plant as a proving ground for follow up projects elsewhere in Asia

