

Battery-Powered Equipment “Costs Less Than Gas”

By Jim Ruen, Contributing Editor

Battery-powered, commercial grade lawn and garden equipment is taking over from gas-powered equipment and not just because it runs quieter and cleaner.

“Our 82-volt lithium battery-powered equipment saves money over gas-powered equipment and, with less noise and fumes, is better for the environment and much more pleasant to operate,” says Yin Chen, founder and CEO, Greenworks.

So Chen gets excited describing the long-term economics of going electric. He compares it to buying your fuel up front. “When we introduced the market’s first lithium-ion powered string trimmer in 2007, its performance didn’t compare to its gas-powered competitors,” says Chen. “Today we can provide equal performance or better at a lower total cost.”

One example of this is Greenworks’ 25-in. self-propelled lawn mower compared to a similar-sized, commercial, gas-powered mower, the initial cost of the Greenworks mower plus 2 batteries and a charger is about \$20 less than the gas-powered mower. If you replace both mowers at 500 hrs., and figure in fuel and maintenance, the total cost of the Greenworks mower is \$2,042, compared to \$4,140 for the gas-powered mower.

A similar case can be made for the company’s commercial, 60-in., zero-turn riding mower, notes Tony Marchese, commercial business unit leader at

Greenworks. “Someone looking at our zero-turn at \$24,000 (mower plus battery packs and recharge system) sees it as double that of a comparable gas unit,” he says. “They don’t consider how much gas and oil they use over the course of a year. That makes the cost much easier to justify.”

Greenworks designs and builds its own batteries, along with 80 percent of all components. They are designed for a balance between power, run time and recharge.

“We focus on building a battery that will give a longer run time under full throttle and recharge more quickly,” says Marchese.

Using the 82-volt architecture, the company has introduced 2.5, 4, 5, and 12.4 (backpack) Ah batteries, all the way up to 13.8 kWh for zero-turn mowers and utility vehicles.

The batteries power nearly 60 products with more on the way. Each tool is matched to an appropriate battery size.

“If a zero-turn would use 5 to 10 gallons of gas in a day, our 13.8 kWh battery provides equivalent running time,” says Marchese.

Greenway products include everything from a variety of string trimmers to chainsaws, blowers, snowblowers, and mowers, including the zero-turns and the UTV that use the 13.8 kWh battery. An exception to the 82-volt line is the 40-volt arborist saw with its 10-in. bar.

A computerized electrical system monitors all operational aspects of the batteries and the tools. In the case of mowers, when they



FARM SHOW writer Jim Ruen tested Greenworks’ new 82-volt UTV at a field day in North Carolina.

hit heavy grass, instead of slowing down the blade, the battery delivers more energy to the mower to maintain rpm’s. The system also automatically monitors the battery and keeps every cell balanced for longer life.

Greenworks keeps upgrading technology and batteries. Later this fall they are introducing 3 and 6 Ah smart batteries with built-in Bluetooth and USB connectivity. An app on your phone will give you full access to all types of data about the smart battery and the equipment it’s running. That includes the capability to monitor its location by GPS and to shut it down remotely should the equipment be misplaced or taken off site.

For a company that is only 16 years old, Greenworks is shaking up the outdoor

equipment industry with more than 3,000 patents. The 45,000 employees operate in 9 countries around the world with 500 engineers in the U.S., China and Sweden.

Greenworks recently introduced a line of 30 lawn, garden and shop tools operating on a dual voltage 48/24 power platform. Slip the battery into a 48-volt mower or trimmer, and it automatically adjusts to that need. Transfer it to a 24-volt drill or driver, and it matches that tool as well.

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Putting Battery Power To The Test

Contributing editor Jim Ruen has been testing some of Greenworks’ most popular commercial-built battery-powered tools on his southeastern Minnesota farm.

Sicklebar On A Stick

Greenworks calls their GHX 200 a 20-in. pole hedger. To this farm boy, it looks like a sickle bar mower on a stick. However, it has versatility that no sickle bar mower ever had. Unlike power hedgers, the nearly 48-in. pole keeps cutting edges at a safe distance.

I don’t have any hedges, but I have plenty of overgrown brush that turns trails into dead ends as the summer goes by. It was the perfect testing ground for the pole hedger. Between the rotating rear handle and the articulating head, I was able to cut easily and safely at any angle. I could slice at ground level, clip the vertical sides of a bush, or trim the top flat.

It’s also the perfect sidekick tool when doing late summer chainsaw work. By midsummer, the weeds and bushes on the edges of tree lines and fencerows can be tall and thick. That can be a real problem for cutting trees or brush in either area.

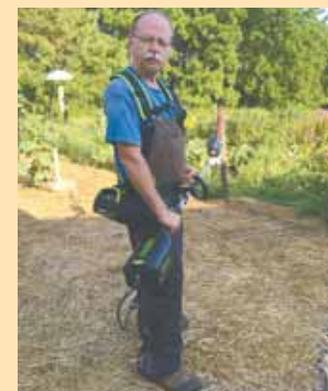
When I needed to take down a 40-ft. pine tree, the pole hedger made the job much safer. Instead of fighting my way through weeds and brush to the tree, I used the pole hedger to clear the area first.

The articulating head adjusts easily to its 7 different positions, making it easy to find the desired angle to clear away tall grasses and 8-ft. giant ragweed.

25-In. Walk-Behind Mower

If you think battery-powered walk-behind mowers are wimps, check out the Greenworks GMS 250. The 82-volt, dual blade mower takes a hefty 25-in. bite with every pass.

Slip the batteries in, insert the safety key, and you’re in business. The rear drive wheels make the job easy in the self-propelled mode, and the speed selector is



Ruen cut through some thick weeds and brush with this heavy-duty Greenworks

At up to 3,000 cuts a minute, the dual action blades make fast work of just about any grass, weeds or brush I threw at it. The variable-speed trigger lets me adjust to the material as it changes density or type.

The biggest downside is the weight. The cutting head is solid, and it doesn’t take long before you feel the effect of having it stuck out on the end of that pole.

easy to adjust on the go. Grab the self-propel lever and the mower is on the go with or without the cutting action.

At just over 70 lbs. without batteries, the mower is hefty. However, the large wheels make it no more difficult to push around than my older gas-fueled, 21-in. push mower.

I used the mower on Kentucky bluegrass as well as on an area well-populated with weeds



Ruen says the 82-volt mower runs about 80 min. on his lawn. An extra battery can be popped in if you need more mowing time.

and quackgrass. I even tried it out on some overgrown, 10-in. high, very thick grasses.

The GMS 250 handled everything with relative ease. As it moved into heavier material, the automatic increase in power was noticeable.

Little Chainsaw Does It All

Pick up the 10-in. GS 110 chainsaw from Greenworks and at first the 9-lb. chainsaw feels like a toy. But put in the 40-volt lithium-ion battery and it’s a mini-beast.

I cut everything from 2-in. woody honeysuckle stems to an 8 1/2-in. dia. 40-ft. tall pine. It chewed through both without a hitch.

While the pine was straightforward chainsaw work, the honeysuckle thicket was decades old with stems twisted up like a bowl of spaghetti. The short blade was perfect for getting in and around the mess of branches.

Stopping and starting was needed to make multiple cuts on intertwined branches. It would have been frustrating with a gas-powered chainsaw. With battery power, it’s a pleasure to turn it on and off, and it’s much safer. I wasn’t tempted to leave it running while pulling on a branch.

The GS 110 comes with a hook for hanging on a belt. Like its big brothers, it has standard safety features, such as a chain brake.

The only negative is that the little saw is so compact and light that one-handed and overhead operation is extremely tempting. However, while it may seem almost toy-like,



Greenworks powerful little 10-in. chainsaw cut down this 8 1/2-in. pine with ease.

this is a serious tool.

It would be perfect for clearing brush near a tree stand or trimming a fence line. The size makes it ideal for keeping in a combine or tractor cab to take care of fallen limbs.