



## Solutions for a Sustainable Supply Chain



### Electric Lawn & Garden Machinery

- No emissions
- Low noise
- Low weight
- Lower cost

TRU Campuses are going carbon neutral, choosing renewable energy to power vehicles and machines across all departments and service areas. Using renewable energy like electricity avoids the use of fossil fuel and resulting carbon emissions from burning.

### Market Innovation in Battery Lawn & Garden Machinery

Earlier generations of electric yard care machines used cords and did not have competitive performance in terms of range and power. Recent innovations in product design and widespread adoption of lithium technology have brought about rapid growth in battery-powered appliances ([CSA 2019](#)). Battery powered equipment has made incredible progress over the past few years; new models have excellent battery life and runtime. Look for products that have batteries equivalent to the runtime of a tank of gas, and/or with backpack batteries for additional runtime.

In 2016, Husqvarna commissioned a survey of 1579 consumers in the USA and found a clear demand for landscaping services that choose battery-powered equipment ([Husqvarna 2019](#)).

### The Environmental & Health Case for Battery Machines

According to the Government of Canada, a gas powered lawn mower emits 106 pounds of greenhouse gases every season. Due to their inefficient design, gas powered yard tools are a serious contributor to air pollution. In fact, a recent Environment Canada study found that operating a gas powered lawn mower for one hour has the potential to produce the same amount of VOCs, NOx, CO – all components of smog – as driving a new car for 550 km ([Source](#)). An Environmental Protection Agency study found gas yard tools account for 4 percent of CO2 emissions in the USA ([Audubon 2019](#)).

### Market Outlook

The global demand for power lawn and garden equipment is expected to grow 2.5% per year, reaching \$24.2 billion in 2021. Battery-powered equipment sales are out-pacing other options in every part of the world, thanks to its greater power levels and run times.

[Source: CSA](#)



Operating gas powered lawn care tools negatively impacts the Earth's ground level ozone. Ground level ozone is formed when emissions from gas powered machines both on roads and lawns react with heat and sunlight. During the height of the summer, ground level ozone levels become harmful to everyone's health. Those with pre-existing respiratory problems, older adults and younger children are particularly susceptible.

For landscapers that work continuously for many hours, the low weight, lower vibrations, low noise and no cancer-causing emissions of battery machines are healthier and safer than gas-powered alternatives. It is also cleaner, avoiding the fuel spills that occur with gas machines.

## The Financial Case: Less Maintenance & Lower Total Cost of Ownership

The initial cost investment of a battery-driven machine may be higher than a gas-powered equivalent. But the savings from the gas, oil, and filters you will never have to buy will soon outweigh that first cost. There is no need for routine engine maintenance. Battery machine lifetime is as long as that of gas-powered machines, but there are fewer parts to be served and the electronically-controlled drive system means less downtime and low operational costs. In the long run, a battery-driven machine can save substantial money.

## Which battery machinery is available?

- Lawn mowers and edgers
- Weedwackers/String trimmers
- Hedge trimmers
- Polesaws
- Chainsaws
- Leaf blowers
- Pressure washers
- Snow blowers
- Chippers and shredders

## LANDSCAPERS & GREEN TECH

65%

of consumers who have a lawn would choose a landscaper who uses eco-friendly outdoor power equipment over one who doesn't



### SILENCE IS GOLDEN

57%

of consumers would pay more for a landscaper who uses quieter outdoor power equipment

72%

of consumers would support companies that use eco-friendly outdoor power equipment over those that don't

AND

71%

of consumers believe companies that choose eco-friendly outdoor power equipment should receive tax benefits



## CONSUMERS & GREEN SPACES

78%

of consumers believe public parks should use eco-friendly outdoor power equipment for maintenance



70%

of consumers believe there should be tax benefits for people who purchase eco-friendly outdoor power equipment



## Which certification systems for Battery Machinery are available?

There is no certification system yet available on the market that sets standards for the most sustainable electric yard machinery. The Canadian Standards Association (CSA) and Underwriters Laboratories (UL) both certify based on an evaluation of the functional safety of products. Look for products certified to CSA C22.2 and UL 62841 standards for electric motor-operated hand-held tools.

Energy efficiency is an important consideration for electric yard machines. The U.S. Environmental Protection Agency's Energy Star label certifies energy efficiency in yard machines. Electric yard care tools using ENERGY STAR certified battery chargers use about 30% less energy. Cordless yard tools with ENERGY STAR certified battery chargers are often lighter and faster charging because they rely on high-output, light-weight lithium-ion batteries and smarter charging systems ([EnergyStar 2019](#)).



## Automated Lawn and Garden Care

Did you know that automated lawn and garden care using robots, drones and sensors in public spaces is an option? Robotic mowing technology has actually been used in Europe for over 20 years, though is relatively new to North America ([Source](#)). As one example, the Husqvarna Automower (see photo right) cuts grass into fine clippings that break down rapidly. This eliminates the need for pest control as most insects and fungus thrive in the thatch layer. Eliminating the thatch greatly decreases the chances of an infestation. It also reduces the need for fertilizer, as fast-composting clippings fertilize the soil ([Source](#)).

