De Hovenier

Battle of the batteries: the battery as a Trojan horse in the green sector

ARTICLE

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The battle for the green professional and a place in his van

The number of tool brands that you used to find in the gardener's van could often be counted on the fingers of one hand. But the number of brands that are trying to find their way onto that same van is now increasing. This seems to be strongly linked to the arrival of battery-powered tools. Manufacturers see the battery as a Trojan horse: once you have a place in the van, you will stay there.



When you zoom out and look at the market from a distance, you see that there are a number of trends in the battery transition. For example, the emergence of battery alliances, which smaller brands join. A few years ago you often saw *Powered by Kawasaki* or *Briggs & Stratton* on a bonnet, now it is more likely to be *Powered by EGO* or another battery brand.

The battery has changed the bond between brand and professional end user. A complete battery set including charger is relatively expensive to purchase and once you

have something from brand A, you will sooner choose A again when buying the next hand tool. After all, you already have the *expensive* battery. One of the interviewees therefore calls the battery 'the Trojan horse'. If the end user buys your battery, you are in. But it is more of a forced marriage than a purchase out of love, says another.
What do these brands think they can add to the perhaps quite complete range that is already available? We spoke about these and other topics with Kärcher , Stierman De Leeuw (EGO), STIHL , EuroGarden (ECHO and Cramer), Positec (Kress), Husqvarna , Makita , Festool and Milwaukee .

> **Rise and development of the Li-ion battery**
> A Li-ion battery is a rechargeable battery that is often used in consumer electronics and electric cars, mainly because of its high energy density and long lifespan. The battery must never be discharged too deeply and is therefore usually used in combination with a *battery management system* or BMS. This prevents deep discharge and overcharging. The battery is therefore often made specifically for a device, unlike, for example, a nickel metal hydride battery (NiMH) or a nickel cadmium battery (NiCd). Deep discharge occurs when the battery is discharged further than the minimum permitted battery voltage. Depending on the device, this is between 2.8 and 3.0 V. Discharging too deeply results in internal damage. A properly functioning control system stops the power supply when the internal voltage threatens to become too low. Sony and Asahi were the first companies to market a Li-ion battery in 1991. Each alliance and manufacturer purchases the Li-ion cells, which are made by a limited number of players in Asia, such as Panasonic, LG and Sony.

Batteries and continuity

Anyone who switches to a battery-powered machine park must consider a number of issues. One of these is the continuity of the work. How do you organize that? How long does a battery last, how many chargers do you need, how many batteries, how many amps do you need, where do you charge your batteries, is 18 V sufficient or do you have to click 2 x 18 V onto the machine? And is all that still ergonomically responsible? In short, a great many questions. Developments in the battery world are also still ongoing. As a result, more and more is possible, such as a mobile power bank that can be charged by solar cells on the roof of the bus. There seem to be few obstacles to constantly being provided with a fully charged battery. First of all, it is good to know exactly what we are talking about, because a transition has also taken place in communication about batteries.

Know what you are talking about, in other words: the transition in battery communication

The first question an end user often asks is: how long will the battery last? According to Johan Teeuwen (EuroGarden), that is not the right question. 'When promoting brands, the battery voltage is often used, with an indication of the power, so that it seems as if an 18 V would be less powerful than a 60 V machine. There is no greater nonsense. The motor has a wattage and that is all that matters. If the motor is 100 W with an 18 V battery, then it is more powerful than a 50 W with a 60 V battery. But if you increase the working voltage, it is possible to generate the same power with a lower current. The advantage of this is that less heat is generated and the battery provides a higher yield. How long you can use a battery can be found in the watt-hour value. That is the battery voltage, multiplied by the ampere-hour indication; that gives the watt-hour value. This is also a journey of discovery that the user must make and in which the dealers can help them. We are working on this in our dealer network. If the starting point is the most satisfied customer possible, you recommend smaller batteries that are changed more

often. Ergonomics makes the customer satisfied, not the fact that he can work a few hours longer with it.'

'The question of how long a customer can work with a battery was never asked when purchasing a petrol machine. People are afraid that they will come to a standstill. Refuelling is actually nothing more than replacing the battery and then you can continue. User patterns are very interesting. During a workshop we let people choose a combination of a machine and a battery. Many chose the strongest chainsaw with the largest battery. But after working with it for a short time, everyone experienced that this was not pleasant work; much too heavy!'



Wim van Veldhuizen, Husqvarna

Two platforms, one for heavy and one for lighter work

Husqvarna's battery history begins in 1995 with the robotic lawnmower. The battery technology used at the time has been further developed for all garden and park machines and later for the machines sold under the Husqvarna Construction flag. Wim van Veldhuizen of Husqvarna: 'Husqvarna pulled the cart for its other divisions, Husqvarna Construction and Gardena, for many years, but these divisions are now also providing great innovations. An example: our professional battery platform is 36 V and Husqvarna Construction now has a 94 V battery platform. This achieves a power equivalent to a 70 cc petrol engine. Our consumer line is affiliated with the Power4all battery alliance. This involves an 18 V platform. We expect that gardeners will soon purchase two types of platforms for their workshop or bus. Most machines will run on 36 V and a second platform will be available for really heavy work.'

Faster cooling with airstream technology

All Festool batteries are 18 V; the number of amperes varies. Next year Festool will introduce an 8.0 A battery; currently there are 3.1 A, 4.0 A and 5.2 A batteries available. Ergonomically, a 3.1 A battery can be very pleasant, because it is lighter - but also empty sooner. This allows the user to choose between a favourable weight or a long service life and thus determine the optimum combination for themselves. The 4.0 A is a *high-power* battery; the 5.2 is not. With half the total weight of the battery, the 4.0 A reaches up to 80 percent of the power of the 5.2 A battery. This shows the development of battery technology. Festool offers various types of chargers, including duo chargers. They are also available in various versions in terms of the number of amperes. Another development is the Airstream battery from Festool. A battery can only charge when it has cooled down. Thanks to airstream technology, an empty battery cools down up to

50 percent faster, so you can charge faster. When charging, the battery sucks in air, which keeps the battery cells cool and charges the battery quickly.



Wally Jongenelis and Jop Küster (r), Kärcher

Battery Power Plus

Wally Jongenelis (Kärcher): 'Our first battery product was our 9-litre dry vacuum cleaner, which has been on the market since 2010. We are now working with the fourth generation battery and the vacuum cleaner has evolved along with it. With the later arrival of lithium-ion, we saw opportunities for more and more machines.'
Kärcher started developing its own battery platform around 2016, for both professional and consumer products. In the years before that, battery-powered machines were also available, at that time in collaboration with an external battery partner. Jongenelis: 'We have had battery-powered products for a long time, such as scrubbers and sweepers. The interchangeable platform of our own brand has been around for about four years. These batteries are intended for both the professional and retail programmes.' Jop Küster adds: 'We started with the chainsaw and leaf blower. The range is now much wider, with a backpack vacuum cleaner, a high-pressure cleaner and a carpet cleaner, all unique products on our Battery Power Plus platform. Garden tools have been available on batteries for much longer. In our platform we have various garden machines and cleaning machines for the green sector.'

This year, Kärcher launched a light battery-powered backpack vacuum cleaner weighing less than 5 kg, with which the family business won an award. An even lighter version will be released next year. 'This way, the innovations keep coming and the target group is also broadened.'
The large scrubbers and sweepers have built-in batteries. A transition is visible at Kärcher: smaller tools and machines that have an integrated battery are being added to the battery platform. 'We constantly ask ourselves the question: what is best for the customer?'
'The choice for a built-in battery sometimes also has to do with the costs. A professional must be able to continue working; in that case, replaceable batteries are sometimes a better choice. We expect that all our vacuum cleaners will be available on battery within five years. What is already generally accepted for scrubbers will also happen for vacuum cleaners.' Kärcher also sees it with the consumer: they no longer want to buy products

with a cable. The increasingly longer battery life contributes to this, as does the fact that less maintenance is required.



Arjen Peeters, Makita

Cordless drill from 1969

Makita grew up in construction. In the early 80s, Makita started supplying the green sector with (hand) tools, such as hedge trimmers, angle grinders, brush cutters and lawn mowers, at the time still produced by the German Dolmar and supplied in Makita colours. In those years, the green sector was 'added on the side' and the priority was still with power tools and construction. Over time, Makita's strategy shifted to developing strong pillars in other sectors and branches. Makita now has five groups: construction, industry, cleaning, green and outdoor leisure.

In 1969, Makita developed the first cordless drill, a drill with a cable to a small box containing the battery. This hung on the belt. In 1978, the first cordless drill with a replaceable battery came into production, the 6010D. Makita saw the need for cordless equipment and continued to develop this. The first battery platform was already in existence in the mid-1980s, with 15 machines running on the same battery. Makita not only developed the machines themselves, but also the batteries - from nickel cadmium to nickel metal hydride batteries and finally the lithium ion battery around 2005. This brought about a revolution in the battery world: lithium ion batteries have no memory function and therefore last much longer. Arjen Peeters of Makita: 'Makita now supplies the fourth generation of 18V lithium batteries, which have been optimised, secured and controlled to such an extent that a reliable battery has been created with a registered failure rate of 0.2 percent. More than 380 machines run on the LXT platform of 18 V, the largest platform currently on the market.'

'For certain applications, however, especially in the garden and park sector, the LXT platform of 2x18V machines is not sufficient for intensive work. Think of backpack leaf blowers, brush cutters and angle grinders. The market for that heavier segment is still largely open. We offer the XGT 40V Max platform for this, with 150 machines on 40 V and 2 x 40 V a year and a half after the launch.'

'In March 2022, we stopped developing and producing fuel machines worldwide'

Peeters: 'Our vision is a world without cords and fuel; that is what we are working

towards. We are also giving shape to this by stopping the development and production of fuel machines worldwide in March of this year. We consider this our social responsibility. We believe that all devices that are used should be able to run on batteries. This also applies to the earth drill that we recently introduced. We can stop producing fuel machines because of the growth and development of our XGT platform. This can replace fuel machines that are used daily. Within one to two years, a heavy chainsaw with the power of an 80cc fuel machine will also become available.'

Backwards compatible

Milwaukee started with battery-powered machines in 1975; this involved a nickel metal nicad battery. In 2005, TTI Milwaukee acquired the patent rights to the lithium ion battery. This resulted in a Milwaukee battery platform of 12 V for handy tools, an 18 V platform with batteries in different amperages, and for heavier machines such as tire grinders the MX Fuel platform, of - at the moment - 72 V. The ninth generation of batteries is now active; developments are therefore moving quickly. Milwaukee's garden and park machines currently use both the 12 V and 18 V platforms; the MX Fuel platform will follow.

Milwaukee only has tools and machines with batteries. Because these batteries vary from 5.5 A to 18 A, the user can determine for himself which battery weight the machine works best with. Steven Marsoul, sales manager for Belgium and Luxembourg: 'For now, it is a conscious choice of Milwaukee to stay on 18 V, to create the widest possible range. In some machines we can also place 2 x 18 V.' Milwaukee batteries are *backwards compatible* , which means that the batteries also fit on machines from ten years ago, even from 2006.



Jurgen Albers, director of Stierman De Leeuw

'Manufacturers benefit from our knowledge of the market'

Jurgen Albers (Stierman De Leeuw): When we started with EGO in 2015, all dealers were already equipped with hand-held tools from other brands. At that time, many were petrol-powered, but also already battery-powered. We were able to get in there with EGO, with only battery-powered tools. We soon said goodbye to the fuel brands, because we wanted to become a specialist - and now we are - in the field of hand-held battery-powered garden machines.'

'EGO supplies a battery power unit under the name Powered by EGO. And in addition to our Eliet choppers, the brush machines and rough terrain mowers from AS Motor, the Tielbürger sweepers and the Allett cylinder mowers are also Powered by EGO. We at

Stierman De Leeuw are the importer of Eliet. At the moment, EGO can supply a battery pack of up to 6.5 hp, comparable to a 120-160 cc fuel engine.'

'The unique thing about EGO is the way in which this company built up its battery at the time. This was so well thought out in advance that both the batteries from the very beginning and those of today are still compatible with all battery garden machines in the range. In addition, the arc-shaped design ensures that the batteries do not overheat. EGO has eight batteries in its range, from 2.5 Ah to 12 Ah. With a battery voltage of 56 V, this amounts to a capacity of 140 Wh to 672 Wh. With this enormous capacity, the battery system can be used for numerous applications, with the same price per kWh for each battery.'

'All brands benefit enormously from the knowledge that we have of the market as a distributor; they rely heavily on our expertise. We know the market and can guide OEMs according to the needs of the end user, in line with our world. A brand like EGO listens carefully to its distributors; the new models are therefore partly designed by us. We have a wide brand and product range and go everywhere. Our network is much larger than that of the manufacturer.'



Tommy Nightingale

2500 charge cycles

'In 2008, STIHL introduced the first handheld machines with a lithium-ion battery. We recently introduced the AP500S battery, for all professional machines. It is equipped with flat laminated cells instead of round cells,' explains Tommy Nagtegaal from STIHL. 'This means that more energy content fits into the same size battery. With a doubling of the number of charge cycles from 1250 to 2500, the lifespan of this battery is generous: more than ten years.'

On the way to 11 amps

David Mooibroek, director of Kress: 'Positec has never produced petrol products, but has always focused on batteries. That was already the case 15 years ago with Worx and now with Kress of course. All Worx products work on the same battery; on some machines we click two. The development of batteries is enormous. A few years ago a battery had 1.5 A; now there are already 4A, 6A and 8A batteries available. For the professional market we are even going to 11 A.'

Cramer platform

EuroGarden supplies, through dealers, brands, machines and tools from ECHO and

Cramer, among others. Johan Teeuwen, *category manager OPE* at EuroGarden: 'Globe Technologie bought the Cramer brand in 2018 and subsequently used it to supply the trade with professional products. An R&D department was set up with 600 people, 50 of whom are engineers developing the Cramer line in Jönköping, Sweden. Since 2018, the range has been gradually converted to a professional level. That is going well; a lot is being invested in a relatively small name. An 82V platform was deliberately chosen for the professional market; since January 2022, we have been giving a ten-year warranty on these batteries. In addition to ride-on mowers, we have more than thirty handheld machines, all on the same battery platform. The largest zero-turn ride-on mower alone has an integrated 16 kWh battery, which allows you to mow for up to six hours.'

Globe Technologies produces 20,000 batteries and 30,000 DC motors per day

ECHO is a traditional Japanese company where quality and reliability are paramount. This brings with it a different development than the Chinese approach. 'Nobody can match the ergonomics and ease of use of ECHO', is Teeuwen's conviction. 'But the company does take the time for communication and development and there are only a few machines: ten models on 56 V, to be precise. That is too few to make a fist in the market. ECHO will only really be competing in about five years. ECHO's battery machines are just as good as the petrol versions. For example, the oil tank for the chain does not run out before the battery is empty; they are coordinated. That was also the case with the fuel engine; it is nonsense that this would be different with a battery machine. ECHO started selling battery machines in 2017 and a number of machines are added every year. The platform is 56 V with 2.5Ah or 5Ah batteries.'

220 V from mobile battery

A year and a half ago, Festool launched its SYS power station, which is actually one large mobile battery to which power machines - machines on 220 V - can be connected. This makes it possible to work all day long and also to work wirelessly with machines that still have a cord. Cramer recently presented a six-slot charger, with which six batteries can be charged simultaneously. Husqvarna Benelux works together with the company Wattsun in Arnhem. This company builds power banks that can charge and deliver energy simultaneously. If your bus has solar panels or if you drive from A to B with your bus, the batteries can be charged without the power bank running out. But continuity does not only relate to charging; the BMS and the materials used also contribute to it.

The cutting set also contributes to a longer battery life

Van Veldhuizen (Husqvarna): 'Battery technology involves four things: the battery, the machine, the charger and the cutting attachment, such as the mowing line, the grinding disc or the chain. All these elements of the machine communicate with each other via computer technology. The battery, the machine and the charger are equipped with a chip. The better the technology, the higher the performance. If one of these things is replaced by a counterfeit or by something that is not recommended, the performance of the battery can decrease. The three elements mentioned together form the BMS, the *battery management system* . If you want to achieve as much power as possible for as long as possible with as little weight as possible, you cannot simply exchange the elements with other brands. A professional end user has to work a full day in heavy conditions with full load, where the power, reliability, ergonomics and continuity of the battery are essential. All our professional tools are approved for IPX4, a certificate for working in rainy conditions. All battery packs and motors are equipped with active cooling, which extends the battery life and ensures that the machine performs optimally under all conditions. These are all features that you do not see in the consumer line. Professional work is about power, data and working with a battery for as long as possible. And about the right cutting gear. This is very important and also affects the

battery's service life. For example, the Husqvarna Construction cordless cut-off saw, the K1, has a specially developed grinding disc. Using a traditional grinding disc from another brand or from a fuel machine causes 20 percent loss of power compared to this grinding disc. The right cutting gear was already important, but with battery machines this is even more the case. We have also developed special cutting line for battery brushcutters: Corecut. This lasts longer and prevents loss of power. The story is similar for battery chainsaws: they are equipped with a specially developed chain and blade. These are thinner, which creates less resistance in the wood and - again - the battery lasts longer.' 'In the field there is often no opportunity to charge batteries. It is therefore important that they last a long time, but that often also means heavier batteries and therefore more weight. That is why we work with backpacks. Incidentally, all machines - for those who want it - can also be used without a cable, so with the battery on the machine. Brands for construction or installation technology generally assume that there is power available at the workplace and therefore often place smaller batteries on the machines. You usually need two, so also two chargers.'

Provide explanation to the user

Nagtegaal (STIHL): 'We take our customers through the process of switching to battery. That means that you have to learn to work energy-efficiently. We provide a course on the daily maintenance of the machines; we have service kits for that. We also provide advice on charging the batteries, both in the car and at the location, with a safe. We work with well-screened partners for this.'

Brand loyalty through battery

With hand tools with a separate battery, it seems obvious to buy a second item of the same brand. After all, the relatively expensive battery set is already in possession. Or do other factors play a role in the decision-making process? Johan Teeuwen of EuroGarden sees a forced marriage more often than a purchase out of love.



Marketing Manager Arjan Graafland, Festool

Investments are made in problem solvers

Marketing manager Arjan Graafland (Festool): 'If people are satisfied with the brand of

their battery-powered machine, the threshold for buying an extension machine of the same brand is low. However, customers do not necessarily have to choose one platform. It also depends on the solution you offer as a manufacturer. If your machine actually solves a problem for a customer, in our experience they are very willing to switch to the battery platform. To give an example: there is a Festool saw on 18 V, with which very simple, clean and straight saw cuts can be made in insulation panels in construction, so that the resident does not lose energy due to poor insulation. That is a problem solver that is invested in, even if an angle grinder of another brand already exists.'

Think carefully about switching to battery

Van Veldhuizen (Husqvarna): 'That's right; once you have the battery platform of a certain brand in-house, it is not obvious that you will switch to another platform. For both brands, you need knowledge of maintenance, for example. That is why it is important for Husqvarna that we are the first when companies switch to batteries. In the green sector, we have the best battery line; I am convinced of that. If you look at our systems: we were one of the first with batteries in 1995. This technology was later implemented in all handheld products. We were one of the first on the professional market and we are one of the few who insert the battery crosswise instead of at the top. This gives you more balance, less chance of moisture and you can easily work with different battery sizes. Companies that extensively test different brands and listen to their employees often choose Husqvarna. But choosing a certain brand also has to do with sentiment. *Seeing is believing.* For companies it is a puzzle to give substance to the transition to working with battery. You have to think about that carefully in advance.'

Forced marriage

Teeuwen (EuroGarden): 'Battery is pre-purchased fuel. Our Cramer 82V batteries have a ten-year warranty. As a user, just count how many tanks of fuel you need in ten years; then it's crystal clear. A battery is not expensive. Does the battery transition lead to more brand loyalty? Well, in many cases I see a forced marriage rather than loyalty. The customer still feels a bit bound to a platform. If you employ dozens of people, it is not easy to guarantee continuity on the work floor when you work with multiple platforms. It was sometimes difficult with different types of fuel, let alone with different batteries. The step to switch is more difficult than in the fuel era.'

'When you employ dozens of people, it is not easy to guarantee continuity on the work floor when you work with multiple platforms'

Battery as a Trojan horse

People are often brand loyal, is also the experience of Jop Küster (Kärcher). 'That is the case with Festool, Kärcher, Husqvarna, you name it. And the battery will only promote that. Still, I am convinced that users are prepared to purchase an extra battery if you have a unique product as a brand. You can see the battery as the Trojan horse, we sometimes say.' Jongenelis: 'It is a utopia to think that we can now take over customers of well-known brands from the green sector because we also have a few battery-powered machines in our program. They are not interested in that at all. In the same way, I do not expect our customers to leave if those brands make a few high-pressure cleaners. Our full focus is not entirely on the green sector and that of the 'green' brands is not on cleaning. I think there are enough fish in the pond; everyone takes their share. I do not expect any major shifts.'

'I think there are enough fish in the pond; everyone is taking their share. I don't expect any major shifts'

Customer loyalty through unique product

Arjen Peeters (Makita): 'I don't think there is a *battle of the batteries* , but a battle of the platforms. If you manage to add a new customer to your platform, they won't switch over so quickly.' 'A unique product helps with that, such as the ground drill that we recently introduced. This machine was already used as a right-angle drill in construction. With a few adjustments and configurations in the electronics, Makita now has a ground drill. It has proven to be a successful product in the green sector. We are the first with this, and yes, that is nice, because it creates a lead in the market.'

'We are the first to do this and that is great, because it gives you an advantage in the market'

Brand loyalty through innovation and battery

Marsoul (Milwaukee): 'Yes, the battery is a binding agent between your products. Unless the user is dissatisfied and switches away. But if the first product including a battery is a success, the customer will be more likely to stay and buy more of the same brand.'
It is also possible to create brand loyalty through battery by developing a battery-powered tool that simply does not exist yet, i.e. by being the first, such as the aforementioned Makita ground drill. 'Milwaukee is constantly coming up with new products,' says Marsoul. 'One of the newest products is the *fencing utility stapler* . Think of it as a very powerful, battery-powered tacker that can drive huge staples into posts without a cord or gas cartridge. That is what Milwaukee is good at: developing tools and machines that do not yet exist. In order to gather the necessary knowledge, there are always people from Milwaukee on the road to observe professionals, with their feet in the mud. That way we get a lot of user information.'

Dealer makes assessment of offer

Stierman De Leeuw has been around for 70 years and has been active in the garden and park sector all that time. Director Jurgen Albers: 'It is a fact that suppliers are eager to sell a battery. Because once the end user has chosen a platform, you know that more machines will follow. Although there are certainly also professional users who work with multiple brands. We have not changed our policy; we continue to show the strengths of the products we have to offer. Our dealers are *multi-branders* ; there are only a few who sell only one brand. And the dealer makes the decision about his offer to the end customer.'

Once the end user has chosen a platform, you know that multiple machines will be sold



Jos van der Stege, Milwaukee

'It's not just the battery'

Nagtegaal (STIHL): 'We do indeed see that professional end users buy multiple products from us. However, I do not believe that this is only due to the battery combination. In the past, we had a battery-powered pruning shear and it was indeed also bought by STIHL users who already had an AP battery, even though the shears were on the expensive side. But still: a battery manufacturer is not a machine specialist and the machine and its user remain paramount at STIHL. Specialists and larger gardening companies mainly buy quality and precision.'

'The professional is concerned with quality and good tools. For the private individual, you do see more and more combination products emerging, such as a mower with a hedge trimmer and possibly a leaf blower, especially if you sell two batteries. We also always advise our dealers that it is better to sell two batteries than an upgrade to a different type of battery. The customer can always continue and is then immediately a potential customer for other products that we offer without a battery.'

Send sales on battery

Positec/Kress emphasizes the usability of the battery in sales: 'Every product we sell comes with a brochure. It explains our battery concept and lists products that fit the battery the user has just purchased. Once a user has entered your platform, there is a greater chance that he will stay there and base future purchases on it. In DIY, we at Worx sometimes give away batteries when purchasing a tool.'

New brands on the market through battery

Making a battery-powered electric motor is a lot easier than building a fuel-powered machine. For a machine manufacturer, it is therefore relatively easy to add new machines to the existing portfolio and perhaps enter new markets. Or is knowledge of the sector and the needs of the end user more important than the battery itself? And are there OEMs from the garden and park sector that are moving to, for example, cleaning or construction? Because the other way around is also possible. We asked the market.

'Our range is also interesting for gardeners'

Festool is a German family business with a sales office in the Netherlands. The company originally came from a niche market, fine furniture manufacturing. 'We are a premium company in the sector. We also remain conscious of our production location in

Germany in order to be able to monitor quality.' Marketing manager Arjan Graafland speaks. 'The demand for good tools has increased enormously in recent years. Partly due to the expansion of our range, the construction sector is an increasingly large buyer of this brand.'
Festool is best known for its power tools. The company does not produce hand tools for green maintenance, such as pruning shears, hedge trimmers or lawn mowers, but the range is interesting for gardeners. 'Various activities are involved in the construction of gardens for which we have excellent machines, for example for making canopies. We notice that gardeners are considering our brand. We have traditionally focused more on the finer woodworker, but due to the expansion of our range, we can now also serve the gardener with good solutions.'

'We want to remain leading'

Van Veldhoven (Husqvarna): 'We want to remain a leader in the market. Of course we look at what other brands are doing, including those from outside the sector; perhaps we can learn something from them. But the transition from a cordless drill system to a chainsaw system, from installation technology to green maintenance, is not that easy. There is more to the work than just the battery: ergonomics, cutting tools, weight, they all count for the daily work. Making an electric motor is much easier than a fuel engine; this makes it relatively easy for a brand to move to another sector. You can also see that more and more brands are coming. The fact that the battery is becoming more common is good for every brand; everyone can benefit from that. Of course we want to remain at the forefront; all our developments and innovation activities are focused on that.'

'We have one chainsaw; that will not change with the arrival of the battery'

Karcher is yellow and gray. And green?

Kärcher has two divisions: the retail program that is available at the DIY store and the professional tools and machines. The Home & Garden line for consumers has the familiar yellow color, the professional machines are anthracite. For professionals in various sectors, Kärcher offers machines that clean or perform related activities, such as sweepers and scrubbers. But Kärcher also supplies field kitchens to various aid organizations and the Dutch army. Kärcher
focuses on the cleaning, industry, transport and logistics, construction, agriculture, *healthcare* , hospitality, automotive, retail and municipal works sectors.
Wally Jongenelis, product manager professional products: 'Cleaning is our core business. I won't say that garden tools are a by-product, but it is not our core activity. We help our customers a lot if we move the cleaning activities from inside to outside. That is the main reason why we also have a number of these machines in-house. People sometimes think that we want to compete with STIHL or Husqvarna, but that is certainly not our strategy. We have one chainsaw. The arrival of the battery will not change that.'
Marketing manager Jop Küster adds: 'We want to create as many battery-powered applications as possible for our customers. And yes, we are getting new customer groups now that we can supply a battery-powered carpet cleaner, which means that a power point is no longer needed on site. For example, we asked for testers for this battery-powered vacuum cleaner and then received many requests from churches - large spaces where it is useful to be able to work without a cord. But we do not have an active strategy to enter the green sector. Conversely, we do see more brands coming towards cleaning.'

The pie is being redistributed

As an established brand in the green sector, how do you view the entry of new brands? 'Peeters (Makita): It is only positive. It keeps us on our toes, so that we listen even better to end users and make even better machines for these end users. If companies see a business in something, there will be entry. That is always the case; new parties enter and some leave again. We will wait and see, but we do not focus on the competition and trust in our own strength. Listen to what the market wants and deliver quality; then everything will be fine. In the garden and park world, the public is loyal. In the fuel machines, STIHL dominated for a long time, because it did that very well and set everything up technically well. With the arrival of the battery, the cake is being divided again; everyone can claim their piece. Everyone has to do their best for that, has to prove themselves again, and that is nice to see. That is why I think it was a good move for us to develop our battery platform in this way, with a lot of tools that fit on it.'

'Everyone has to prove themselves again and that is nice to see'

'Our battery platform can do more than just power tools'

Milwaukee is one of the brands that are new to the green sector. Milwaukee currently has nineteen battery-powered solutions for the garden and park sector, such as a hedge trimmer, various chainsaws, a brush cutter, a leaf blower and a lawn mower. 'Our goal is to expand this range significantly and quickly', says Marsoul. 'Thanks to our enormous know-how and patents, we are able to continue developing at high speed.' Jos van der Stege, business development manager for the Dutch market, adds: 'At Milwaukee, we realize that we can do much more with our great battery platform than just power tools. At Milwaukee, products are developed based on the idea that we have to solve a problem for the end user. So we do not convert machines from petrol to battery. In doing so, we look at the optimal functioning of the combination: machine, battery, accessories and purpose. Let's start by saying that the established brands have very good equipment. But some products that gardeners also use regularly are not in their range, such as an impact wrench with sockets or a drill with drills. For the gardener and others in the garden and park landscape, we offer the convenience of a single platform on which all machines run. Milwaukee invests enormously in innovation and product development for the garden and park sector and we do that for a reason.' Marsoul: 'There is also no ambiguity or confusion about whether our products are intended for private individuals or professionals, which you sometimes see with other brands. Milwaukee is for the professional; for the DIY sector, we use Ryobi.' Van der Stege: 'We are busy setting up a dealer network, both in the Netherlands and in Belgium. We think that the market for garden and park can be complementary to power tools through the battery platform. That offers a lot of opportunities.'

'When we added EGO to our portfolio, we already knew the game'

Jurgen Albers (Stierman De Leeuw): 'More and more newcomers are entering the market, especially from the power tool world. These are often brands that have a strategy to make the entire line of garden and park machines and tools, and within that to make an entire line of machines and tools that can work on the same battery. Chervon, the parent company of EGO, makes a separate line of garden machines that is in no way compatible with the power tools that Chervon also makes. The traditional brands have grown by making fuel-powered machines and now have to make the transition to battery. These newcomers do not have any fuel machines at all and are now applying their battery knowledge in the garden and park sector.'

'By choosing battery we have said goodbye to some brands'

'The battery transition has had an impact on our brand portfolio. About six years ago, we had a much larger range of brands. At that time, we opted for battery, and with that we said goodbye to some brands. In 2009, we had already become the importer of Pellenc, one of the first manufacturers of battery-powered garden machines. At that time, they were actually already a newcomer, because Pellenc did not make fuel machines at all. Pellenc had knowledge of the fruit growing sector and made machines for that. Based on that expertise, the company entered the garden and park sector. At that time, we still had to do a lot of missionary work for the battery; people did not know the system. When EGO came, we already knew the game: the dealers, the market, the user. For us, it was therefore relatively easy to introduce a brand like EGO to our market.'



Johan Teeuwen, Eurogarden

Product is central

STIHL is active in the green sector, the private sector, cleaning, building and construction. In addition, there is the rental market. Tommy Nagtegaal: 'For other brands, the battery transition has led to more opportunities. For construction-related products, battery platforms have been started that are now also looking at the green sector or are actively entering it, such as Milwaukee or DeWalt. The battery platform is then the basis; new machines are added to that. We have not done that so far and are sticking to the products that we already offered for this. We are also not actively entering other markets. For example, we do not have screwdrivers and will not develop them either. For the green sector, STIHL has added a few applications, particularly for the private market, such as the pruning saw. We now have that on battery; you can saw through branches with a thickness of up to 8 centimetres with it. A small dustbuster on battery is also such an example. In principle, it is intended for the private market, but the gardener also uses it to vacuum his car clean.'

'The big difference between STIHL and most other brands is that for us the product is central and not the battery. We have become known and big by making comfortable and ergonomic machines. In addition to the product, the user is central to us. Of course, we continue to develop in the field of the battery, just like any other party. To do this, we work together with good partners.'

'We add something to the market'

Kress is one of the brands of parent company Positec, as well as Worx and Rockwell. Worx has been sold worldwide for about fifteen years now and focuses on the DIY sector. The originally German brand Kress was purchased by Positec six years ago to be used for the professional user in the garden and park sector. Under the name Kress, robot lawn mowers and other products are sold that work on a 20 V, 40 V or 60 V platform. Positec buys the lithium-ion cells and builds the batteries completely itself.

'I think we can serve part of the market'

Next year Kress will present a new technology in its batteries. Director David Mooibroek: 'The time it takes to charge a battery, the lifespan and the power that a battery can deliver, are still an obstacle for professionals to make the switch to battery. Positec has done years of research with a scientific institute to remove these obstacles. We have now succeeded in applying a technique that gives the battery at least the same power as an equivalent petrol product and with which it can be charged in eight minutes, even the heavier 11 A. Furthermore, the battery can be charged more than 3000 times. We give an eight-year warranty on these batteries. Our battery blower, for example, blows with 35 newton; that is very powerful. I think that we are distinctive with this, both in terms of quality and design and ergonomics, and that we add something to the market. When we started with Worx, there were also doubts in the market, because Black & Decker, Bosch, Makita and so on were already there.'

Market in full swing

Johan Teeuwen (EuroGarden): 'With the reduced need for service, it is a lot easier for many manufacturers to make an *entry* in the field of garden machinery and tools. It is relatively easy to make a product that meets all machine guidelines. That is why we also see that many low-quality products appear in the consumer lines and in e-commerce. This does not apply to the professional; they want good material and advice. In addition, employers have a duty of care. There are also brands that are departing from the battery machine market, but more are joining. The market is in full swing. Cramer focuses on better ergonomics in its own development, tailored to the European market, and ECHO is particularly aware that construction and development must be done faster.'

> **Battery Alliances**
> Battery cells are produced by only a limited number of manufacturers, all of which are located in Asia (China, Japan and Korea). These include CATL, LG, BYD and Panasonic. The cells are purchased by battery manufacturers. There are companies that develop and build their own batteries, such as Festool and Milwaukee. There are also brands that choose to join a platform because they are too small to develop their own battery or because it does not fit in with the company strategy to make their own batteries. For example, Eliet's choppers are equipped with a motor with an EGO battery pack and Cramer also has a sales team ready to make batteries available to the market.

A number of major battery alliances, also suppliers of battery cells

There are a number of large battery suppliers that almost all brands are affiliated with or purchase their batteries from. These are - and this list is not exhaustive - Globetools (in which STIHL has had a stake since 2016), Positec (also known for its own brands Kress and Worx), Chervon (with its own brand EGO) and YAT. For consumer tools and

machines, CAS Cordless Alliance Group and Power4All are the two large alliances. There are regular shifts in the battery alliances. For example, Rothenberger recently parted ways with CAS and Kärcher initially worked with the EGO platform, until Kärcher started developing its own batteries with a focus on cleaning machines.

Closed platform

Festool has its own battery platform. 'All new machines that we introduce are battery machines; they are the future. Our battery fits all our machines. The platform consists of 18V batteries and where necessary, two can be clicked onto a machine. It is a closed platform for Festool equipment. For us, it is not an option to make our batteries an open platform and we do not have to join another platform either.'

Private sector market share

Husqvarna for professionals has its own battery line. For consumer products and Gardena, Husqvarna uses a battery alliance: the Power4All alliance with an 18V battery. According to the alliance's own website, Bosch, Flymo, Steinel, Kübler, PerfectPro and Gloria have also joined. 'We think we can maintain our market share in the private market in this way. Such a platform is very convenient for consumers: their hedge trimmer, drill and sander all run on the same battery, and you need fewer batteries, which is sustainable. As a consumer, such a basic platform gives you sufficient quality to do your job.'

For personal use

Peeters (Makita): 'I see that brands like Metabo are making their battery technology available to everyone. We don't do that, but we do have 380 machines on our own battery platform. There are also companies that buy our batteries and chargers and use them to control machines, including in installation technology. We understand the emergence of battery alliances and see the point in them. Smaller brands and companies that make larger machines in smaller runs have to do something to keep development costs within limits.'

Not an issue

'I see fewer alliances in the professional market than in DIY. There you have Power4All and CAS, where Bosch, Gardena, Metabo and many other brands are affiliated. Such an alliance is also not a bad development in the professional market', says Mooibroek (Positec). 'It is mainly interesting for smaller companies and companies that sell niche products. Kress wants to become a full-fledged and large player. Participation in an alliance is not an option for us at the moment.'

Safety

Lithium ion batteries must be handled with care. If a cell becomes restless due to a fall or overheating, there is a risk of fire. Lithium ion cannot be extinguished. The fire must be allowed to burn out or the burning unit must be placed in a tray or container with water, depending on its size. Care is also required in daily handling. After the working day, the batteries are stored and charged in the workshop or elsewhere. Guidelines have been drawn up for this, which are included in the Publication Series Dangerous Substances (PGS) 37-2. This is still under development. The website www.infomil.nl shows which rules currently apply and from what extent they must be followed.

In anticipation of the entry into force of guideline PGS 37-2, storage cabinets and safes are already available on the market. These are sometimes divided into fireproof compartments, so that a battery, if it ignites, ignites in isolation. As stated, this is not mandatory. However, it is wise to find out what you can do to work as safely as possible. It can happen that an insurer requires proof in the event of a

calamity that you have handled the batteries safely.
Various manufacturers are also concerned with safety: through instructions, explanations or by welding the cells at two points in the battery, so that they are less vulnerable. What is important: do not buy counterfeits. Lithium ion is dangerous; you must handle it with care. The batteries of the well-known brands have all been tested, extra welded or cooled and can take a beating.

Safe transportation
In addition to the mandatory certifications, Festool pays special attention and has a special process for the transport of heavier batteries, such as the 8A battery. For example, a sticker is placed on the package so that the driver knows that he is dealing with lithium-ion.
Kärcher also pays attention to safe transport: 'Where do I store them and how do I charge them? That is becoming increasingly important, as is safety during transport. These are matters that we are working on. We look at the laws and regulations. If your battery or machine is defective, procedures must be drawn up for this. A machine that is returned to us may not be sent together with the battery. A damaged battery may not be transported. We provide clear instructions for any returns; there is a separate procedure for this. The insurers also set requirements.'

Have your battery read after a heavy fall

Van Veldhuizen (Husqvarna): 'A characteristic of lithium ion is that damage, for example after a heavy fall, is not immediately visible. As a result, some cells in the pack can become restless and cause problems. The "infection source" can spread, which can cause a fire. Lithium ion cannot be extinguished. The only options are to throw the burning whole thing in a container of water or let it burn out completely. In the Netherlands, a guideline has now been drawn up, PGS 37, for storing and charging batteries in a professional environment in a building. There are special cabinets for this: Denios cabinets. We supply those too. These can detect fire by means of sensors and then activate a fire extinguishing system that interrupts the fire triangle; the oxygen is removed with aerosols. This cabinet must then be taken outside, where it can then burn out completely.'
'This standard has not yet been fully adopted, but what is important is how the insurance company views your business operations when a fire breaks out. It is a bit of a grey area, but it is important. Employees should also know that they should give a dropped battery to their manager, even if there is no visible damage. The dealer can then read it to see if the battery is unstable. I also recommend not putting batteries behind the windscreen; they will become far too hot when the sun shines on them. Don't drop them, don't put them loose in the bus, put them in a box, remove them from the machine after use, take them to the workshop after work and charge them there. If they are damp, store them in a ventilated area, such as our cupboards. Employers do not always pay enough attention to this. Our batteries are completely vulcanised; little is done with them. But anyway, it remains important to introduce these working habits. A good, original charger is also important here. It provides stability to the battery during charging.'

Batteries in a safe

Seefion supplies safes for (fire) safe storage of lithium-ion batteries. These safes are European certified against fire according to EN 14470. 'The safe contains compartments in which block batteries and also larger backpack batteries can be placed separately', says Remco van Kuilenburg. 'A maximum of eight backpack batteries or twenty block batteries can be charged in a safe. The safes are scalable, so every company can have a safe made to measure. The Seefion can charge in phases, so that there is no

undercapacity in the meter cupboard and all batteries are still charged in the morning. If there is power in the building, Seefion also has solutions for that.'
The Seefion safe contains a heat smoke detector in combination with forwarding to the control room of a company or organization. An incipient fire is reported to the control center, so that action can be taken. Van Kuilenburg: 'The heat smoke detector also switches off the power to the safe, so that no batteries are live.'

Toolbox training on safety

STIHL fills in the subject of safety practically and on the work floor: 'We aim for quality and certainty and do that very solidly. We guide the customer and advise which battery range can be compared to the fuel machine park and how to work with it. We provide toolbox training on safe working, on which machine is best suited to which job. We show how much CO2 emissions you can save by making the switch, calculate the current fuel consumption and make the savings clear in the number of litres and in euros.'

> ***End of life cycle***
> Batteries are getting higher amperages and more power, and the lifespan of the cells - and therefore the entire battery - is also getting longer. For example, during GroenTechniek Holland, STIHL launched a new battery with flat cells that last much longer: up to 2500 charging cycles. However, there also comes a time for these batteries when they are used up and have to be disposed of.
> The website of Stichting Stibat states: 'Producers, importers and manufacturers of batteries and accumulators have a producer responsibility. Through the Battery and Accumulator Management Regulation 2008, they have the legal obligation and responsibility to collect and recycle waste batteries and accumulators in a safe and responsible manner. In addition, sellers of batteries and accumulators have a collection obligation. This means that they must collect waste batteries, accumulators and e-waste when end users offer them.'
> Stichting Stibat was established in 1995 by battery manufacturers and importers to be able to meet this legal obligation. They pay an annual disposal fee for the removal and processing of batteries and accumulators. The machines themselves must also be registered, namely with We-Cycle of the Stichting Open. There are plans to merge these two foundations. All parties we spoke to mentioned Stichting Stibat and/or the disposal fee.

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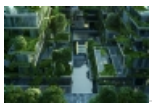
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AGENDA



Podium Boskoop lecture about biophilic design
Monday, September 2, 2024



Knowledge workshop 'The garden of tomorrow: sustainable and excellent'
Thursday, September 5, 2024



Dahlia and Continuous Flowering Days in Appeltern Flower Park
Saturday September 7, 2024
to Sunday September 8, 2024



Green Technology Holland 2024
Wednesday September 11, 2024
to Saturday September 14, 2024



GaLaBau 2024
Wednesday September 11, 2024
to Saturday September 14, 2024



TENDERS

The municipality of Wijk bij Duurstede awards RAW specifications for green maintenance and cleaning 2024-2027 to Florijn Aannemingsbedrijf BV.
Thursday, August 22, 2024

The municipality of Tilburg awards the green development of Tradepark Noord to Van Helvoirt Groenprojecten.
Tuesday, August 20, 2024

Staatsbosbeheer awards mowing of wet natural grasslands Staatsbosbeheer 2024 - plot R15 to Loonbedrijf Dunnink.
Tuesday, August 20, 2024

Staatsbosbeheer awards mowing of wet natural grasslands Staatsbosbeheer 2024 - plot R04b Drentsche Aa-Zuid to Loonbedrijf Dunnink.
Tuesday, August 20, 2024

Staatsbosbeheer awards mowing of wet natural grasslands Staatsbosbeheer 2024 - plot R08 IJsselvallei Vechtdal to Loonbedrijf Dunnink.
Tuesday, August 20, 2024



CLIPPINGS

In September, visit one of the four flower meadow courses of Cruydt-Hoeck in Handel (NB), Nijeberkoop (FR), Oosteeklo (Belgium), or Leiderdorp (NH).
Monday, August 26, 2024

Construction of Bulderweg creates new garden for Nijkerk town hall
Friday, August 23, 2024

'Green areas in Rijswijk are a disaster'
Thursday, August 22, 2024

Course 'learning to scythe' at the Poelboerderij
Tuesday, August 20, 2024

Less mowing in Gooise Meren
Tuesday, August 20, 2024

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GEOPROARTE

TRENDING



"Tiktok gardeners" of Tuinmaterialen.nl bankrupt: leave behind 8.5 tons of debt
15-08-2024 | NEWS



Tractor in ditch after mowing accident: driver seriously injured
13-08-2024 | NEWS



Green transfers of August
05-08-2024 | NEWS



Construction company fined after fatal accident during weed control on central reservation
05-08-2024 | NEWS



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