CONTINENTAL BIOMASS INDUSTRIES, INC.

Losing Profits to Diesel? We Have an Electrifying Solution.

By: Dave Whitelaw

CBI offers electric-driven grinders like this Magnum Force 8400 — or diesel-to-electric conversion of grinders like this one.

The United States burns more than 4.1 million barrels (over 172 million gallons) of diesel every day. So it's not surprising that when diesel prices surge the price increase significantly impacts the economy. In fact, recent increases cost the US economy about $300 million in extra fuel costs per day. On a corporate level, the increase in the cost of diesel eats into profit margins — and this is particularly true in the transportation and manufacturing industries.

Those manufacturers performing applications like recycling or material processing rely upon equipment like grinders, chippers and shredders to yield their end product or material that comprises their end product. So, in June of 2008 when diesel topped $4 per gallon, companies employing 1000+ hp grinders, chippers or shredders using 40+ gallons of diesel an hour were staring at $160 per hour of fuel for a single machine — not to mention the cost of maintaining the diesel engines. That's why equipment manufacturers like Continental Biomass Industries, Inc. (CBI), Newton, NH are increasingly moving electric-driven equipment rather than diesel-driven versions of the same machines. According to CBI President, Anders Ragnarsson, "The fact is, we've offered electric-driven equipment for two decades, but the skyrocketing fuel costs have

shed new light on this option." In fact, CBI has designed and installed several hundred stationary electric-powered, purpose-built machines and systems in the past 20 years. Ragnarsson elaborates, "If mobility is not a necessity and sufficient power is available, our electric-powered machines consistently save our customers over 50% in fuel costs — with added savings in maintenance and capital expenditures."

The power to run this equipment has to be present or available at the job site. In the past, pulling in the required amount of power to locations off the "beaten path" was no small feat. However, with the current cost of diesel, the economics begin to look not only doable, but even appealing to manufacturers. Particularly for yard operators, including multiple yard operators who process wood, wood waste and C&D, the operational savings are tremendous.

Converting a 1000 hp system from diesel to electric from scratch is a significant undertaking and the manufacturer has to have a clear understanding of what's involved. The conversion itself, including all of the electric motors and controls required to operate the grinding system will cost approximately $250,000. In addition to these costs, adequate power lines and transformers need to be run and installed. This could be another $50,000 - $100,000. A call to your electric power company can get the ball rolling on estimating these costs.

So, where does the savings come in after you just spent $300,000? First, examine the electric part. In a recent installation, two 500 hp motors running at full capacity required just shy of 1000 amps. Therefore, a calculation of a 1000 amps, the associated volts, currents and power factor to run a 1000 hp grinder or shredder should be accurate. Depending on the area of the country you are in, electrical power costs approximately 7-12 cents per kilowatt hour (kWh). At the low end of 7 cents per kWh, the cost of running this 1000 hp grinder is under $53 per hour — or a whopping $107 per hour savings over a diesel-driven version of the same machine (which consumes $160 of fuel per hour). Even at the high end of 12 cents per kWh, the cost of running the electric-driven grinder is under $90 per hour — saving a considerable $70 per hour over the diesel-driven version. While all of these numbers are estimates and machines and motors vary, the potential operational savings of $100 per hour has many manufacturers closely examining this option. It is important to note that conversion is not as easy as simply removing a diesel engine and then adding an electric motor. The hydraulics have to be operated independently with an additional electric motor which may change the way the machine is operated.

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The fact remains, the $100 per hour savings multiplied by 3,000 running hours quickly pays off the $300,000 conversion investment ... and the rest is "butter" you can take to the bank. And it's worth mentioning that if you're running diesel-driven equipment, you're already paying that amount to your fuel man anyway. Plus you'll eliminate diesel maintenance, oil changes, air filter replacement, radiator problems, cleaning the engine at the end of each shift ... and the list goes on. Most importantly, you'll be reminded of your keen business sense each time the fuel truck passes by your site on the way to your competitor's location.

Guidelines for Diesel-to-Electric Conversion or Electric Machine Purchase:

1. Do you have access to the power required? Or can you get it?
2. When can it be installed?
3. Get a quote for the conversion specifics.
4. Plan to start the conversion in off season and plan, plan, plan.

Continental Biomass Industries, Inc. has been making purpose-built, electric-driven stationary grinders and systems since 1988. Call Dave Whitelaw at 603-382-0556 for more details.