

Pallets to Sawdust: Turning Pallet Waste into Profit

Every year, millions of wood pallets reach end-of-life and are discarded, piling up in landfills, collecting in storage yards, or incurring rising disposal fees and contributing to environmental degradation. As disposal fees climb and environmental regulations tighten, companies face growing pressure to manage pallet waste more effectively. But with the right technology, pallet waste can be transformed into valuable, marketable products, including sawdust, opening a new revenue stream and avoiding the escalating costs of landfill or third-party disposal.

This paper outlines the economic and operational justification for investing in a high-throughput pallet grinding system, with breakeven volumes as low as 800 pallets per day, turning an expense into a new revenue-generating opportunity.

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KEY TAKEAWAYS

- **Pallet disposal is expensive**, costing up to **\$400,000 per year** for high-volume operations.
- **Grinding pallet waste into sawdust creates a valuable product** used in energy, agriculture, and manufacturing.
- A **Schutte Hammermill grinding system can yield over \$1 million in gross annual revenue** from sawdust sales.
- **Payback period can be under 12 months** when considering cost avoidance.
- The model is **scalable** and offers risk mitigation through **diverse sawdust markets**.
- This investment **improves sustainability metrics** while significantly enhancing bottom-line profitability.

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THE PROBLEM: COSTLY DISPOSAL OF PALLETS

For businesses that generate large volumes of pallet waste, disposal is not only a logistical nuisance but a material cost center. Disposal fees can range from \$1.50 to \$3.00 per pallet, depending on region, transportation logistics, and vendor contract terms. At 800 pallets per day, that translates to over \$400,000 annually in disposal fees alone.

THE OPPORTUNITY: CONVERTING WASTE INTO VALUE

By deploying a dedicated grinding system, pallet waste can be converted into screened, marketable sawdust. This sawdust can be sold in bulk for animal bedding, biomass fuel, or board manufacturing at rates between \$100 to \$200 per ton. A system operating at 4 tons per hour (TPH) with an average recovery rate of 90% can yield over 7,400 tons of sawdust annually based on one 8-hour shift, or over **\$1.1 million in potential gross revenue**.

CAPITAL INVESTMENT AND ROI

A complete grinding and air system built around Schutte Hammermill equipment, configured with conveyors, rotary magnets, fans, and cyclones, costs approximately \$1.3 million. Operating costs (labor, electricity, maintenance) total

around \$250,000 annually. With bulk sawdust pricing at \$150/ton, the net profit from sawdust sales alone exceeds \$860,000 annually. This results in:

- **Payback Period: ~1.5 years**
- **ROI: Over 65% in the first year**

COST AVOIDANCE: THE HIDDEN BOOST

Beyond direct revenue, the system eliminates disposal fees. For an operation handling 800 pallets/day, this amounts to an additional \$400,000 in annual cost savings. Including avoided disposal, the real ROI climbs above 90% with payback dropping to less than 12 months.

KEY ASSUMPTIONS

- Pallet weight: 40 lbs per pallet
- Processing yield: 90% recovery to sawdust
- Sawdust market value: \$100 to \$200 per ton (base case: \$150)
- Power consumption: 638 HP total system load
- Electricity cost: \$0.08/kWh
- Labor and maintenance: \$180,000 annually
- Operating schedule: 8 hours/day, 260 days/year

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ROI SCENARIOS

Sawdust Price (\$/ton)	Revenue	Net Profit	ROI	Payback Period
\$100 (low case)	\$748,800	\$489,602	37.7%	2.66 years
\$150 (base case)	\$1,123,200	\$864,002	66.5%	1.50 years
\$200 (high case)	\$1,497,600	\$1,238,402	95.3%	1.05 years

SCALABILITY AND RISK MITIGATION

The model is scalable. Running a second shift doubles output without doubling capital costs. Sawdust buyers span agriculture, energy, and manufacturing sectors—providing demand redundancy. By converting a cost center into a profit center, businesses also reduce landfill burden and improve sustainability metrics.

CONCLUSION

Any business generating 800 or more pallets per day should strongly consider converting pallet waste into sawdust using a Schutte-based grinding system. The financial justification is clear: with payback in under 18 months, and combined revenue and cost avoidance pushing ROI toward 100%, the economics are as sustainable as the solution itself. With diversified market demand for sawdust, companies can stop viewing pallet waste as an expense, and start treating it as a profit center.