

# **GAS LAWN MOWERS OR ELECTRIC & BATTERY POWERED MOWERS:**

Making an Informed Choice

A Position Paper by Briggs & Stratton Corporation



# GAS LAWN MOWERS OR ELECTRIC & BATTERY POWERED MOWERS:

## Making an Informed Choice

The nearly five million consumers who will purchase a new gas lawn mower this year can feel good about their decision. But how do they compare to electric and battery-powered mowers?

Today's gas mowers are remarkably better than they've ever been before – even when compared to a mower manufactured less than 10 years ago. They start more easily, run quieter, are more fuel efficient and they continue to provide the reliable power to work under the toughest conditions. These gas mowers also provide another important benefit – they run cleaner than ever before, in tune with today's more environmentally conscious lifestyles.

Just like other household items, from the latest energy-efficient appliances to triple-pane insulating windows, gas lawn mowers have evolved into the 21<sup>st</sup> century as far cleaner, more efficient products. Briggs & Stratton Corporation, the largest manufacturer of gas engines for outdoor power equipment, is committed to producing cleaner engines with reduced environmental impact.

### ■ MOWER EMISSIONS

Since 1995, Briggs & Stratton has invested more than \$50 million to cut engine emissions and an

additional \$100 million in related manufacturing improvements to cut smog-forming engine emissions by 75 percent, meeting today's EPA standards. Continuing investments will reduce emissions by an additional 35 percent by January 2014, meeting or exceeding the upcoming EPA Phase 3 standards.

When considering carbon dioxide (CO<sub>2</sub>) emissions – commonly known as our carbon footprint – it's important to assess gas mowers as part of the bigger picture. All gas-powered lawn and garden equipment combined produce less than 0.5 percent of all U.S. carbon emissions calculated from the EPA's greenhouse gas inventory<sup>1</sup>. According to the EPA, the average gas walk-behind mower produces nearly 90 lbs. of carbon dioxide (CO<sub>2</sub>) emissions per year.<sup>2</sup>

To put that into perspective, replacing a single 75 watt incandescent light bulb with a compact fluorescent bulb for one year more than offsets the CO<sub>2</sub> produced by a walk mower used for the same period of time<sup>3</sup>. For more perspective, an average household of four creates approximately 36,000 lbs. of CO<sub>2</sub> yearly, according to the EPA<sup>4</sup>. It would take more than 400<sup>5</sup> mowers to produce the same amount of CO<sub>2</sub> produced by an average U.S.

<sup>1</sup> [www.epa.gov/oms/climate/420r06003.pdf](http://www.epa.gov/oms/climate/420r06003.pdf), Sections 2.2, Section 8-Figure 8.1 U.S. greenhouse gas emissions in 2003 were 6900 Tg (also known as million metric tons CO<sub>2</sub>). Lawn & garden equipment contribution is 14.3 Tg (see <http://www.epa.gov/oms/climate/420r06003.pdf> and Section 8-Figure 8.1).

<sup>2</sup> <http://blog.epa.gov/blog/2008/08/05/green-things-come-in-large-packages/>

<sup>3</sup> [http://www.energystar.gov/ia/business/bulk\\_purchasing/bpsavings\\_calc/CalculatorCFLs.xls](http://www.energystar.gov/ia/business/bulk_purchasing/bpsavings_calc/CalculatorCFLs.xls) The average 75W incandescent light bulb is equivalent to a 19W CFL. The average annual electricity consumed by each bulb is 21 kWh for the CFL and 82 kWh for the traditional incandescent. According to EPA's Climate Change Action Plan (CCAP), each kWh produces 1.54 lbs. of CO<sub>2</sub>. The difference between a 75W incandescent light bulb and a 19W CFL (82 kWh versus 21 kWh) multiplied by 1.54 lbs. of CO<sub>2</sub> per kWh equals 94 lbs. of CO<sub>2</sub>. This is the amount of CO<sub>2</sub> saved by switching to a CFL and is equivalent to how much CO<sub>2</sub> is produced by the mower.

<sup>4</sup> [http://www.epa.gov/climatechange/emissions/ind\\_home.html](http://www.epa.gov/climatechange/emissions/ind_home.html) The average household produces 9,000 lbs. per person per year, according to this EPA site. An average household of family of four therefore creates approximately 36,000 lbs. of CO<sub>2</sub> per year (9,000 multiplied by 4 equals 36,000).

<sup>5</sup> 36,000 divided by 90 equals 400

household. Anyone who is concerned about their household's carbon footprint should understand their mower's nominal contribution.

All products have an environmental impact. The environmental impact of an electric or battery-powered mower may not be as obvious, but it's there. These mowers rely on electricity for their operation, either directly for corded mowers or indirectly when charging the battery that supplies their power – electricity supplied by power plants that may burn fossil fuels, emitting carbon dioxide from the generation of electricity<sup>6</sup>. There also are additional disposal concerns with batteries. They typically contain lead and sulfuric acid, both materials that require special handling for environmentally safe recycling.

Even if all gas mowers were converted to electric or battery power tomorrow, there would be only a very slight reduction in U.S. carbon emissions – less than 0.5 percent. But homeowners' ability to mow their lawns efficiently could drop off dramatically. That's because there is another important comparison to make when looking at these mower choices – their ability to mow the lawn.

## ■ **PERFORMANCE FACTORS**

Electric and battery-powered mowers work best for small, level lawns that are mowed regularly because they do not have the power to handle the thickest grass<sup>7</sup>. In contrast, a gas mower isn't limited by battery capacity or the length of a cord, nor does the homeowner have to wait for ideal mowing

conditions. Gas mowers have the power to handle any size lawn and the most challenging terrain and conditions, including tall, thick grass.

Gas mowers also offer a broad range of choices to homeowners. Engine power, mowing deck sizes, mower design – homeowners have many choices to fit their yard, lifestyle and budget. Gas mowers also have many features available to make lawn care easier. For example, gas engines have ample power to efficiently mulch grass clippings while mowing, creating a natural fertilizer that also reduces the amount of waste going into landfills. Even starting today's gas mowers has become remarkably easy, some with just the touch of a button. Finally, investments in research and development have resulted in advances in engine design and materials that have created engines that run quieter and are more fuel efficient.

Engines matter in outdoor power equipment. To make an informed decision on what to purchase, it's important to compare gas and electric/battery mowers on all of these levels.

## ■ **BRIGGS & STRATTON'S HERITAGE OF LEADERSHIP**

In 2011, Briggs & Stratton will produce nearly 9 million engines for outdoor power equipment in its U.S. plants. These engines power eight out of the top 10 lawn mower brands, as well as other outdoor power equipment such as generators and pressure washers.

<sup>6</sup> The majority of electricity generated in the United States is produced from burning fossil fuels. [http://www.eia.gov/cneaf/electricity/epm/epm\\_sum.html](http://www.eia.gov/cneaf/electricity/epm/epm_sum.html)

<sup>7</sup> <http://www.consumerreports.org/cro/home-garden/tools-power-equipment/lawn-mower-buying-advice/lawn-mower-types/lawn-mower-types.htm>



For more than 100 years, Briggs & Stratton has been an innovative leader in small gas engine design. These breakthroughs include developing the first light weight and affordable aluminum vertical shaft engines that have changed the way we mow our lawns, to developing an Anti-Vibration System that has redefined industry standards for operator comfort on lawn tractors. The company's advances in starting technologies have produced patented starting systems that eliminate the need to choke and prime the engine.

Over the past decade, Briggs & Stratton has invested millions of dollars to improve its products and reduce its impact on the environment. Led by a commitment to sustainability, we have reduced energy intensity by nine percent in the past three years, use recycled metals in our engines and recycle nearly 90 percent of all manufacturing byproducts.

In 2010, the company launched the first national oil recycling solution at participating Briggs & Stratton dealers nationwide, providing free drop-off locations for used lawn mower oil that makes it easy for people to dispose of used oil responsibly.

## ■ THE BOTTOM-LINE:

Briggs & Stratton produces cleaner running gas engines to provide choices that fit both homeowners' needs and lifestyles. On all measures of value – price, performance and environmental responsibility – the nearly five million consumers who will purchase a gas mower this year are making a smart decision.

*Briggs & Stratton Corporation, headquartered in Milwaukee, Wisconsin, is the world's largest producer of gasoline engines for outdoor power equipment. Its wholly owned subsidiary Briggs & Stratton Power Products Group LLC is North America's number one manufacturer of portable generators and pressure washers, and is a leading designer, manufacturer and marketer of home standby generators, along with lawn and garden and turf care through its Simplicity®, Snapper®, Ferris® and Murray® brands. Briggs & Stratton products are designed, manufactured, marketed and serviced in over 100 countries on six continents.*