

LEM

Life Energy Motion



Annual Review

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Talent and values



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R&D focus



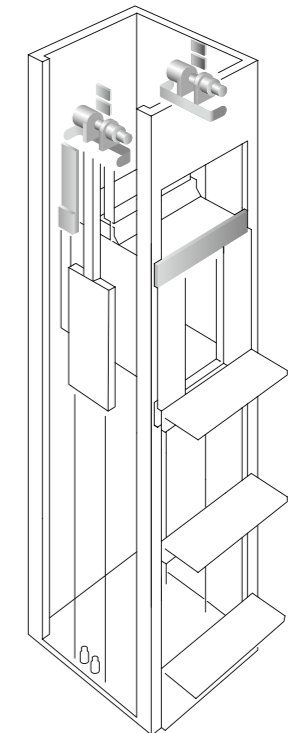
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Mega trends



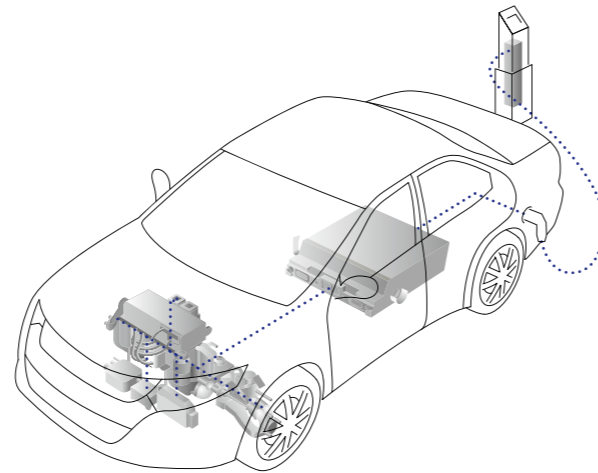
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Industry



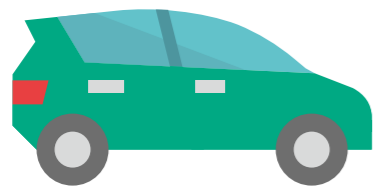
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Automotive



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Trends, strategy, organization



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Welcome all our stakeholders



This year we have separated our traditional annual report into two documents. The first part is this Annual Review which is aimed at a broader readership among investors, customers, business partners, employees and local communities. Our goal is to better explain the mega trends driving LEM's future growth, why our products matter to so many parts of the economy, how we are investing in new technologies and what we are doing to develop and attract the best global talent. The second document contains our financial statements and can be found on our website.

We are also proud to announce the launch of a new brand identity for LEM. The time is right, given the changes in our markets and the exciting new prospects for our business, to improve the visibility of LEM and "tell our story in a clearer way". You will notice the updated logo, building on the heritage of our magnetic coil, plus a refreshed suite of colors. Most importantly, we have a new claim for what LEM stands for – Life, Energy, Motion – which is explained on pages 8–13.

For those of you new to our company, we have also simplified who we are into a single sentence: "Leading the world in electrical measurement, LEM engineers the best solutions for energy and mobility, ensuring that our customers' systems are optimized, reliable and safe."

Mega trends accelerating change

Our growth is driven by mega trends which give multiple opportunities to leverage LEM's expertise and provide returns to shareholders. These trends drive demand for electrical sensors: renewable energy, decarbonization, energy efficiency, reliable energy, distributed energy, mobility, automation and digitization.

Our strong heritage is Industry applications where we are the market leader and have significant growth potential, while our fastest growing sector is Automotive applications. Far from being a mature market, the current sensing products are undergoing significant mutations, driven by new applications and technologies.

A more agile LEM organization

We have the strength of a diversified global footprint, with a leading presence in China. However, we are making the organization more agile to ensure we capture and manage this global growth. Our HQ in Geneva, Switzerland is setting strategy and standards, leading in-

novation and coordinating all our global sites; these are being empowered with skills and decision making in R&D, operations, sales and quality control. Production in Beijing and Sofia now accounts for 80 % of global output.

LEM is made of the expertise, talent and leadership of the 1,500 people working relentlessly to bring customers the best solutions. We are investing resources in talent development programs and coaching sessions to help talents grow and shape our future.

R&D investments start to bear fruit

This year we continued to increase our investment in R&D to assure long-term growth, with investments up from CHF 21.3 million in 2017/18 to CHF 27.6 million in 2018/19. These investments are leading us from a traditional, electromagnetic sensors company into a diversified business of various integration levels. Unlike a pure player, our R&D team needs a diversified skillset to deliver the best product; this is reflected in the 16 % growth in our internal R&D team, and we hired a total of 21 engineers. This investment is bearing fruit, as this year we launched 6 products in the Industry segment and 2 products in the Automotive segment.

Robust financial results

We are pleased to report another year of robust results.

Sales in the financial year 2018/19 totaled CHF 321.6 million, an increase of 6.8 %, and up 5.8 % at constant exchange rates. In the context of the global economic slow-down, this was a more than satisfactory performance. 61 % of our top-line growth came from Automotive customers, driven by the transition to green cars.

EBIT increased to CHF 64.8 million from CHF 63.1 million, notwithstanding the increased R&D spend. Our EBIT margin was slightly down at 20.1 %, but remains robust in the long term. We posted a net profit for the year of CHF 52.4 million, down from CHF 54.4 million last year. Last year's net profit included a one-off tax related benefit of CHF 3.4 million.

For the financial year 2018/19, the Board of Directors is pleased to propose a dividend increase to CHF 42 per share, which represents a dividend payout ratio of 91.4 %. This dividend proposal is a sign of confidence in the continued success of LEM.

Thank you

On behalf of the entire Board of Directors and the Executive Management, we thank shareholders for the confidence they have placed in us. Special thanks go to our employees worldwide for their expertise, reliability and innovative solutions. We would also like to extend our gratitude to our customers, suppliers and business partners for the many successful collaborations.

We hope you enjoy this first new look Annual Review. Hopefully you will gain more insight into what drives our business and how LEM is helping our customers and society accelerate the transition to a sustainable future.

Andreas Hürlimann
Chairman of the Board of Directors

Frank Rehfeld
Chief Executive Officer

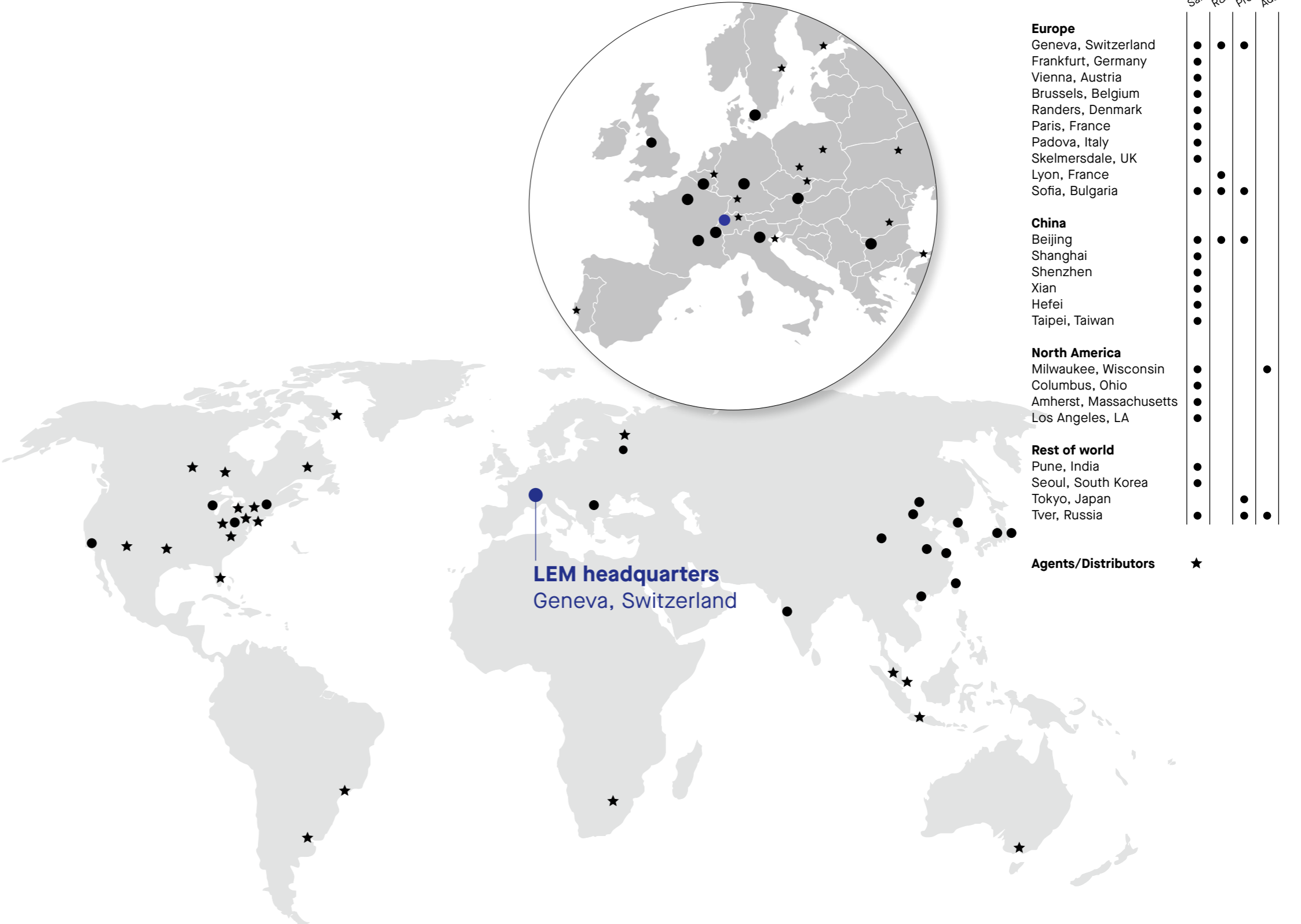
Leading the world in electrical measurement



A leading company in electrical measurement, LEM engineers the best solutions for energy and mobility, ensuring that our customers' systems are optimized, reliable and safe.

Our 1,500 people in over 15 countries transform technology potential into powerful answers. We develop and recruit the best global talent, working at the forefront of mega trends such as renewable energy, mobility, automation and digitization.

With innovative electrical solutions, we are helping our customers and society accelerate the transition to a sustainable future.



How many of us desire life unplugged?

Life

A hand holding a pen, with the word 'Life' written in large, stylized letters. The background is a gradient of blue and purple.

Even brief downtimes are unsettling. We love the ease, convenience, color, brightness, speed, mobility, on-command, real-time connectedness that electricity provides. Streams of steady, safe, uninterrupted electric flow run our devices, power our vehicles, drive our factories, enhance our healthcare, recharge our batteries, send our communications, light our communities, warm and cool our buildings, and capture our imaginations.

None of this would be possible without electric sensors. Many provided by LEM.

As quality of life improves, energy consumption per capita rises. LEM products help control this consumption, encourage renewable energy and provide continuous power supply.

Smart grids, microturbines,
wind and solar power

energy

Providing affordable and clean energy is critical for a sustainable future. At LEM we are addressing this challenge by developing sensors that meet the most demanding standards of accuracy and safety, while adapting to higher power densities in battery and charging systems. LEM is also engineering a range of compact semiconductor-based sensing solutions.

Trains, trams, buses, conventional cars, green cars and elevators

motion

The world's demand for electrical motion is ever-increasing. LEM provides sensor solutions for mobility applications which can play a remote or intimate role in our everyday lives. We have a strong heritage of nearly 50 years as market leader with best-in-class products. Today LEM is at the forefront of new sensors, combining hardware and software with added functionalities and value, to create new business opportunities for our customers.

Financial results



Robust financial performance

Sales in the financial year 2018/19 totaled CHF 321.6 million, an increase of 6.8 % compared with the previous year, and up 5.8 % at constant exchange rates. In the context of the global economic slow-down, this was a more than satisfactory performance. 61 % of our top-line growth came from Automotive customers, driven by the transition to green cars.

We benefit from a good geographic spread of business. China leads the way with 33 % of total sales (33 % in 2017/18), Europe 33 % (34 %), North America 13 % (14 %) and the rest of the world 20 % (19 %). Sales growth was good in China (+8.0 %), steady in Europe (+5.8 %), but flat in North America (+0.7 %) and strong in the rest of the world (+10.8 %).

In the financial year 2018/19, orders were flat overall at CHF 320.5 million, reflecting the headwinds for the Industry segment and conventional cars, while green car demand was buoyant. The full year book-to-bill ratio reached 1.0, down from 1.06.

Gross profit rose by 5.5 % to CHF 146.5 million and the gross margin reached 45.6 %. This is 50 basis points lower than in the prior year. We continued to shift production to cost-effective locations, and executed various efficiency programs, particularly along our supply chain. These improvements were offset by a non-recurring impairment loss of CHF 2.7 million on underutilized industry machinery, plus a one-off provision of CHF 1.8 million for unused stock related to a discontinued automobile product.

We remain vigilant with overheads. Sales, general and administration spending (SG&A) was kept essentially flat at CHF 54.4 million, and declined to 16.9 % of sales from 18.2 % last year.

We continued to increase investment in research and development (R&D), up by 29.7 % to CHF 27.6 million, or 8.6 % of sales, up from 7.1 %. This long-term investment will ensure LEM has the right new technologies and applications for customers, as their businesses are increasingly driven by renewable energy, mobility, automation and digitization.

EBIT for the year 2018/19 increased to CHF 64.8 million from CHF 63.1 million, notwithstanding the increased R&D spend. Our EBIT margin was slightly down at 20.1 %, compared with 21.0 %, but remains robust in the long-term.

Net financial income shows a deficit of CHF 2.5 million, due to foreign exchange losses on hedges and open balance sheet positions. The Group tax rate for this year was 15.9 % thanks to the confirmed status of our China operations as a High New Technology Enterprise.

We posted a net profit for the year of CHF 52.4 million, down from CHF 54.4 million last year. Last year's net profit included a one-off tax related benefit of CHF 3.4 million. Cash flow from operating activities was CHF 53.5 million (-1.1 %) and free cash flow was CHF 38.8 million (-0.6 %). This decrease is a consequence of increases in net working capital principally due to inventories.

Our balance sheet remains strong and essentially debt-free. As of 31 March 2019, total assets increased to CHF 1871 million. Shareholders' equity reached CHF 113.1 million, representing an equity ratio of 60.5 % (60.0 % as of 31 March 2018).

Key figures 2014/15 to 2018/19

in CHF millions

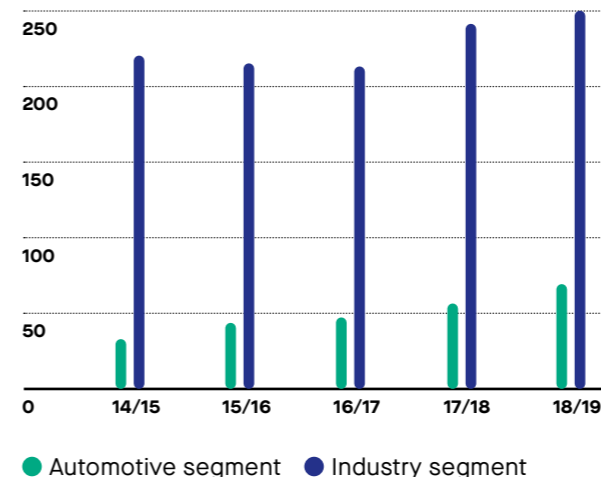
	2014/15	2015/16	2016/17	2017/18 ¹	2018/19
Orders received	251.0	256.5	271.2	319.7	320.5
Book-to-bill ratio	0.97	0.98	1.03	1.06	1.00
Sales	257.8	261.5	264.5	301.2	321.6
Gross margin	118.4	120.4	123.6	138.9	146.5
In % of sales	45.9 %	46.0 %	46.7 %	46.1 %	45.6 %
EBIT	54.2	52.9	55.8	63.1	64.8
In % of sales	21.0 %	20.2 %	21.1 %	21.0 %	20.1 %
Net profit for the year	43.1	43.5	44.6	54.4	52.4
EPS basic (CHF)	37.86	38.18	39.11	47.76	45.97
Dividend per share (CHF)	40.00	35.00	35.00	40.00	42.00 ²
Operating cash flow	50.2	45.6	52.8	54.1	53.5
Investing cash flow	-9.7	-6.6	-13.2	-15.1	-14.8
In CHF millions, %	31.3.2015	31.3.2016	31.3.2017	31.3.2018¹	31.3.2019
Net financial assets / (liabilities)	20.9	13.6	12.8	12.6	4.5
Shareholders' equity	91.9	85.9	90.5	111.6	113.1
Equity ratio (in % of assets)	65.0 %	61.3 %	60.7 %	60.0 %	60.5 %
Market capitalization	910.3	929.1	1'064.8	1'812.6	1'459.2
Employees (in FTEs)	1'274	1'388	1'453	1'527	1'477

¹ Restated financial statements

² Proposal of the Board of Directors to the Annual General Meeting of Shareholders on 27 June 2019.

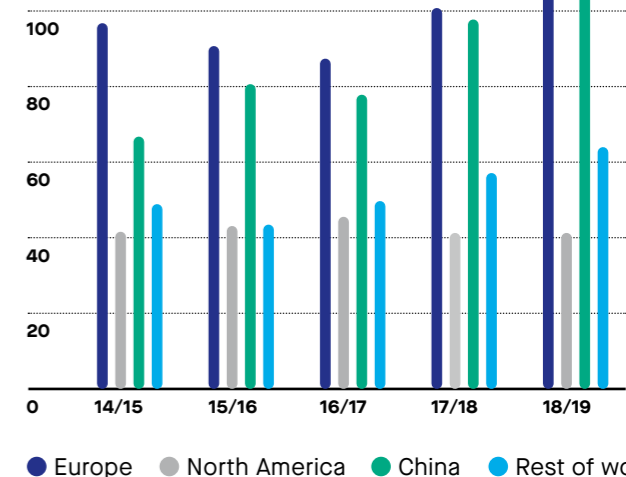
Sales per segment

in CHF millions



Regional sales breakdown

in CHF millions



6.8%

Sales growth

27.6m

R&D investments

8.6 % of sales

64.8m

EBIT

20.1 % of sales

Financial results

Restatement of accounts

We have restated the financial statements for the year 2017/18 as a wrong conversion rate was applied for the actuarial calculation of our Swiss pension plan obligation. This rate impacts the plan's service costs and also our balance sheet. The restatement has resulted in an increase of CHF 1.4 million to EBIT (revised to CHF 63.1 million) and an increase of CHF 1.1 million to net profit (revised to CHF 54.4 million) for the year 2017/18. These income adjustments, and those to the balance sheet, are reflected in this year's published Financial Report, and explained in note 3 to the consolidated financial statements.

Increased dividend

Based on the results for 2018/19 and the solid outlook, the Board of Directors proposes an increased dividend of CHF 42 per share, up from CHF 40 per share, payable on 4 July 2019. The proposal follows LEM's dividend policy of distributing significantly more than 50 % of its consolidated net profit to shareholders and corresponds to a payout ratio of 91.4 %.

Solid outlook

The fundamental prospects for LEM remain strong, driven by the mega trends of energy efficiency, mobility and automation. Thanks to our brand heritage and market leadership, top line growth in the Industry segment will be steady, while susceptible to global economic activity. The green cars business continues to offer the most growth potential, and will replace that of conventional cars. How-

ever, government policies remain an important volatile factor, while increasing competition in green cars will bring mounting price pressure. Geopolitical tensions or increasing trade barriers may pose a downward risk to global growth and our businesses.

We plan to further increase investment in R&D, leveraging new technologies for example in electric powertrains, smarter sensors, DC metering and charging systems. We continue to improve the efficiency of production, while also empowering our global sites with full capabilities in R&D, operations, sales and quality management. This will make our organization more agile, increase our speed of execution and reduce the time to market.

Taking all internal and external factors into account, we expect another solid financial performance for LEM in the coming year.

“The current sensor market is expected to grow at a CAGR of 8.43 % to reach USD 3.6 billion by 2024 from 2.4 billion in 2019.”

Report Linker, industry report, April 2019

Industry segment performance



Global industry market – accelerating change

Following a broad-based upswing in cyclical growth that lasted nearly two years, the global economic expansion decelerated in the second half of 2018. Activity softened amid an increase in trade tensions and tariff hikes between the United States and China, a decline in business confidence, a tightening of financial conditions and higher policy uncertainty across many economies. After peaking at close to 4 percent in 2017, global growth remained strong, at 3.8 percent in the first half of 2018, but dropped to 3.2 percent in the second half of the year. Conditions have eased in 2019 as the US Federal Reserve signaled a more accommodative monetary policy stance and markets became more optimistic about a US-China trade deal, but they remain slightly more restrictive than in the fall (Source: IMF).

Against this difficult global economic backdrop, the Industry segment delivered a steady performance. We continue to be market leader in our chosen business segments, with a share of over 60%.

We are adapting to significant and accelerating changes across markets, such as higher power densities, the electrification of mobility, digital disruption, smart grids and distributed energy resources.

LEM delivers steady performance

Sales in the Industry segment increased by 3.3% to CHF 250.2 million in the financial year 2018/19; at constant exchange rates the sales increase was 2.4%. Orders decreased by -4.1% to CHF 245.7 million, resulting in a full year book-to-bill ratio of 0.98. The economic environment differed across regions. Sales in China were down by -3.6%, mainly due to a softening in the solar business, but China remains our most important single country,

representing 29.2% of Industry sales. Sales in North America increased by 9.6%, thanks to our increased share with major players, while in Europe sales rose by 5.2% mainly due to the growth in renewables. Rest of the world sales increased by 7.3%, and India performed well. EBIT increased from CHF 52.4 million to CHF 54.9 million while the EBIT margin improved from 21.6% to 21.9% thanks to our focus on cost improvements, notably across the supply chain.

Drives and welding

Sales in the drives and welding business were flat at CHF 113.3 million, with strong sales performances in North America, Europe and the rest of the world offset by sluggish demand in China and Japan, which is expected to last through mid-2019. Automation and energy savings applications were the main growth drivers while there was low demand for consumer electronics and the semiconductor industry. We recorded strong interest in our new product family with integrated current sensors for small drives and robotics. Competition is active with new products and ASICs.

Renewables

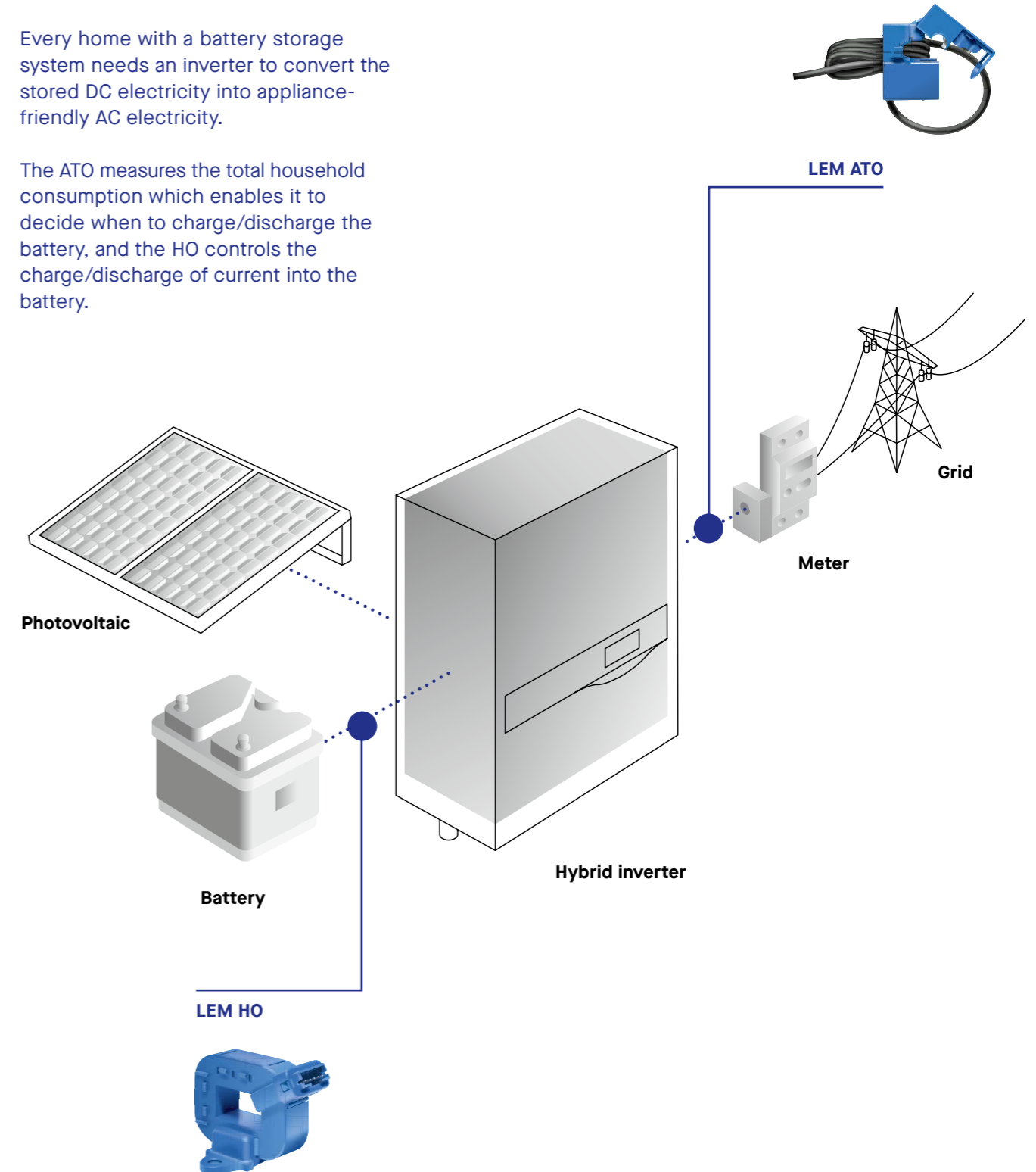
Sales in the renewables business grew by 3.2% to CHF 77.0 million. Solar equipment production continued to move from North America to Europe and China. Thus, the renewable energies and power supplies business is driven by the Chinese and European solar industry producing for the world market. China sales were hit substantially by the change in solar policy in May 2018 which was later reversed in January 2019. We performed well in Japan and gained market share in Europe and India. Wind activity was weak in most regions. We continue to build a pipeline of smart grid projects and won some designs with new products.

Hybrid solar inverter with battery storage inside

A hybrid inverter simultaneously manages inputs from both solar panels and a battery bank. It charges batteries with either solar panels or the electricity grid, depending on which is more economical or preferred.

Every home with a battery storage system needs an inverter to convert the stored DC electricity into appliance-friendly AC electricity.

The ATO measures the total household consumption which enables it to decide when to charge/discharge the battery, and the HO controls the charge/discharge of current into the battery.



Industry segment performance

Traction

We performed stronger than expected, and traction sales grew by 8% to CHF 48.6 million thanks to a global catch-up of infrastructure investments and some individual projects. We achieved strong sales with light rail and locomotive projects in India and China as well as energy metering and track-side maintenance projects in Europe. We continue to benefit from higher investments in Eastern Europe and Russia, while the US market remains very weak.

High precision

In the project-driven high-precision business, sales jumped significantly by 20.2% to CHF 11.3 million, with a particularly strong performance in China due to green cars test bench applications. Activity in the global medical market was stable, but the test and measurement market boomed in the US and Europe. Our new product line (IN 1000 and IN 2000) was well received by customers.

Moving into new markets

As market leader, we continue to invest in new businesses where we can leverage our strong heritage in industry applications.

Our smart grid business is progressing nicely, with a fully staffed product management team, customer outreach and first design wins. We are focusing on integrators and new Rogowski coils.

Our new DC meter project for charging green cars is well under way, working alongside key clients, with a fully-certified product planned for 2020.

Our recently launched GO series of integrated current sensors (chip-based sensors) has been very well accepted. These and other pipeline projects will enable us to penetrate new markets with low-power, high-volume applications such as chillers and air conditioners.

LEM organization – accelerating change

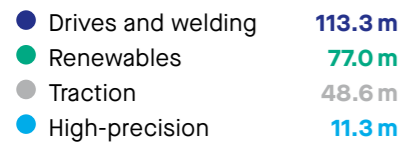
Our main challenge this year was to deal with a pan-industry component shortage. We closely cooperated with our supply chain and managed to meet our customers' varied demands. Operationally we reduced costs, particularly across the supply chain, and improved automation of production lines in China and Bulgaria. There is a drive to improve quality, with process optimization and skills development. Our R&D teams have been strengthened in Geneva, China, France and Bulgaria, with functional leadership for electronics, mechanical and software. Design cycles were historically 7–10 years, but in China these are now 2–3 years, so we need to improve our agility and speed to market.

Outlook

The Industry segment continues to be impacted by the different economic and trade tensions around the world. However, we benefit from a portfolio which is well balanced geographically and across applications. We foresee steady growth in all our businesses and will maintain our market leading share of over 60%. We continue to build our pipeline of innovations and to launch new products with new features.

Industry sales 2018/19

CHF 250.2 million



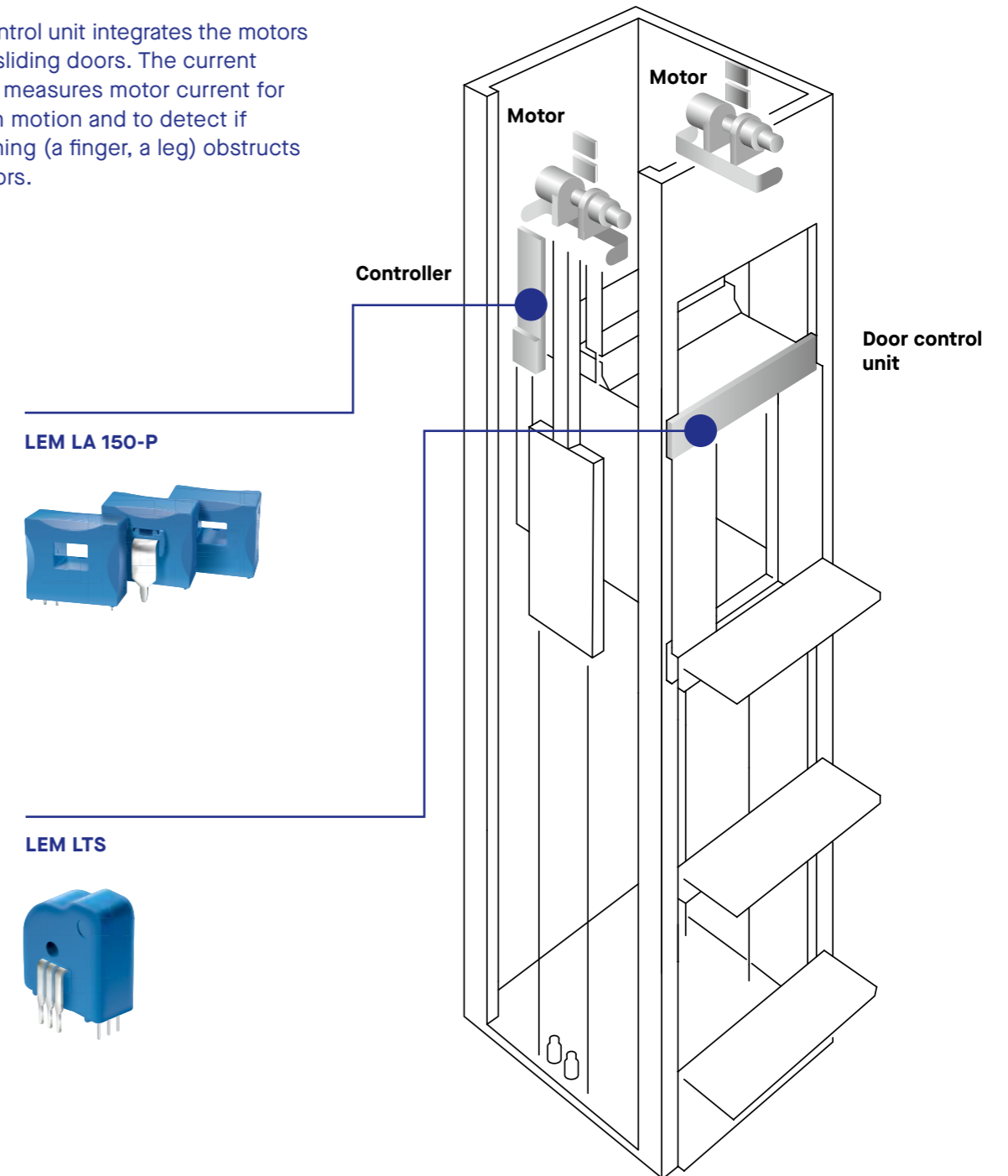
Elevator controller and sensors

Motor

The elevator control unit ensures the motor moves in the right direction and stops exactly at the right position. Current sensors ensure that the motor is powered with the correct current.

Doors

The control unit integrates the motors of the sliding doors. The current sensor measures motor current for smooth motion and to detect if something (a finger, a leg) obstructs the doors.



Automotive segment performance

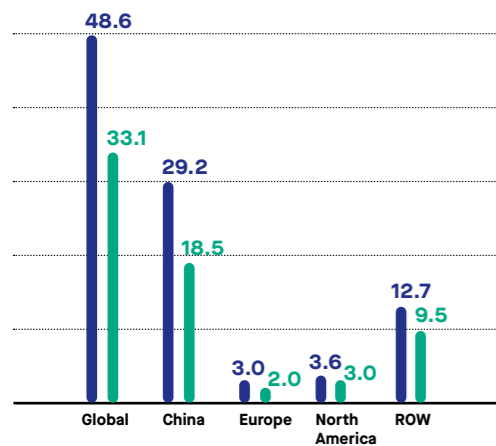


Global car market – accelerating change

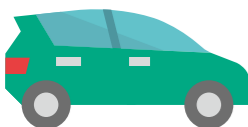
Global vehicle production in 2018 decreased by 6.3% to 91.5 million units, reflecting general economic uncertainty and the shift away from standard internal combustion engine (ICE) vehicles. Major markets to decline were China, South Korea, UK, Germany, and Canada; growth was recorded in the USA, Japan, Mexico and Brazil (source: OICA). Green cars again saw new record production levels last year due to government policies, new models and intensifying consumer appetite for alternative fueled vehicles.

LEM green car sales growth +46.7%

In CHF millions



● 2018/19
● 2017/18



China remained the unchallenged leader with 4.3% of all vehicles now electric; sales doubled to 1.2 million units and represented 56% of global EV sales. Europe grew by 34% to 409,000 units; USA is catching up with growth of 79% to 358,000; however, Japan dropped slightly to 53,000 units.

At the end of 2018 the global fleet of plug-ins was 5.4 million, counting light vehicles.

Medium and heavy commercial vehicles add 600,000 units. Forecast EV sales for 2019 are 3.2 million light vehicles and 140,000 heavy vehicles (source: EVvolumes.com).

LEM delivers strong performance

Sales in the Automotive segment reached CHF 71.4 million in the financial year 2018/19, a significant increase of 21.0%. At constant exchange rates, sales grew by 19.6%. For the second year in a row, sales in our green cars business exceeded sales in our conventional car business, and now accounts for 68.1% of Automotive revenues. We recorded the strongest growth in China (+46.8%), South Korea (+12.7%) and Japan (+38.2%). China is our largest market with 46.6% of Automotive sales, up from 38.4% last year, followed by the US (20.2%), South Korea (12.7%) and Japan (12.4%). EBIT reached CHF 9.9 million, down 8.2%, while the EBIT margin was 13.9%, compared with 18.3% one year ago. The margin decrease resulted from increased competitive pressure in the green cars market, new R&D resources, plus a one-off significant provision for unused stock related to a discontinued product. We offset part of these effects with volume growth and efficiency gains in production and administration.

Conventional cars continue to decline

Year-on-year sales in the conventional cars business decreased by 11.9% to CHF 22.8 million. The decline was caused by the ongoing technological shift away from the conventional 12 volt battery and the relatively weak US market with a reduction in passenger cars offset by increased demand for SUVs and trucks. A number of US manufacturers announced plant closures, although President Trump has asked them to rethink these.

Green cars drive our business

Sales in LEM's green cars business jumped by 46.7% to CHF 48.6 million. Our business

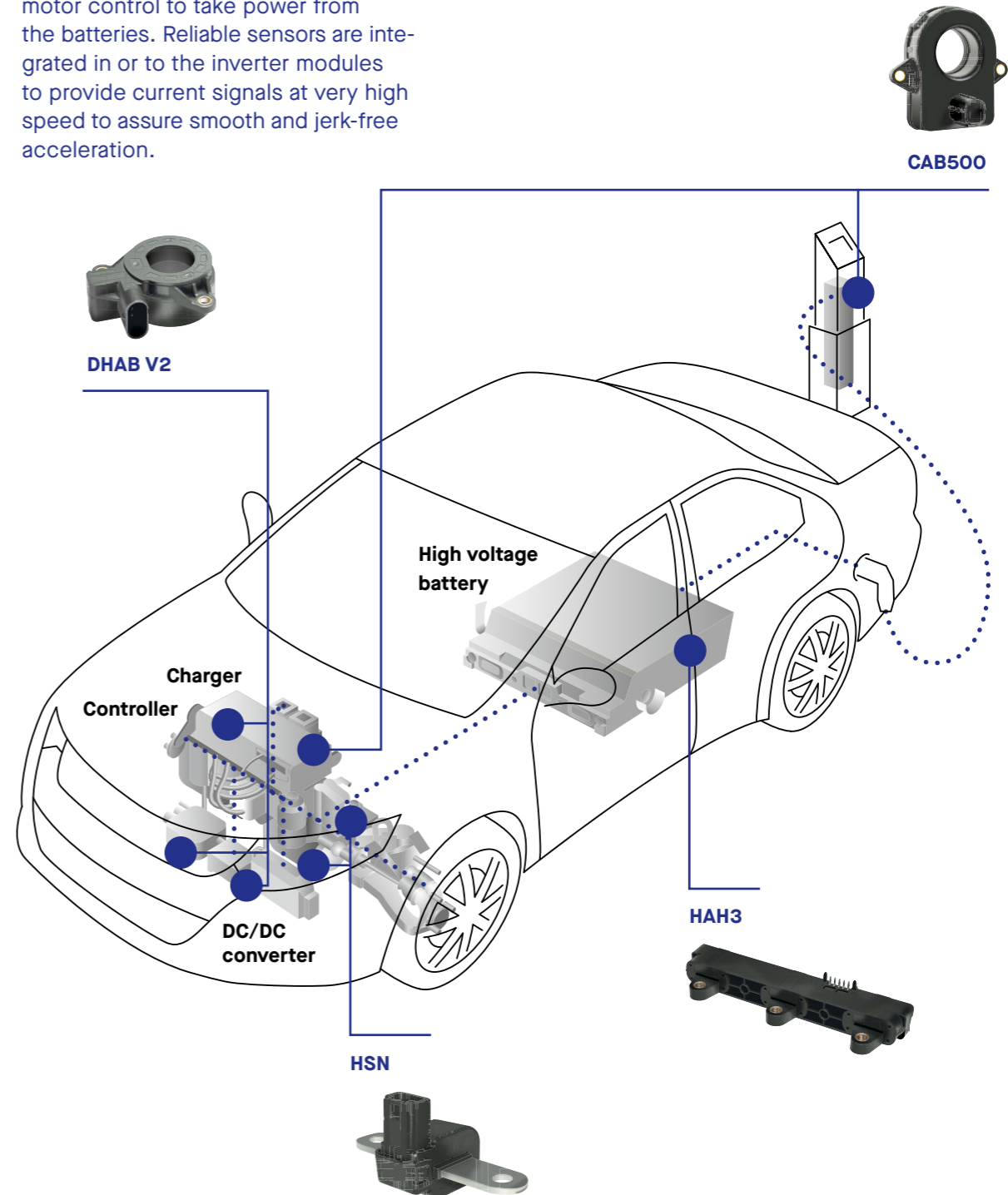
Hybrid electric vehicles / Electric vehicles

Battery management

High accuracy sensors provide all the necessary information to improve the efficiency of the charging and discharging process of the battery management system.

Motor control

The accelerator gives the signal to the motor control to take power from the batteries. Reliable sensors are integrated in or to the inverter modules to provide current signals at very high speed to assure smooth and jerk-free acceleration.



Automotive segment performance

is well positioned for both traditional hybrids and electric vehicles. We achieved strong growth across all important markets. Our business in Asia, especially in China, South Korea and Japan is growing fast. We benefit from our leading market position in China, where government policy sets an objective of 4.5 m green cars by 2025. We see increasing commitment from large European and US car manufacturers to launch new electric or hybrid-electric car platforms.

Expanding product portfolio

We continue to refresh our portfolio, offering customers a broad range of products adaptable to their needs. In many instances we provide value adding services to OEMs and Tier-1 suppliers with customer-specific versions of our products.

Battery management

Battery management for the 12V lead acid battery is our core product since 2003, although demand has declined due to changes in start-stop applications in standard internal combustion engine (ICE) vehicles. For start-stop vehicle architectures we are offering intelligent battery sensors combining a unique know-how on current sensing technologies together with our expertise acquired on lead acid battery technologies over the years.

For the management of high-voltage batteries (BMS HV), the battery disconnecting unit prevents any unexpected problem related to high-voltage/high-power powertrain to maintain the user in safe conditions, while monitoring the battery pack energy to have a precise estimation of the vehicle range in electrical mode. Thanks to our unique know-how on fluxgate technology, with the CAB series we offer sensors with best-in-class accuracy together with ASIL readiness to avoid a redundant sensor.

On hall technology, there is a wide offer of single range sensors for high compactness with integrated busbar and cost effective solutions. For very high accuracy, we have developed dual range sensors with a dedicated low range to drastically improve offset performances.

Motor control

Our sensors for power inverter applications provide flexibility to Tier 1 and original equipment manufacturers (OEMs) in their design, with solutions that can be implemented on various subsystems such as: gate driver boards, power modules, integrated busbar and standard busbar mounting.

Charging system

This new product range is offering dedicated technologies to support transfer energy subsystems from AC to DC and DC to DC with high and low voltages applications.

For leakage of current, we are developing residual current detection (RCD) targeting latest on-board charger generation increasing power density and decreasing costs with 800V architecture (boost only), vehicle to grid/load (V2G/V2L) and with bidirectional/uninsulated architecture. RCD sensors are able to detect 6 mA up to 300 mA DC leakage current to protect the system and users thanks to safety ASIL grade compliancy.

LEM organization – accelerating change

The green cars business is characterized by accelerated momentum and intensifying competition. We continued to ramp up production for new products, shift capacities from Europe to China, increase automation and meet higher cleanliness standards. We are focused on continuous improvement processes for quality, efficiency and utilization throughout the total value chain. Our R&D teams are being strengthened, while knowl-

edge transfer continues from Geneva to other locations. An important change is the grouping of all Automotive activities under a general manager in both China and Japan.

Outlook

We expect the green cars boom, mainly in Asia, to continue, and to more than offset our slowing conventional cars business. Increased consumer acceptance and lower prices, together with the emerging trends of autonomous driving, connectivity and dig-

itization, will likely further drive demand for electric vehicles. We see green car initiatives by European OEMs becoming a reality with new business to be awarded in 2019. We expect a continued decline in sales for 12V ICE battery management, offset by strong demand for high voltage products; motor controls will grow significantly in China and Japan; while charging systems with integrated current sensor products offer the strongest long-term growth potential.



“China will play a major role in the electrification of the automotive market, representing 50 % of the annual EV/PHEV car production by 2028.”

Source: Bloomberg NEF, 2019

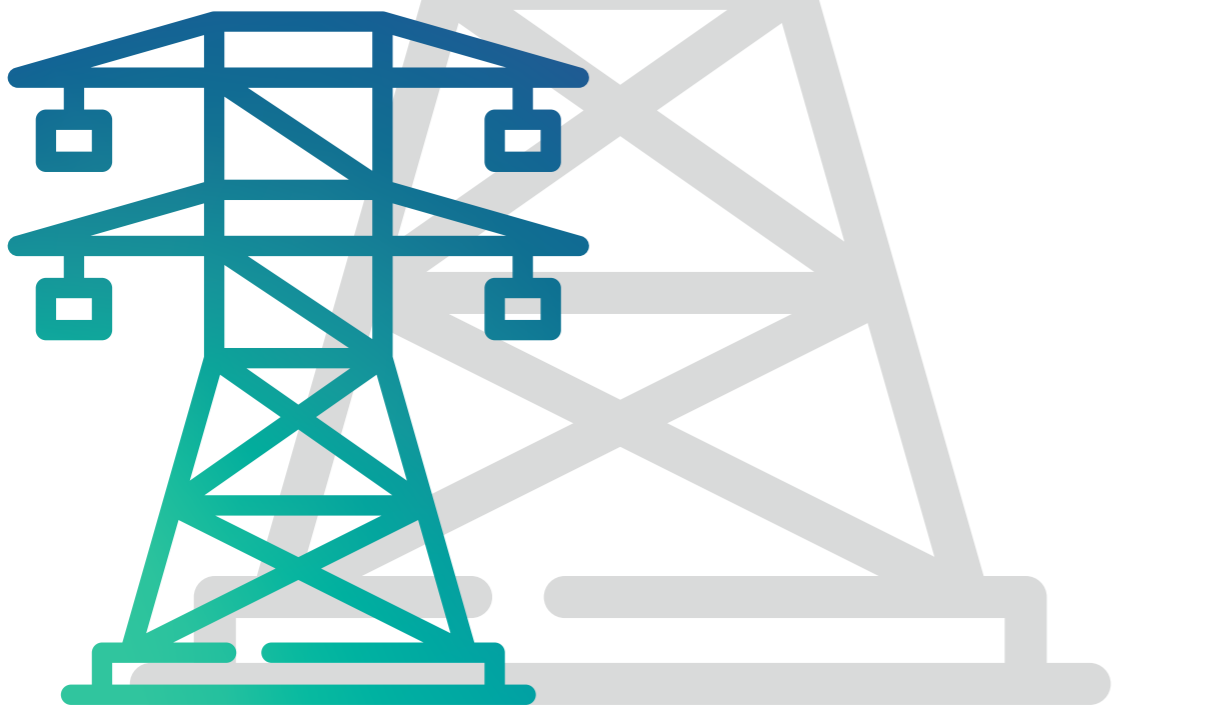
2040



2030



2020



“Due to a rising global population, the rising use of electronic devices, and urbanization, global electricity production will need to rise by about 50–60 % by 2040.”

Source: International Energy Agency, World Energy Outlook 2017

Enabling mega trends

The author is Marc Possa
Partner & CEO of VV Vermögensverwaltung AG
and convinced long-term investor in LEM

Mega trends are global economic, social and demographic shifts that have a major influence on our everyday lives. There seems to be a finite number of observable mega trends, the most important ones being environment and energy, mobility, communication and connectivity, urbanization, aging and lifestyle, and security and regulation. For trends to be classified as mega trends, they need to be strong and persistent and have a high impact on politics, society and the economy.

Keys to innovation success

For mega trends to evolve, enabling technologies have to exist. Thanks to technological progress in the fields of material science, automation and process technology, mega trends are initiated and enabled. Due to their complex nature, the basis for many kinds of industrial progress lies in the co-existence of a good education system and a well-functioning industrial eco-system. For these to exist, the political and regulatory framework is decisive. A compulsory school system, followed by the existence of a dual education setup embedded in world-class academia is the fruitful foundation for future innovation success. Paired with the need and mindset of wanting to innovate, a competitive advantage evolves, allowing progress, innovation and welfare to develop.

Sustainable economic development

The foundation of an innovation culture historically often lies in the lack of alternatives, provoking a disciplined and stringent focus. Especially in iteratively deducted trial-and-error approaches, a structured behavioral pattern is required. This then leads to market leadership, eventually generating the cash flows to finance research and development, which then again leads to innovation, societal welfare and sustainable economic development.

Enhancing the electrical eco-system

With the dynamic electrification of the world, especially in the field of renewable energies (wind, photovoltaic, hydro and energy storage), the precise measurement of electrical current becomes decisive in order to increase systems' intelligence and efficiency. LEM sensors exactly fulfill this vital role through precise measurement and subsequent calibration. Many machines, cars or trains would not work without those sensors. Enabling the capture and interpretation of electrical current data helps enhance the whole eco-system, improving efficiency and accuracy and therefore adding value to all involved parties. In a world where electrification and digitalization are gaining momentum, the understanding, measurement and assessment of electrical flows is very often mission critical.

Swiss leadership

For very good reasons Switzerland is home to many very successful world champions in global niches. We have transportation solutions (airplanes, trains and automobiles) that are safer and more efficient thanks to Swiss technologies and achievements. In terms of innovation, Switzerland remains among the leading countries. Thanks to the appropriate infrastructure and culture, highly innovating companies continuously manage to have high innovation rates, allowing them to systematically improve the offering and value added to customers. With rising technological complexities, this represents a true asset, guaranteeing continuous success, welfare and sustainable prosperity.



Trends, strategy and organization



Mega trends accelerating change

Our growth is driven by mega trends which give multiple opportunities to leverage LEM expertise and provide returns to shareholders. These trends drive demand for sensors, and have been described in the preceding chapter: renewable energy, energy efficiency, reliable energy, distributed energy, mobility, automation and digitization.

Our strong heritage is Industry applications where we are market leader and have significant growth potential, while our fastest growing sector is automotive applications. Far from being a mature market, the current sensing applications are undergoing significant mutations, driven by new applications and technologies.

“Increasing use of battery-powered applications and renewable energy forms, and growing market for Hall effect current sensors are among the key driving factors for the current sensor market growth.”

Report Linker, industry report, April 2019

An April 2019 report on the Current Sensor Market published by Report Linker states:

“The current sensor market is expected to grow at a CAGR of 8.34 % to reach USD 3.6 billion by 2024 from USD 2.4 billion in 2019. The increasing use of battery-powered applications and renewable energy forms, and growing market for Hall effect current sensors are among the key driving factors for the current sensor market growth. Moreover, the growth of automotive electronic

control systems and new vehicle technologies, and large-scale commercialization of Internet of Things and Industrial Internet of Things are among the other factors fueling the growth of the current sensor market. However, falling average selling prices of sensor components is affecting new market entrants and therefore is restraining the growth of the current sensor market.”

Technology trends

Ever higher power densities drive new current sensing technologies

The power density is the amount of power generated per unit volume of the motor. The more powerful the motor in a smaller envelope, the higher the power density. Increasing power density is therefore a critical factor to increase performance, as space constraints are present in virtually all industry and automotive applications.

Two technologies are enabling a step-change in levels of power density: Silicon Carbide (SiC) and Gallium Nitride (GaN) based sensors reduce switching losses and increase switching frequencies, making them very well-suited for industrial applications where performance is key.

The increased demand for small sensors, capable of handling high levels of power density, led to the emergence of integrated current sensors over the last decade. Integrated current sensors measure the primary current line directly through surface-mounted integrated circuit (IC) and became a technology of choice for industrial and automotive applications thanks to their ability to sense high currents while using a very compact footprint.

Digital is disrupting energy and mobility usages

Smart grid and autonomous driving are two major disruptions led by digital revolutions to bring smarter, greener and more efficient ecosystems. This is creating a lot of data, communication and the need for artificial intelligence. At LEM we are developing smarter sensors with data processing, safety with self-diagnostics, and added value with embedded software to achieve real time computation, which accelerates information transmission and decision making in the system.

The electrification of vehicles opens new applications to current sensors

By 2028, 50 % of annual car production will be using hybrid and electric powertrains. In addition, electric and hybrid vehicles require a higher number of current sensors than combustion powertrains, spurring an exponential growth for the demand of sensors: from about 100m of current phases measured in 2018, LEM estimates that the market will grow more than 4x, to reach about 450m in 2028.

LEM believes on-board chargers (OBC), DC meters and DC/DC converters will play a key role in energy distribution and management of hybrid and electric powertrains. OBCs provide the means to recharge the battery using an AC socket at home or from a charging station. DC/DC converter translates high voltage coming from the battery to a lower voltage which is then used for various on-board applications (A/C, electric power steering, etc.).

DC metering is becoming mandatory in the EU and the US markets, as regulators want customers to pay only for the power load of the battery of the vehicle, net of power line losses. Detecting current leakage is an important side application for DC metering, bringing a protection for customers in case of a malfunction of the charging station.

Ever higher power levels (up to 800V) place the battery system as the heart of the hybrid and electric powertrains. Accurate battery management systems that can measure the state of charge (SoC) and state of health (SoH), have become increasingly important to ensure the driver has access to reliable information on the driving range, and that the battery cells are well maintained to protect the battery life.

More stringent safety standards pave the way for autonomous driving

Automated driving functions are realized with interconnected systems using automated driving assistance systems (ADAS). Those systems are replacing part of a driver's usual decisions keeping him and others safe from hazards. To maintain this level of safety, ADAS are implementing functional safety defined by the ISO 26262 standard. We are introducing this standard to offer the strongest safety functions to our customers using LEM sensors in electrical vehicles powertrain systems such as battery, motor or power converters.

Smart grid, a new market for current sensing solutions

Our energy system is undergoing a radical transformation, as millions of electric vehicles hit the road and terawatts of renewable energy capacity are installed. These changes are essential to decarbonize our energy system but are creating significant challenges. First, wind and solar energy's intermittent nature force grid operators to provide flexibility to the system. Second, the rapid growth of distributed energy resources (DER) is decentral-

Smart grid and autonomous driving are two major disruptions led by digital revolutions to bring smarter, greener and more efficient ecosystems.

Trends, strategy and organization

izing the distribution network, increasing the complexity of its operation. A smarter grid is thus needed to reliably integrate intermittent renewable energies and DERs.

LEM provides sensors that measure electrical parameters along the network, allowing grid operators to monitor, control and automate the grid operation. LEM offers best-in-class solutions for the ever-increasing demands of utilities and equipment manufacturers.

Strategy

The focus of our strategy is on three priorities, which are reviewed annually by the Board of Directors. This strategy translates into clearly defined deliverables whose key performance indicators are continuously monitored.

Strengthen our technology leadership

We are committed to invest 8 % to 10 % of our sales in R&D to provide our customers with innovative products and solutions using proven and cutting-edge technologies.

We see the emergence of new technical platforms (e.g. EV powertrains) driving the increasing miniaturization of components and fueling the adoption of integrated current sensors.

Additionally, we are expanding our capabilities in embedded software development and field programmable gate array (FPGA) to develop the sensors of the future. They will be smarter and include functionalities that expand beyond pure current measurement towards current transmission (e.g. smart grid) and digital information.

Quality: key to customer satisfaction

We strive to bring the quality mindset to the next level across all production sites and all functions. Through the deployment of a preventive recurrence strategy on product returns, we aim for a single-digit Okm ppm target. To reach this objective, LEM drives a number of initiatives, including the deployment of an Integrated Product Development roadmap, improvements of the change management process in development and serial production and the optimization of the quality management system.

Drive operational excellence

We have been strengthening our operations by setting up a global integrated purchasing

organization, with category managers established close to key supplier markets in Asia and Europe. The supplier management processes (selection, qualification and development) are continuously improved to bring the LEM quality standards to the objectives set above.

We are further progressing on the digitalization of the production lines, with a full retrofit of the manufacturing assets to enable automatic data collection and treatment. An additional step towards the automation of our inbound supply chain activities has been completed with the introduction of a new production planning module, which will enable us to increase our production capacity and increase inventory turnover.

Accelerating the organization

To deliver our strategy we can leverage our strengths of heritage, market leadership, technical knowledge, a broad portfolio and closeness to our customers.

However, our industry is changing fast and being shaped by several technology breakthroughs. So is LEM: we are making the organization more agile to ensure we capture and manage global growth to 2025.

Talent and capability development

LEM is made of the expertise, talent and leadership of the 1,500 people working relentlessly to bring customers the best solutions. We are investing resources in talent development programs and coaching sessions to help talents grow and shape the future LEM.

Collaborative organization

Our organization is evolving towards a decentralized model where the headquarters are responsible for strategy, setting standards, innovation and coordination.

We are committed to invest 8 % to 10 % of our sales in R&D to provide our customers with innovative products and solutions using proven and cutting-edge technologies.

Leadership and empowerment

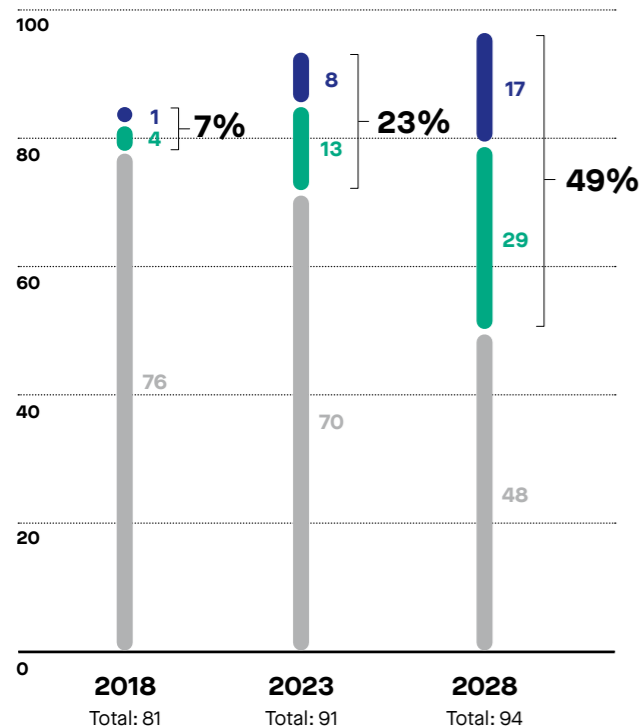
Decision making will become increasingly decentralized as capabilities are being deployed at each site in R&D, operations, sales and quality. With these changes, LEM is increasing speed and agility while reducing time-to-market.

Strategic communications and brand awareness

LEM has a strong heritage and reputation. The new brand identity revealed with this Annual Review is the starting point of a refreshed LEM, proud of its legacy, focused on delivering the best to our customers today and positive about the future. A company engaged with all its stakeholders, playing its part in shaping more sustainable practices across society – life, energy, motion.

New car sales – propulsion share

units in millions



- Electric vehicles
- Hybrid vehicles
- Internal combustion engines

Source: IHS Markit, 2017



Increased investment for future growth

In 2018/19 we continued to increase our investment in R&D to assure long-term growth. Four main trends drive our investments: the increase in electromobility especially in Asia; measurement of energy flows in smart grids; requests from Automotive customers for functional safety through third-party certification; and demand for tailored solutions in high volume applications.

Our investments are leading us from a traditional, electromagnetic sensors company into a diversified business of various integration levels. Unlike a pure player, our R&D team needs a diversified skillset to deliver the best product. It is to our advantage that we produce for customers in the industry and automotive segments, which allows us to leverage synergies to produce larger systems, modules and semiconductors.

Development across sites, teams and segments

We increased our internal R&D team by more than 16 % and hired a total of 21 engineers. We also used contract R&D resources to support projects and as a result, R&D investments increased from CHF 21.3 million in 2017/18 to CHF 27.6 million in 2018/19.

In Lyon we specialize in smart grid, traction and DC meters; this year we completed the embedded software and test teams with experienced engineers. In Geneva we focus on products going into drives, renewables, high precision and semiconductors, and during the year we formed a semiconductors team to focus on integrated current sensors including design, supply chain and testing.

R&D teams in both Geneva and Lyon focus on new technologies, such as embedded software and testing, predevelopment of technologies and innovative applications of

our products. Therefore, we continue to have a dedicated innovation team on both sites, which is working with universities and technical institutions and has been increased by two engineers in Geneva.

In Japan we set up a new R&D team for Automotive applications, while in Beijing and Sofia we strengthened the local management teams and our aim is to further expand those teams in 2019/20. In the Automotive segment our goal was to give the China team more responsibility for its local market to enhance closeness to customers.

Technical focus and product launches

We are running product projects in the areas of battery management systems, integrated current sensors for renewable energy applications, drives and traction. Our progress in battery management systems was awarded with a delivery order by a major truck manufacturer. We have made significant investments in semiconductor(-based) products, such as ASICS and HMSR which is an integrated current sensor. We also increased our knowledge on semiconductor packaging, supply chain and testing. In the area of smart grid, we are working on products going beyond pure sensors, such as our digital integrator product, which works with our Rogowski coils. We shall also be launching a new DC meter for Electric Vehicle Fast Charging stations, which is a good example of our progress in embedded software. Our efforts were recognized by the granting of 19 utility and 24 design patents.

Our significant investments in R&D over recent years have begun to bear fruit. In 2018/19 we launched six products in Industry and two in Automotive.

Product launches 2018/19

Products	Segment	Application
LXSR	Industry	Solar
LDSR	Industry	Residual current
IN 1000-S	Industry	High precision
HO PW series	Industry	Drives, UPS,
HO SW series	Industry	Drives, UPS, Welding supply
HO NPW series	Industry	Drives, UPS
CAB 500 series	Automotive	Battery management
HAH3 DR S07	Automotive	Inverter applications

Outlook

In 2019/20 we will continue to increase investments in our R&D capabilities. In Automotive we will complete the team in Japan to target new customers, and in China we will set up an innovation team. In summer 2019 we will launch the HBCT and CAB 500 SF for battery management. We will also see growth in the development of ASICs and semiconductor-based integrated current sensor products. A high number of product launches will be for smart grid, such as the DC meter, outdoor Rogowski coils and integrators.



LXSR

Closed loop multi-range current sensors for motor drives, power supplies and solar inverters. Galvanic separation between primary and secondary circuit. Very low offset drift, unipolar supply voltage and compact design.



LDSR series

Proprietary ASIC for closed-loop Hall effect technology. Measures leakage current of up to 2 KHz frequency. Alternative to expensive fluxgate solutions. Used in solar inverters on low power 1 and 3 phases.



CAB 500 series

Now rated from -500A up to +500A, fluxgate CAB 500 current sensors combine industry-leading accuracy with ultra-low offset and high-speed CAN output with programmable bus.



HAH3 DR S07

State-of-the-art LEM Hall ASIC design, co-developed with Infineon. Current range per phase up to +/-1200A. High precision and low offset, no side effects between phase. Automotive qualified. Several busbar and bracket versions.

Board of Directors



François Gabella
Member of the Board of Directors

Ilan Cohen
Member of the Board of Directors,
Member of the Strategy Committee

Werner C. Weber
Member of the Board of Directors

Andreas Hürlimann
Chairman of the Board of Directors,
Chairman of the Strategy Committee,
Member of the Nomination and
Compensation Committee

Ueli Wampfler
Member of the Board of Directors,
Chairman of the Audit and Risk
Committee

Ulrich J. Looser
Member of the Board of Directors,
Chairman of the Nomination and
Compensation Committee,
Member of the Audit and Risk Committee

Talent and values



We are developing and recruiting the best global talent with new competencies to deliver the growth potential of the company. LEM offers people a significant purpose and opportunity to make an impact on society, working at the forefront of mega trends such as renewable energy, mobility and sustainability. We are a high quality global employer, human-sized with a collaborative culture. As market leader in several applications of electrical measurement, our employees enjoy intellectual challenges, diverse pathways and global career opportunities.

New talent

We are continually looking for new talent who wish to make a difference and have a concrete impact on society. We offer a multicultural, human-focused working environment allowing self-fulfillment in a growing and challenging context. We are focused on hiring core competencies in new markets such as smart grid, semiconductors and embedded software as well as in the fastest growing area of e-mobility. In addition to technical competences, new recruits should demonstrate qualities such as leadership, entrepreneurship, empowerment, accountability, continuous improvement mindset, innovation and ambition.

Development of competencies

A committed workforce is essential for LEM's lasting success. To this end, we support our employees to attend regular job-specific training and develop their personal skills. We invest 1.5 % (unchanged) of total group salary costs for internal courses and participation in external training. A crucial element is our internal talent inventory to define the development wishes of our employees and increase internal succession bench strength. We are focused on developing internal talents through job rotation, global projects, international mobility and promotion. Technical competencies for

new products and applications and leadership development were the primary focus. In 2018/19 we continued with the specific leadership development programs in Bulgaria and China. Leadership development programs in Switzerland focused on change management and delegating responsibilities. These efforts were complemented by a specific increase of technical competencies such as key account management and Six Sigma.

Our annual evaluation shows that job content, work climate/team and work-life balance are the most important drivers of employee engagement. These drivers remained stable over the past years.

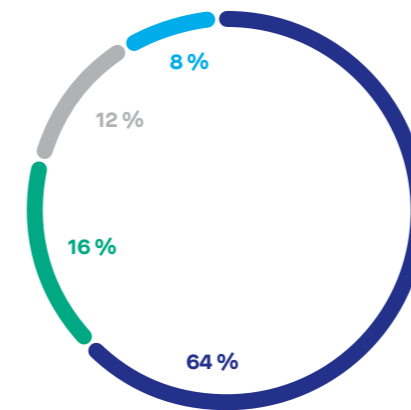
Equal opportunities

LEM provides equal opportunity to all qualified individuals. The share of female employees is 54 % in the overall workforce. However, given the historically high share of engineering positions in product development, sales & marketing and management, the share of female employees in the non-production related activities is 34 %. We actively seek female candidates in order to increase their share in the higher qualification positions, and there has been significant progress in markets such as China where many engineering graduates are women.

We continue to enhance health and safety at the workplace. The most important measures include systematic health and safety training for newcomers, employee wellbeing programs for the prevention of excessive stress at the workplace, annual evacuation trainings and signage in all areas. All sites have a clear evacuation plan in place. We perform regular internal and external audits to analyze the effectiveness of the measures and the development of improvements.

Workforce by activity

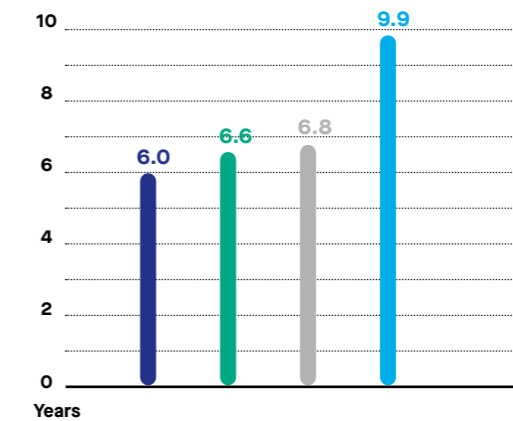
1'477 total employees



- Operations
- Admin & Logistics
- R&D
- Sales & Marketing

Average length of service

1'385 permanent employees



- Operations
- Admin & Logistics
- R&D
- Sales & Marketing

Employee analysis

	31.3.2019	31.3.2018
FTE		
Permanent employees	1'385	1'382
Temporary employees	48	104
Trainees	44	42
Total	1'477	1'527
Women in overall workforce	54 %	53 %
Women in non-production related activities	34 %	33 %
Women in management positions	24 %	22 %

Strong engagement

Every two years we conduct an external employee engagement survey. The latest in 2018 (response rate of 85 %) showed significantly higher results than an external benchmark and also improved from the last survey in 2016. All engagement dimensions increased, in particular alignment with strategy, customer focus and strong employer brand perception. There is room for further improvement in terms of organizational effectiveness, and we are working on this (e.g. project supply chain, management development, focus on trust and accountability). Results were com-

municated internally with groups, activities and locations defined to execute specific action plans.

As a result of last year's employee survey, we improved internal communications, particularly when it comes to important, strategic decisions. In 2018/19 we held regular town hall meetings at all sites during executive management visits as well as a monthly leadership lunch with the CEO.

Motivation factors for employees

- 1 Job content
- 2 Work climate/team
- 3 Empowerment

Work climate/team

Employee rating



Frank Rehfeld
Chief Executive Officer



Andrea Borla
Chief Financial Officer



Rainer Bos
Senior Vice President Automotive



Talent and values



Our core values

The LEM team is made of the expertise, talent and leadership working relentlessly to bring customers the best solutions. Our core values are the beliefs we share – and the spirit and intent of everything we do.

We are customer driven

All our activities are driven by the desire to provide best quality service.

We operate with integrity

Our relationships with co-workers, customers, suppliers, partners and the investor community are based on openness and fairness.

We value teamwork

Teamwork is more than just working together, it is bringing out the best of everyone's strengths.

We commit

We set our goals high and take responsibility for all our actions.

We strive for excellence

No matter how good our products, services, process and results, we are dedicated to making them better.

We lead innovation

By thinking out of the box, we adapt to tomorrow's requirements.

Responsibility



We believe that sustainable and ethical practices create long-term value for all key stakeholders in society and assure the longevity of businesses. There is an increasing demand for such an approach, which is why LEM conducts its business within a value system based on various principles and standards.

LEM Code of Conduct

The LEM Code of Conduct (CoC) is our key document. It reflects the United Nations Global Compact, global environmental standards and our core values. It is a binding document for employees and business partners, such as suppliers and consultants, whose compliance we regularly audit. Every LEM employee receives e-learning training on the CoC, including instructions and case studies, and signs it.

United Nations Global Compact

Since 2006 we adhere to the Ten Principles of the United Nations Global Compact, which are driving global action to achieve the Sustainable Development Goals by 2030. These principles, which relate to human rights, labor, environment and anticorruption, are embedded in every aspect of LEM, from our strategy to our actions. As we do every year, in 2019 we provided an update on our

progress to the United Nations which is available on our website. In addition, we follow the best practice policies of the Universal Declaration of Human Rights and the UK Bribery Act.

Environmental standards

The trends to sustainable energy sources and electromobility are two of LEM's key growth drivers. Our accurate sensing solutions give our customers a competitive edge in energy management solutions. For example, LEM sensors' high accuracy directly impacts the battery pack size of an electric or hybrid-electric car, and hence improves car weight and energy consumption.

All our production sites are ISO 14001:2015 certified, an environmental certification which we renew regularly. Our production activities are compliant with REACH (European Regulation for Registration, Evaluation, Authorization and Restriction of Chemicals), RoHS (Restriction of Hazardous Substances) as well as conflict minerals reporting and obligations. LEM regularly publishes updates to its standards and reporting on our website. All LEM manufacturing sites apply waste sorting and treatment solutions. For each new product, we develop an environmental profile before launch, which includes recyclability rate and material saving compared to previous or equivalent models.

LEM Code of Conduct

Ethics Human rights Business practices

United Nations Global Compact

– UN Sustainable Development Goals

Environmental standards

- Preserving the environment
- Protecting human health
- Utilizing natural resources rationally



Contact

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Number of registered shareholders

	31.3.2019	31.3.2018
1-499	1'153	933
500-4'999	50	52
5'000-49'999	7	7
50'000 and more	4	4
Total	1'214	996

Shareholders by category

In %	31.3.2019	31.3.2018
Institutional shareholders	48.1	49.4
Private individuals	26.7	26.3
LEM employees, managers and board	6.5	6.4
Treasury shares	0.1	0.1
Nonregistered shares	18.6	17.8
Total	100.0	100.0

Share information

Symbol	LEHN
Listing	SIX Swiss Exchange
Nominal value	CHF 0.50
ISIN	CH0022427626
Swiss Security Number (Valor)	2 242 762

LEM share

In number of shares, CHF	2018/19	2017/18
Number of shares	1'140'000	1'140'000
Year high ¹	1'772	1'828
Year low ¹	920	915
Year-end ¹	1'280	1'590
Average daily trading volume (shares) ¹	878	828
Earnings per share	45.97	47.76 ³
Ordinary dividend per share ²	42	40
Market capitalization as per 31 March ¹ (in CHF millions)	1'459	1'813

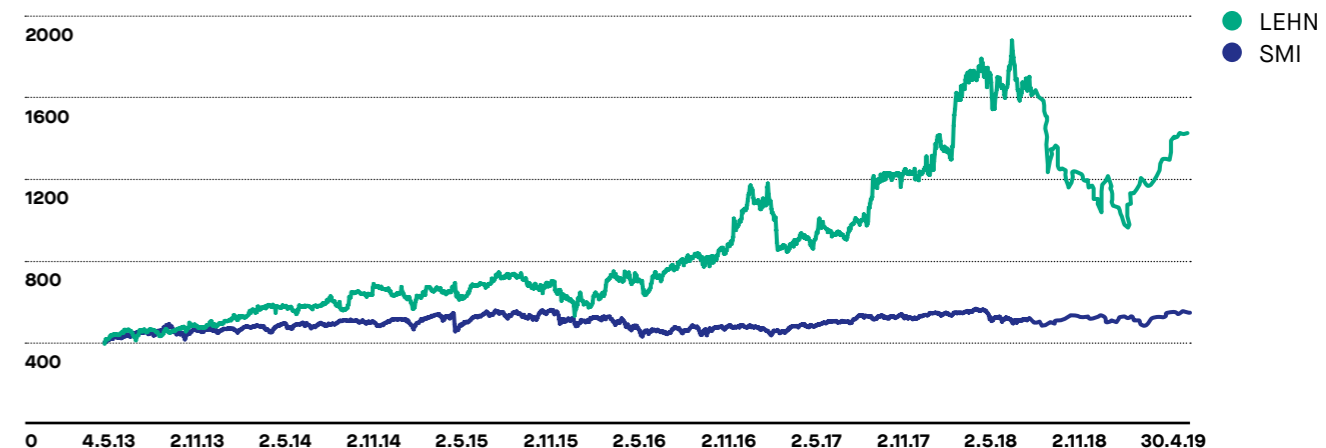
¹ Source: SIX

² Proposal of the Board of Directors to the Annual General Meeting of Shareholders for 2018/19

³ Restated

Share price development LEM HOLDING SA (LEHN) compared to SMI

in CHF



Source: www.six-group.com

Financial calendar 1 April 2019 to 31 March 2020

27 June 2019	Annual General Meeting for the financial year 2018/19 Université de Fribourg, bvd. de Pérolles
2 July 2019	Dividend ex-date
4 July 2019	Dividend payment date
30 July 2019	First-quarter results 2019/20
5 November 2019	Half-year results 2019/20
31 January 2020	Third-quarter results 2019/20
19 May 2020	Year-end results 2019/20
25 June 2020	Annual General Meeting for the financial year 2019/20
30 June 2020	Dividend ex-date
2 July 2020	Dividend payment date

Leading the world in electrical measurement, LEM engineers the best solutions for energy and mobility, ensuring that our customers' systems are optimized, reliable and safe.



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Concept and text
LEM, Fribourg
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SNK Identities AG, Zurich

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Getty Images

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Life Energy Motion

