

LEM

Life Energy Motion



Annual Review

19 | 20

life energy motion

Streams of steady, safe, uninterrupted electric flow keep us plugged in, on line, up and running. This would be not be possible without electric sensors. LEM products help encourage renewable energy and provide continuous power supply, to ensure the connectedness that improves our quality of life.

LEM develops sensors that meet the most demanding standards of accuracy and safety and engineers a range of compact semiconductor-based sensing solutions. A sustainable future depends on sensors for smart grids, microturbines, wind and solar power for affordable and clean energy.

Sensor solutions play a role in our everyday lives: in trains, trams, buses, conventional cars, green cars, elevators. With our strong heritage of nearly 50 years as market leaders, LEM is at the forefront of best-in-class and new sensors for mobility applications that provide us with safe, reliable motion.



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Welcome

As we write this introduction to our Annual Review in April 2020, the world is a very different place from even January. All of you will have been impacted professionally and personally by the pandemic of Covid-19 sweeping across the planet. We sincerely hope that you are adjusting to and coping with this extra-ordinary challenge. At LEM we are focusing on three priorities for our employees: staying safe and taking care of our families; keeping our everyday business as steady as possible; reassuring our customers and suppliers that we are reliable and responsive to their new demands.



Despite this difficult environment, it is important to remember the fundamental long-term prospects for LEM remain strong, driven by mega trends such as energy efficiency, mobility and automation. LEM benefits from the diversity of our business across sectors and regions, with recognized heritage and market leadership, a steady flow of orders, robust margins, a strong balance sheet and healthy cash flow.

Steady flow

The theme of this year's document is "steady flow". For LEM the power of "streams of steady, safe, uninterrupted electric flow" is core to its existence. It is what keeps the business plugged in, on line, up and running. Ensuring that our electrical sensors are in place and in demand. Not only is it essential to quality of life today, but also to the DNA of the LEM brand.

We continue to be a reliable partner for the industry and automotive sectors; leading experts who listen, understand and provide innovative solutions to their changing needs. Our customers can depend on LEM, no matter what economic and technological challenges they face. LEM has been a sector leader and partner for nearly 50 years. 2019-20 has been a year of disruptive forces for LEM – trade wars, an auto sector transforming towards software-backed electric vehicles, and then the Covid-19 pandemic. A steady flow of strengths enables LEM to overcome these obstacles and drives the organizational changes we are making to benefit from new opportunities.

Adapting the organization to capture growth

Far from being mature, the current sensor market is forecast to grow by about 8% CAGR. Products are undergoing significant mutations, driven by new applications and technologies.

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 innovation and coordinating all our global sites; these are being empowered with skills and decision making in R&D, operations, sales and quality control. During 2020 we announced a reorganization of certain operations in Geneva to reflect this new allocation of global roles. 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 development programs and coaching sessions to help talents grow and shape our future. In 2019 we launched a global program – our Culture Journey – that will help all our people significantly improve individual performance, team collaboration and thus results of the whole organization. Our goal is to further develop a High-Performance Culture.

R&D investments deliver new products

We continued to allocate substantial resources in R&D to assure long-term growth, with investments of CHF 28.0 million or 9.1% of sales for 2019/20. Our investments are split into near-, mid-, and long-term projects, such as developing building blocks for the next decade. This is leading us from a traditional, electromagnetic sensors company into a broadened business of various integration levels. Our R&D team provides 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. Our investment continues to bear fruit with another ten products launched this year.

Pleasing financial results

We are pleased to report another year of steady results which are particularly encouraging given the tough environment we have faced. Sales in the financial year 2019/20 totaled CHF 307.9 million, a decline of 4.2%, but down only 1.9% at constant exchange rates. EBIT decreased to CHF 58.3 million from CHF 64.8 million, but our underlying EBIT margin of 19.6% remained robust. We posted the company's best-ever net profit of CHF 60.7 million, although this was helped by a significant one-off positive tax impact.

Our balance sheet remains largely debt-free and we continue to generate healthy cash flow. For the year 2019/20, the Board of Directors proposes a slightly reduced dividend of CHF 40 per share, taking into consideration the company's financial strength and the difficult economic environment.

Strategy on track

Mega trends drive demand for sensors, give multiple opportunities to leverage LEM expertise and ensure

a sustainable long-term business for all our stakeholders. We are focused on strengthening our technology leadership, improving our quality systems and operational excellence, developing our talent capabilities and making the organization more agile. We will build a new production plant in Malaysia to further de-risk our supply chain, diversify our footprint and enhance our competences – this has been planned for some time and was announced in January 2020. In Geneva we are breaking ground on a new headquarters building appropriate for modern organizational roles and technologies.

Looking ahead, Covid-19 will undoubtedly impact our customers and our business in the coming year. Some factors remain out of our control, but the diversity of our global footprint across multiple sectors and regions should stand us in good stead. We can also take heart from how efficiently LEM's China operations got back to work.

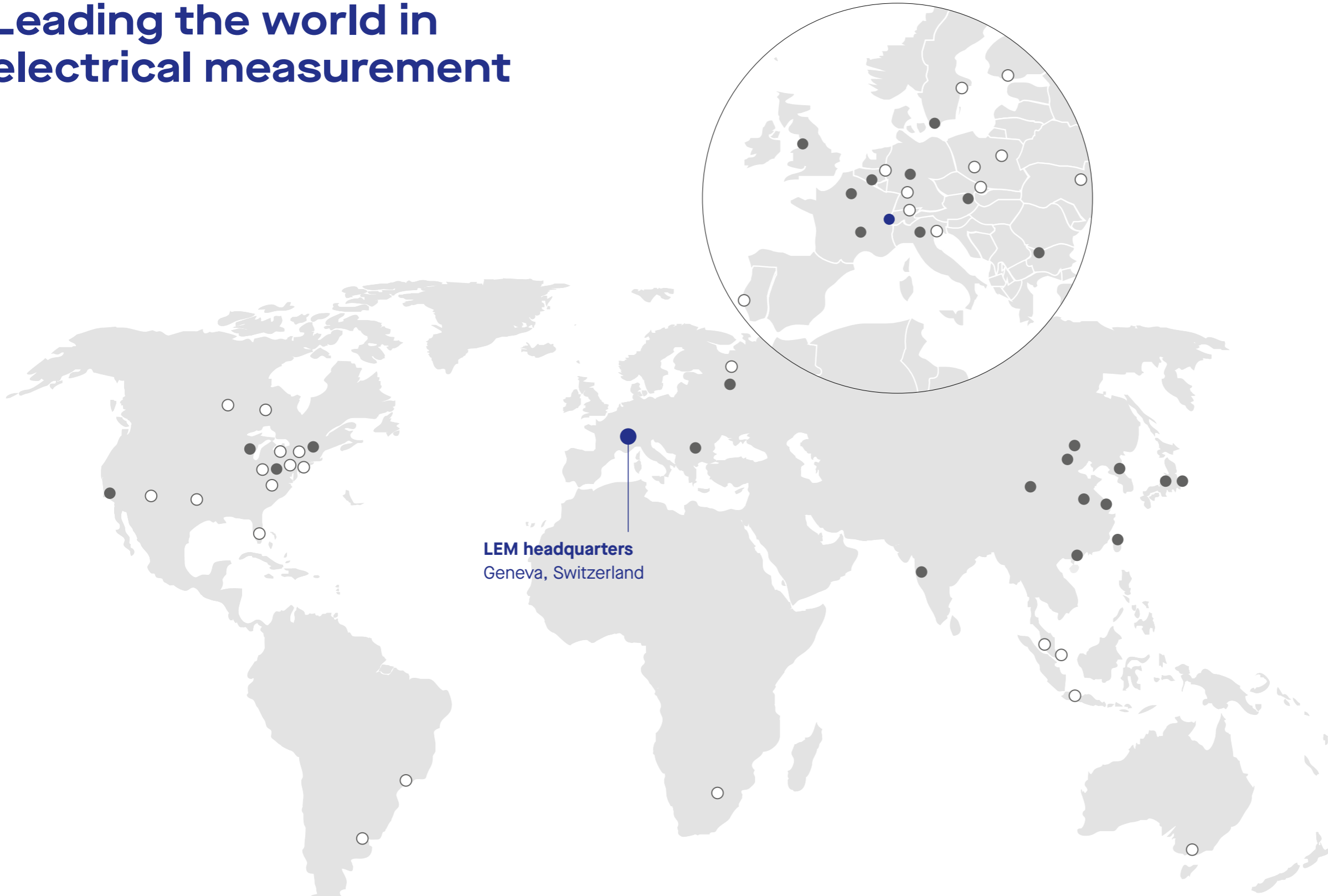
Thank you

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. In particular we are very proud of how our teams have responded to the unprecedented challenges of recent months, using their resilience and creativity to keep delivering products and projects on time. We would also like to extend our gratitude to our customers, suppliers and business partners for their continued trust, wishing you all good health and a successful navigation of the unprecedented challenges ahead. We hope you enjoy this Annual Review and will appreciate the reliability of LEM's "steady flow", 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



LEM headquarters
Geneva, Switzerland

Sales
R&D
Production
Customization

	Sales	R&D	Production	Customization
Europe				
Geneva, Switzerland	●	●	●	
Frankfurt, Germany	●			
Vienna, Austria	●			
Brussels, Belgium	●			
Randers, Denmark	●			
Paris, France	●			
Padova, Italy	●			
Skelmersdale, UK	●			
Lyon, France		●		
Sofia, Bulgaria	●	●	●	
China				
Beijing	●	●	●	
Shanghai	●			
Shenzhen	●			
Xian	●			
Hefei	●			
Taipei, Taiwan	●			
North America				
Milwaukee, Wisconsin	●			●
Columbus, Ohio	●			
Amherst, Massachusetts	●			
Los Angeles, LA	●			
Rest of world				
Pune, India	●			
Seoul, South Korea	●			
Tokyo, Japan			●	
Tver, Russia	●		●	●
Agents/Distributors				
	○			

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.

Financial results

Steady financial performance

Sales in the financial year 2019/20 totaled CHF 307.9 million, a decrease of 4.2% compared with the previous year. However, our reported top-line was impacted by the strength of the Swiss Franc and sales only dropped by 1.9% at constant exchange rates. This was a pleasing performance in the context of the global economic slow-down, the trade wars, and the impact of Covid-19 on our operations, particularly in China. This sales performance is testament to our customers' appreciation for our products, our engineering expertise and our reliability as a partner.

LEM's diversity of applications across multiple sectors of the global economy provides a steady flow of orders and a prudent spread of risk. We also benefit from a good geographic spread of business. China leads the way with 32% of total sales (33% in 2018/19), Europe 32% (33%), North America 12% (13%) and the rest of the world 24% (22%). Sales declined in China (-7.2%), in Europe (-4.1%), in North America (-13.5%), but increased notably in the rest of the world (+5.8%).

Our sales performance attests to appreciation for our products, our engineering expertise and our reliability as a partner.

In the financial year 2019/20, orders were slightly up at CHF 322.4 million compared with CHF 320.5 million, reflecting solid demand in the Industry segment (+3.5%) while the Automotive segment (-8.8%) was held back by the continued decline in conventional cars and the first impact from Covid-19. The full year book-to-bill ratio reached 1.05, up from 1.00.

Gross profit was down by 2.6% at CHF 142.7 million, while the gross margin improved again to 46.4%. This is 80 basis points better than in the prior year, thanks to various efficiency programs.

We remain vigilant with overheads, although on a reported basis total SG&A costs have risen by 3.9% to CHF 56.5 million, or 18.3% of sales compared with 16.9% last year. This increase reflects positive non-recurring items in 2018/19 (e.g. global pension adjustments) and negative non-recurring items this year (e.g. reorganization of employee functions in Geneva). Without these items, SG&A costs would have been slightly lower.

We continued to increase investment in research and development (R&D), up by 1.7% to CHF 28.0 million, or 9.1% of sales, up from 8.6%. Our investment continues to bear fruit with another ten products launched this year. This long-term strategy 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 2019/20 decreased to CHF 58.3 million from CHF 64.8 million, mirroring the decline in revenues and increased costs discussed above. Our reported EBIT margin was down at 18.9%, compared with 20.1%. On an underlying basis, excluding the one-off reorganization costs in Geneva, the EBIT margin was 19.6% in line with our guidance.

Key figures 2015/16 to 2019/20

in CHF millions

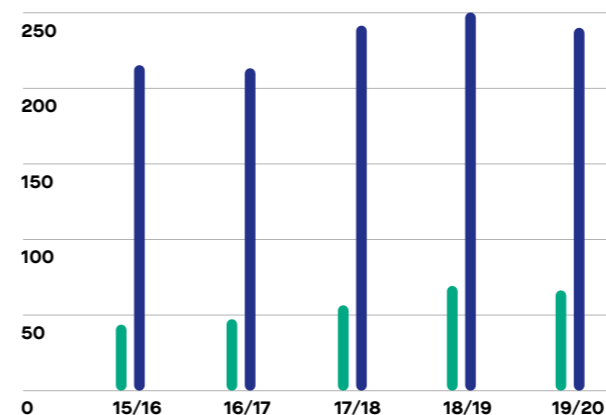
	2015/16	2016/17	2017/18 ¹	2018/19	2019/20
Orders received	256.5	271.2	319.7	320.5	322.4
Book-to-bill ratio	0.98	1.03	1.06	1.00	1.05
Sales	261.5	264.5	301.2	321.6	307.9
Gross margin	120.4	123.6	138.9	146.5	142.7
In % of sales	46.0%	46.7%	46.1%	45.6%	46.4%
EBIT	52.9	55.8	63.1	64.8	58.3
In % of sales	20.2%	21.1%	21.0%	20.1%	18.9%
Net profit for the year	43.5	44.6	54.4	52.4	60.7
EPS basic (CHF)	38.18	39.11	47.76	45.97	53.27
Dividend per share (CHF)	35.00	35.00	40.00	42.00	40.00 ²
Operating cash flow	45.6	52.8	54.1	53.5	73.6
Investing cash flow	-6.6	-13.2	-15.1	-14.8	-14.7
	31.3.2016	31.3.2017	31.3.2018¹	31.3.2019	31.3.2020
Net financial assets / (liabilities)	13.6	12.8	12.6	4.5	10.2
Shareholders' equity	85.9	90.5	111.6	113.1	117.4
Equity ratio (in % of assets)	61.3%	60.7%	60.0%	60.5%	51.0%
Market capitalization	929.1	1'064.8	1'812.6	1'459.2	1'210.7
Employees (in FTEs)	1'388	1'453	1'527	1'477	1'497

¹ Restated financial statements

² Proposal of the Board of Directors to the Annual General Meeting of Shareholders on 9 June 2020.

Sales per segment

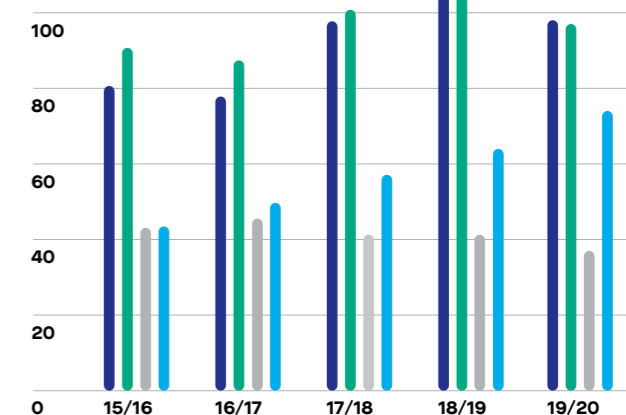
in CHF millions



● Automotive segment ● Industry segment

Regional sales breakdown

in CHF millions



● China ● Europe ● North America ● Rest of world

Net financial income shows a deficit of CHF 2.7 million, due to foreign exchange losses on hedges and open balance sheet positions. The Group tax expenses was a positive CHF 5.1 million, mainly due to a non-recurring positive tax impact of CHF 14.0 million from the sale of technical IP from LEM Intellectual Property SA based in Fribourg to LEM International SA based in Geneva and to LEM China.

We posted a record net profit for the year of CHF 60.7 million, up from CHF 52.4 million last year. The net profit margin thereby increased to 19.7% compared with 16.3%. Excluding the positive tax impact, net profit would have decreased to CHF 46.7 million, while the net profit margin would have declined to 15.2%.

Cash flow from operating activities was CHF 73.6 million (+37.5%) and free cash flow was CHF 58.9 million (+51.8%). This increase is a consequence of better net working capital management and lower taxes paid.

Our balance sheet remains strong and essentially debt-free. As of 31 March 2020, total assets increased to CHF 230.3 million. Shareholders' equity reached CHF 117.4 million, representing an equity ratio of 51.0% (60.5% as of 31 March 2019).

Adjusted dividend

Based on the results for 2019/20 and the uncertain outlook, the Board of Directors proposes a reduced dividend of CHF 40 per share (CHF 42 for 2018/19), payable on 18 June 2020. 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 75.1%, down from 91.4% last year.

Uncertain outlook

The dramatic impact of Covid-19 on the world economy has been well reported. The IMF published its bi-annual World Economic Outlook in April 2020; this forecast a baseline decline of -3% for global GDP in 2020, with only China and India showing any positive growth, and the aftershocks to be felt even into 2022. This baseline is predicated on most major economies moving out of lockdown by the end of Q2 2020, so actual GDP could be even worse if the pandemic persists.

LEM's business does benefit from geographic and sector diversity. Our operations in China (accounting for 32% of sales and 60% of production) were back up and running nearly at full capacity by the end of March 2020. However, a substantial portion of our China production is destined for export, and therefore is dependent on how quickly demand picks up from other economies which have been hit badly by the virus.

Given the inter-connectedness of customer demand and supply chains, and where LEM sits in this complex global web, we will not have any real visibility on the impact to our business until the second quarter of our financial year 2020/21.

Despite this difficult environment, it is important to remember the fundamental long-term prospects for LEM remain strong, driven by mega trends such as renewable energy, mobility and automation. LEM benefits from the underlying reliability of our business across a global footprint, with recognized heritage and market leadership, a steady flow of orders, robust margins, a strong balance sheet and healthy cash flow.

We are maintaining our key projects of investing in a new production plant in Malaysia and a new global headquarters in Geneva. We continue to invest in R&D at between 8-10% of sales, 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.

In summary, we will focus on those matters under our own control, ensuring the business is run as efficiently as possible. While confident in LEM's core qualities of engineering expertise and reliability, with a proven track record of nearly 50 years, we recognize the Covid-19 impact on the global economy and societies will leave certain drivers for our short-term prospects out of our hands.

LEM benefits from robust margins, a strong balance sheet and healthy cash flow.

46.4%

Gross margin

28.0 m

R&D investments
9.1% of sales

60.7 m

Net profit
19.7% of sales

Industry segment performance

A reliable steady partner, we continually reinforce strategic alignment with key players and trend setters in our industry, adapting to significant and accelerating changes across markets. The Industry segment delivered a steady performance against a difficult global economic backdrop. We maintain significant market share in our chosen business segments.

Global industry market – difficult conditions

In 2019 global economic growth was at its weakest since the financial crisis of 2007-9. Rising trade barriers and associated uncertainty weighed heavily on business sentiment and activity. Firms turned cautious on long-range spending, purchases of machinery and equipment decelerated, and industrial production was scaled back. Global trade slowed to a standstill (source: IMF).

The beginning of 2020 saw the first wave of economic impacts from the Covid-19 pandemic. The JPMorgan Global PMI dropped by a record 6.1 points in February and another 6.7 points in March, the worst decline since October 2001. Manufacturing output declined sharply due to slumping demand, personnel shortages, supply constraints and forced closures. March 2020 also witnessed the biggest drop in global manufacturing new orders for 11 years. The only bright spot was a rebound in China's PMI from 27.5 in February to 46.7 in March, although the sub-50 reading meant that output continued to decline (source: IHS Markit).

Against this difficult global economic backdrop, the Industry segment delivered a steady performance, indeed one could say better than expected given the circumstances. We maintain significant market share in our chosen business segments.

We are adapting to important 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 decreased by 3.9% to CHF 240.4 million in the financial year 2019/20; at constant exchange rates the sales decrease was 1.3%, so the negative FX impact was CHF 6.5 million due to the strong Swiss Franc. Orders improved by 3.5% to CHF 254.3 million, resulting in a full year book-to-bill ratio of 1.06. The economic environment differed across regions. Sales in China were up by 0.2%, mainly due to good performance in traction and the solar business, and China remains our most important single country, representing 30.4% of Industry sales. Sales in North America decreased by

8.9%, mainly due to differences between 2018-2019 in applications of trade tariffs on certain products while in Europe sales dropped by 5.6% principally because of a weak drives market. Rest of the world sales decreased by 3.8%, but sales in India performed well. EBIT decreased from CHF 54.9 million to CHF 50.4 million while the EBIT margin slightly dropped from 21.9% to 21.0% due to the sales drop.

Drives and welding

Sales in the drives and welding business dropped significantly by 12.2% to CHF 99.6 million, principally due to the delay of industry sector investment in China, and a decline in machine tools demand in Japan and Germany. Automation and energy savings applications are the main growth drivers for our sales. We continue to receive very positive feedback on the introduction of our new product family with integrated current sensors for small drives and robotics.

Renewables

Sales in the renewables business grew by 2.2% to CHF 78.7 million with customers from the Chinese and European solar industry producing for the world market. We grew strongly in China while sales in Europe and the US were stable. LEM is doing well in this very competitive market thanks to the launch of new products which address the changing requirements of solar inverters. Wind activity remained weak in most regions. We continue to build a pipeline of smart grid projects and won some designs with new products.

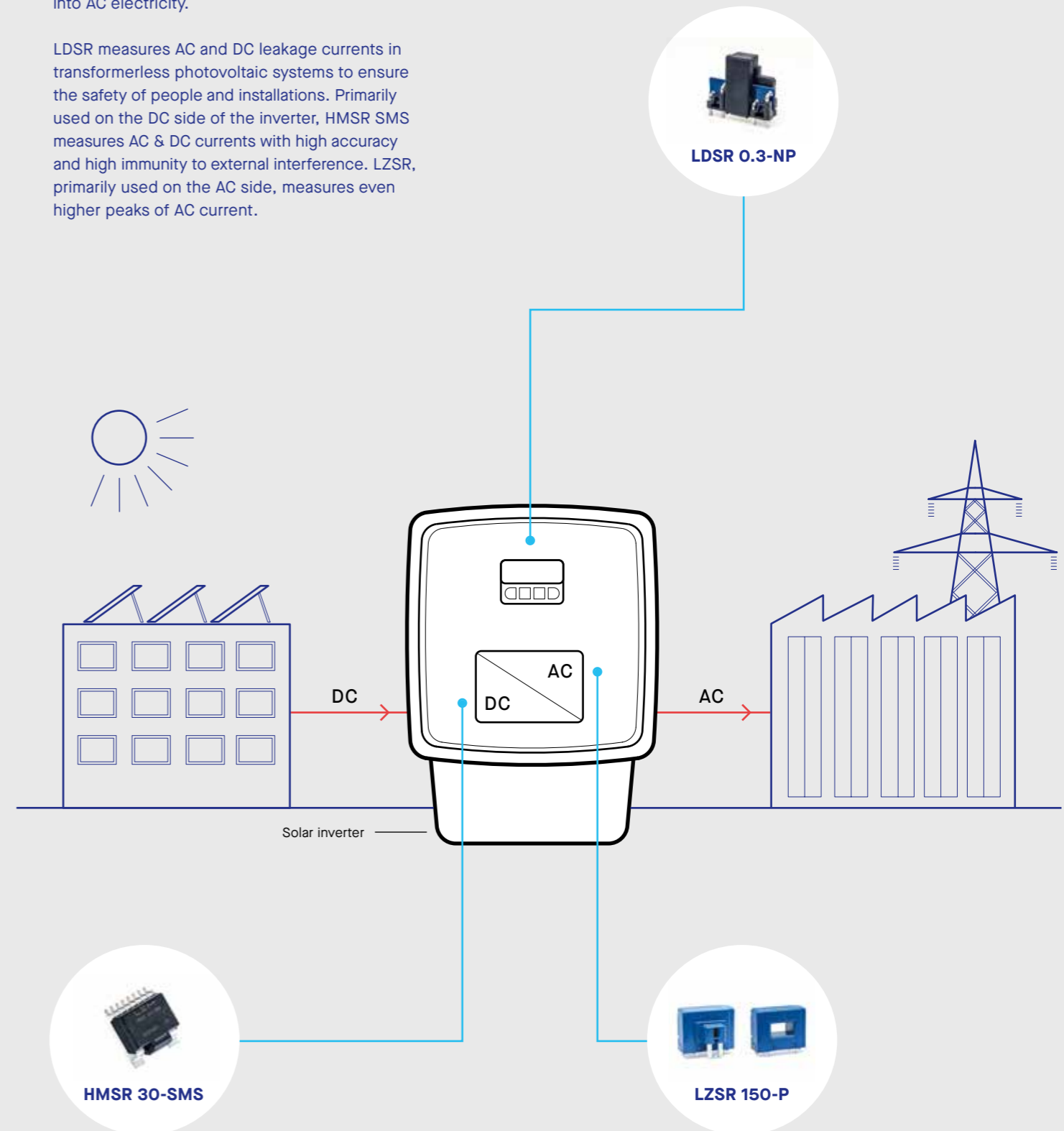
Traction

We enjoyed another successful year, with traction sales up by 5.1% to CHF 51.0 million thanks mainly to the continued infrastructure investments in India and Western Europe. We achieved strong sales with light rail and locomotive projects as well as energy metering and track-side maintenance projects. We also continue to benefit from higher investments in Eastern Europe and Russia, while the US market remains very weak.

Solar inverter

Every house with a photovoltaic system needs an inverter to convert the solar DC electricity into AC electricity.

LDSR measures AC and DC leakage currents in transformerless photovoltaic systems to ensure the safety of people and installations. Primarily used on the DC side of the inverter, HMSR SMS measures AC & DC currents with high accuracy and high immunity to external interference. LZSR, primarily used on the AC side, measures even higher peaks of AC current.



Industry segment performance

High precision

In the project-driven high-precision business, sales declined by 2.2% to CHF 11.1 million, although we had good growth in Japan and Western Europe due to green cars test bench applications. Our new product line (IN family) continues to be well received by customers thanks to its superior performance.

Moving into new markets

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

We have successfully trialed and are launching our new DC meter product for use in charging green cars. DCBM offers a high level of integrated functions, with a reliable and certified solution for billing electricity for fast charger users.

In the smart grid business, our low voltage market share growth will be supported by the launch of the new AI-P1A Rogowski integrator and ARU outdoor Rogowski sensor. We offer a broad variety of secondary cables and connectors. In 2020 we will enter the highly promising medium voltage switchgear business thanks to quick development initiatives.

LEM accelerated its efforts for integrated current sensors (ICS) by launching the HMSR, a miniature current sensor manufactured on semiconductor processes. Together with the GO series of chip-based sensors, the HMSR is enabling our customers to develop smaller and better systems. It also allows us to penetrate new low-power, high-volume applications such as chillers and air conditioners.

LEM organization – a reliable steady partner

At LEM we pride ourselves on being a reliable steady partner for our customers, across all phases of a project, wherever and whenever the customer needs our products and expertise.

We continuously strive to achieve and reinforce strategic alignment with key players and trend setters in our industry. This includes technical product roadmap synchronization, but also the implementation of advanced and most efficient logistic processes for seamless delivery around the world to guarantee best service levels and timely delivery at best cost.

An intense technical cooperation with our key customers from an early project phase onwards is essential to obtain best fit to market, to align our common design schedules and so to achieve a successful in-design and ultimately a fast introduction into the market.

Outlook

The Industry segment continues to be impacted by the different economic and trade tensions around the world. Covid-19 clearly disrupted supply chains in February and March, but we were proud to never miss a delivery to our customers during this difficult time. Although our order book is in good shape at the end of March, there will inevitably be some impact on demand and sales in the first half of the coming financial year. The latest IMF World Economic Outlook (April 2020) predicts global growth to fall from +2.9% in 2019 to -3.0% in 2020, although China and India are the only two major countries forecast to maintain positive GDP rates this year. LEM benefits from a portfolio which is well balanced geographically and across applications.

Industry sales 2019/20

CHF 240.4 million

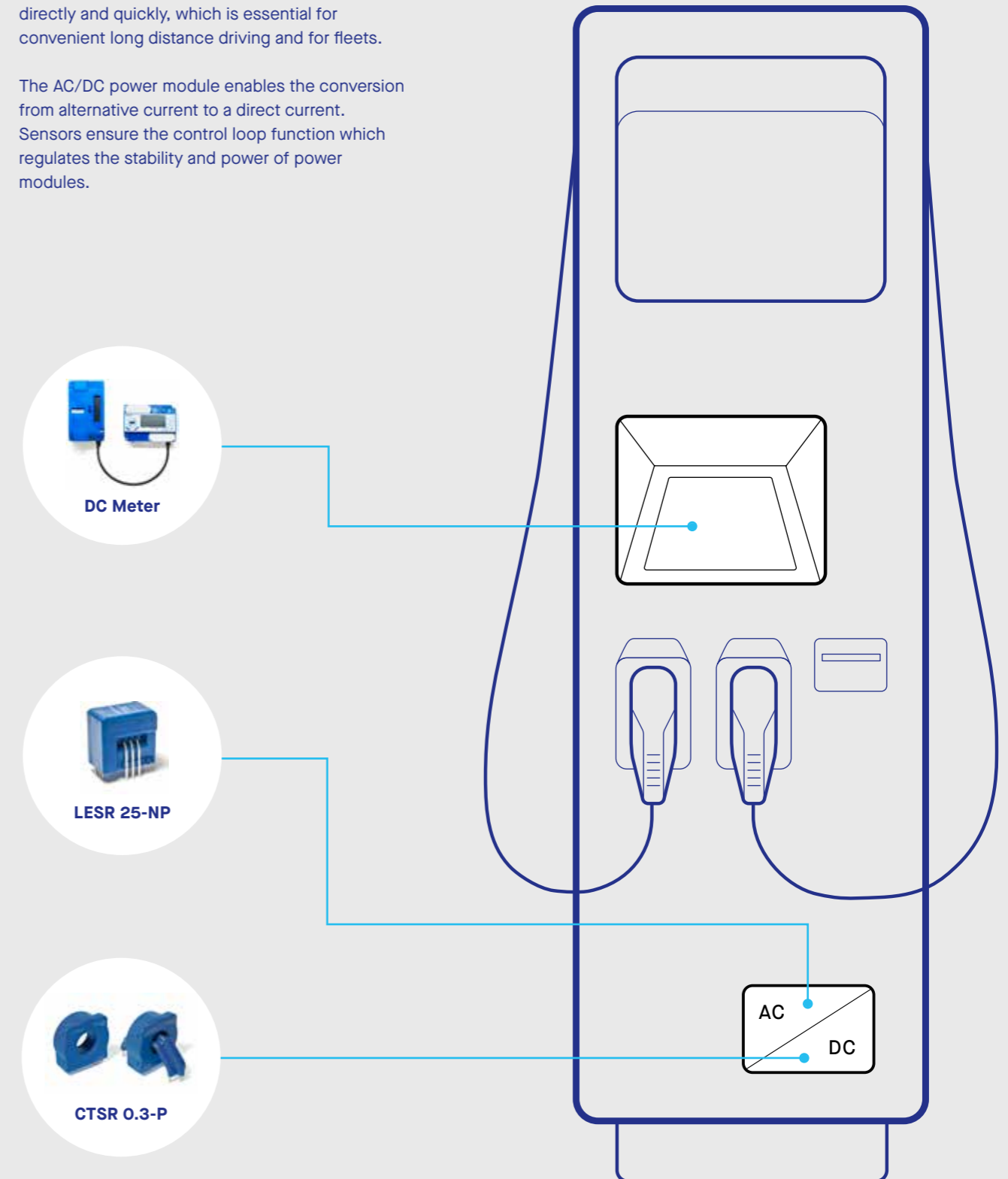


● Drives and welding	99.6 m
● Renewables	78.7 m
● Traction	51.0 m
● High precision	11.1 m

DC fast charging station for electric vehicles

DC fast chargers provide power to the car battery directly and quickly, which is essential for convenient long distance driving and for fleets.

The AC/DC power module enables the conversion from alternative current to a direct current. Sensors ensure the control loop function which regulates the stability and power of power modules.





Automotive segment performance

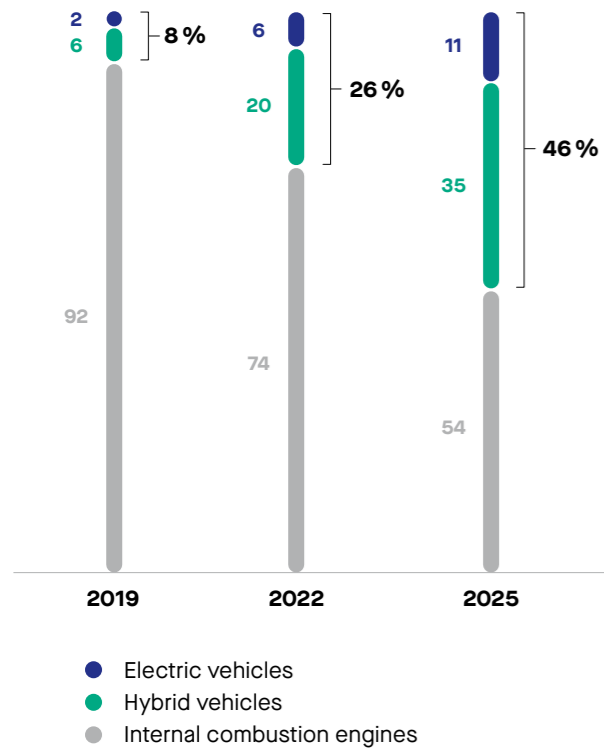
The 2019 global car market experienced economic uncertainty, further decline in combustion vehicles and a 20% growth in electric vehicles. LEM's strategic focus on electric and hybrid powertrains underpins our growth, with green cars now over 70% of revenues. Our expanding product portfolio offers a broad range in battery management, motor control and charging systems. As reliable partners striving for the highest levels of product quality and project execution, we aim to build tight relationships with key automotive players.

Automotive segment performance

Global car market – economic uncertainty

Global vehicle production in 2019 decreased by 5.7% to 88.7 million units, owing to continued global economic uncertainty and further contraction of internal combustion engine (ICE) vehicles. All major markets saw a decline, including China, USA, India and Germany (source: IHS). Green cars enjoyed a strong growth, particularly in Japan, China, Germany, South Korea and USA due to government policies, new models and intensifying consumer appetite for alternative fueled vehicles. Green cars now represent more than 8% of the global volumes produced annually.

New car production – propulsion share



Source: IHS Markit, 2019

Electric vehicles (EV), defined as plug-in hybrids and battery electric vehicles but excluding traditional hybrids, saw global deliveries reach 2.6 million, 20% higher than for 2018. 74% of sales were all-electric (BEV). All-electric vehicles have gained another 4% share in the mix since 2018, driven by growth in South Korea, USA and China.

China is by far the largest producer of EVs, with an annual output of 1.2 million units, or 46% of the global EV production. Volumes in China remained flat year-on-year as the central government reduced the end-consumer subsidies from 2018 levels. South Korea volumes tripled to 25,000 units; Europe grew by 49% to 601,000 units; followed by North America with a growth of 28% to 471,000. Japan production remained broadly unchanged at 122,000 units.

Resilient sales in a challenging environment

Sales in the Automotive segment reached CHF 67.6 million in the financial year 2019/20, a decrease of 5.3%. At constant exchange rates, sales contracted by 3.9%. The performance across markets has been contrasted with a strong growth in Korea (+41.7%), Japan (+30.9%) and in Europe (+29.9%) spurred by new businesses won in electric and hybrid platforms. Sales in China, LEM's largest market, contracted by 23.4% owing to the reduction of government subsidies for electric vehicles. Our performance in the US was negatively impacted by the phase out of conventional platforms. EBIT reached CHF 7.9 million, down 2.0 million, while the EBIT margin was 11.7%, compared with 13.9% one year ago. The margin decrease resulted mainly from new R&D resources. 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 further contracted by 23.8% to CHF 17.4 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.

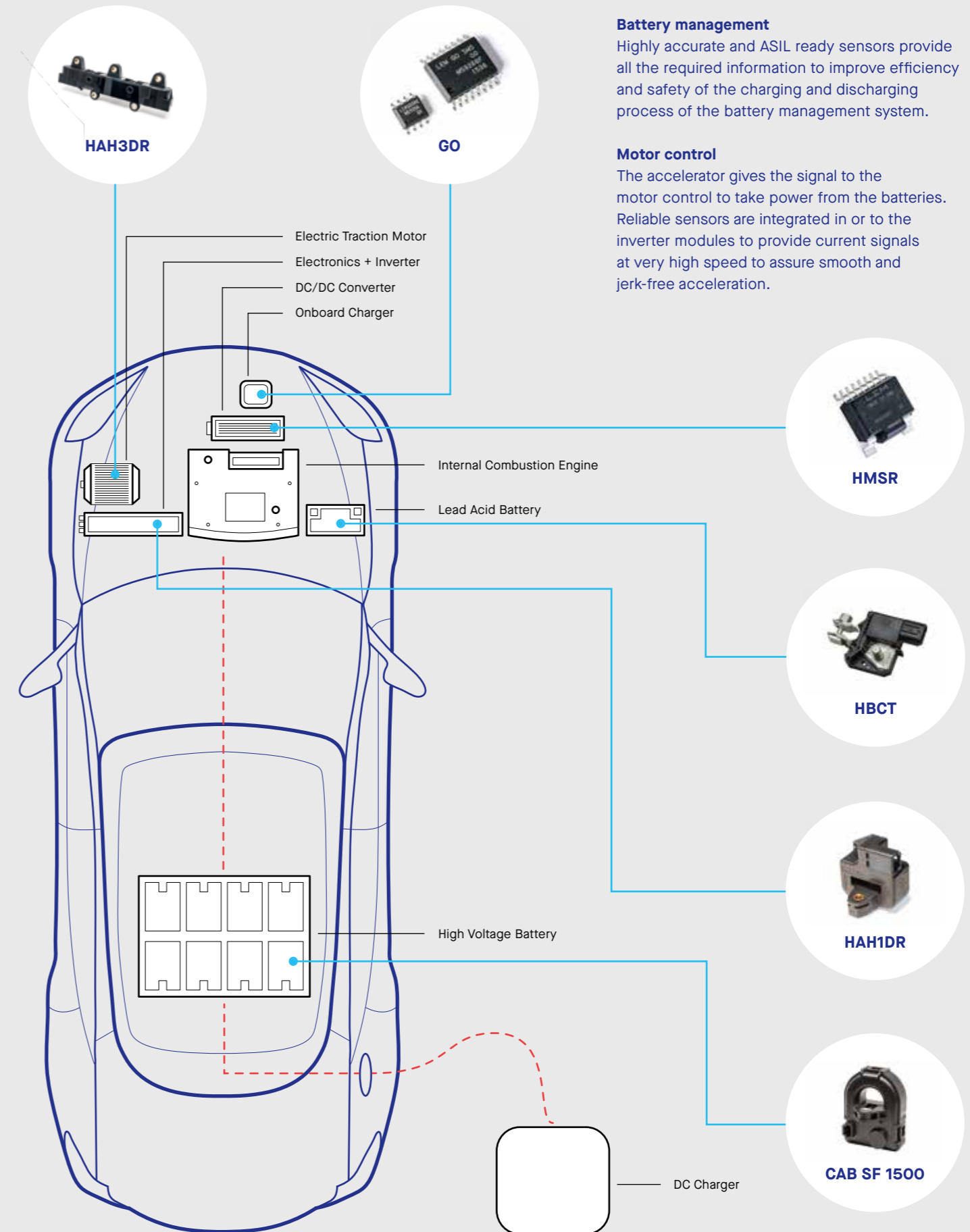
Hybrid electric vehicles / Electric vehicles

Battery management

Highly accurate and ASIL ready sensors provide all the required information to improve efficiency and safety 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.



Well positioned to capture growth on green cars

Sales in LEM's green cars business grew by 3.4% to CHF 50.2 million. The green car business now represents more than 70% of the Automotive revenues, reflecting LEM's strategic focus on electric and hybrid powertrains. We achieved strong growth across all important markets. Our business in South Korea and Japan has been growing fast. In China, we benefit from a leading market position and LEM is well positioned to capture growth opportunities unleashed by the government's ambition to achieve 25% electrified cars by 2025. In Europe, carmakers are under significant pressure to achieve the CO2 emissions targets for new car fleets, and we see significant investments to launch new electric or hybrid-electric car platforms. In the US, the green car industry remains marginal in terms of share of total newly registered car sales, however several major carmakers have announced the launch of electric models (Mustang Mach-E, F150 electric pick-up) with the ambition to shape the market in years to come.

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

We are offering intelligent battery sensors for start/stop architectures combining a unique know-how on current sensing technologies together with our expertise acquired on lead acid battery technologies.

For high-voltage battery management (BMS HV), the battery disconnect 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 knowhow 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 devel-

oped dual range sensors (HSNBV, DHAB) 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 current leakage, we are developing residual current detection (RCD) targeting latest on-board charger generation increasing power density and decreasing costs thanks to high voltage architectures, vehicle to grid/load (V2G/V2L) and with bidirectional/uninsulated architecture. RCD sensors are able to detect 6mA up to 300 mA DC current leakage to protect the system and users thanks to functional safety ASIL grade compliancy.

LEM organization – a long-term partner

LEM has continuously been investing in the development of its organization with a long-term vision of putting talent at the service of reliable, high value-added Automotive solutions. We pride ourselves on being reliable partners to our customers, striving to achieve the highest levels of product quality and project execution.

We aim at building tight relationships with key players of the sector. To do so, we have now completed the reorganization of R&D activities, with regional teams deployed across our key markets in Europe and Asia. We are expanding our network of production locations in Europe with the aim to qualify our site in Bulgaria to Automotive standards and have upgraded our operations in China to the latest cleanliness standards. We are focused on continuous improvement processes for quality, efficiency and utilization throughout the total value chain.

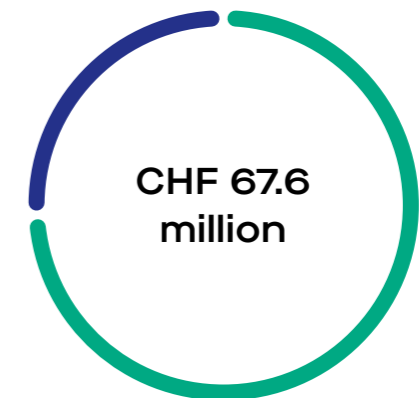
Outlook

The crisis induced by the outbreak of Covid-19 will have a significant negative impact on the growth of green car sales in the short-term. We expect all markets to be impacted globally, with a recovery phase led by China as the first country to lift confinement measures.

However, we remain confident about the long-term outlook for green cars. The megatrends underpinning the shift towards green cars will remain, despite the shock waves the Covid-19 crisis will send across the automotive industry. Several leading carmakers announced in 2019 unprecedented investments in electric and hybrid platforms, showing strong commitment towards the electrification of the industry in the decades to come. Through the enforcement of tighter regulations for gas emissions and consumer incentives, governments in China, Europe, Japan and Korea are actively managing the transition from conventional to green cars. Autonomous driving and Mobility as a Service (MaaS) will further drive demand for electric vehicles.

We expect a strong demand for high voltage products across our portfolio, spurred by growth in Europe, China, Korea and Japan; while charging systems with integrated current sensor products offer the strongest long-term growth potential.

Automotive sales 2019/20



● Green cars 50.2m
● Conventional cars 17.4m

“By becoming a thought partner, tier-1 suppliers can work with OEMs to co-create a vision for the future E/E [electronic components] architecture and jointly shape the requirements.”

Automotive software and electronics 2030, McKinsey & Company, July 2019



Auto sector transformation

Electrification, Connectivity and Mobility as a Service are transforming the auto sector. This requires a fundamental change from linear long-life manufacturing platforms to continuous product development. Creativity, innovation, speed and software skills will be key to survival. There will be clear winners and losers. The very nature of private car ownership is changing. Dr. Oliver Spreitzer, automotive strategy expert, explains.

**Interview with Dr Oliver Spreitzer, Partner,
Strategy Engineers, Munich Germany**

Strategy Engineers is an international management consultancy focused on the automotive industry. Out of offices in Germany and China, it gives strategic advice to automotive OEMs and suppliers on how to turn existing challenges into future opportunities. The firm provides consulting services to LEM.

1. What are the main drivers for the extra-ordinary transformation of the automotive sector?

There are two major transformational drivers short to mid-term – Electrification and Connectivity – and another longer term is Mobility as a Service (MaaS).

Starting with Electrification. The co-operation model is changing, and the need for scale will see platforms either being supplier-driven or OEM driven. Battery supply will be critical, with 20 times growth over 10 years; so major OEMs will vertically integrate and possibly even invest in lithium mines while smaller players will struggle for supply. Fast charging is a key aspect to overcome range issues as well as battery density – the goal will be to achieve 80% capacity in a 5- to 10-minute charge of 350kw, similar to fuel charging today.

The challenge of Connectivity or Autonomous driving is particularly tough. OEMs are historically driven by mechanical and electrical engineering, with rigid hierarchies and linear platforms designed for lifetime production over 6-7 years. Now they need to transform into software companies, which are agile, young, with different processes and continuous development. Some OEMs are building such skills in-house with new people and new locations. Others are outsourcing this software capability and purchasing off the shelf from technology suppliers. Another

route is to establish partnerships between OEMs and achieve scale. The role of regulators will be critical here, with software standards being set and tested across major markets.

MaaS is a longer-term driver and will become a hot issue from 2025 onwards. We forecast that private car ownership will drop significantly, and the global installed base of vehicles will decline by 2/3 after 2030. The taxi model of a single ride cannot scale in cities under new regulations and the movement to sustainability. Therefore, there will be an increase in ride-hailing and drop-off services such as 8-person fully electric vans, shuttling between fixed points in tandem with other forms of public transport. Within this new urban transport system, the majority of car/van buyers will be fleets owners. So, OEMs will have to actively engage with these fleet customers and their requirements; and some may even choose to act as a mobility service provider themselves or acquire companies with that expertise.

2. How well are the OEMs responding to these challenges?

Some OEMs are already finding it difficult to fund the shift to electrification (hence consolidation) – while traditional power train (P/T) suppliers are impacted as well. Almost all traditional OEMs struggle to transform themselves into a software company – if they don't transform (which is not likely) they need to partner and/or find software companies to help them. In any case taking the changes seriously is key and some OEMs are fully focused on electrification and connectivity.

3. How would you paint a picture of the auto manufacturing sector in 5 years' time?

The key trends are clear. Electrification will change everything upside down and will lead to consolidation. China will become more competitive as they are quite good in electrification and own big chunks of the value chain. Pressure on sophisticated car software (assistant systems etc.) will rise and will change electric/electronic (E/E) architectures.

The winners will include Tesla, Chinese OEMs and E/E oriented suppliers; battery suppliers will grow big time. The Chinese OEMs and suppliers benefit from their focus on speed and time to market, the pace of innovation, their willingness to change platforms, experiment and be flexible. And now they also have international experience.

The losers will be most traditional OEMs who will need to partner/consolidate; and internal combustion engine (ICE) -oriented suppliers will definitely suffer.

4. How is the role of the private individual car going to change given trends in e mobility, public transport, urbanization, sustainability? Are there going to be important differences across geographies and cultures?

We have seen less interest in car ownership (or even driver licenses) in younger customer groups for many years already, especially in Europe, and this will of course continue. So far new mobility services have not led to a measurable reduction of the private car fleet. But as I remarked earlier, we do expect this to change quite notably from 2025 onwards.

Sustainability might play a role especially in Europe but we do not expect significant changes in the next 5 years unless governments change policies (e.g. city traffic exclusion etc.).

Urban areas are most suited for mobility services, rural areas will come later. Developed countries will have a higher affinity for non-car ownership than emerging countries.

5. What insights do you have about the different framework factors which will influence the rate of EV take up in different countries or even cities?

CO2 regulations are the key driver, since customer interest and demand for EV technology per se is still rather limited.

As far as it can be seen today, driving bans will not necessarily require increased EV usage, rather use of the latest ICE technology; as this is cheaper, the impact will be limited.

Connectivity is transforming manufacturers from rigid mechanical platforms into continuous development software innovators.

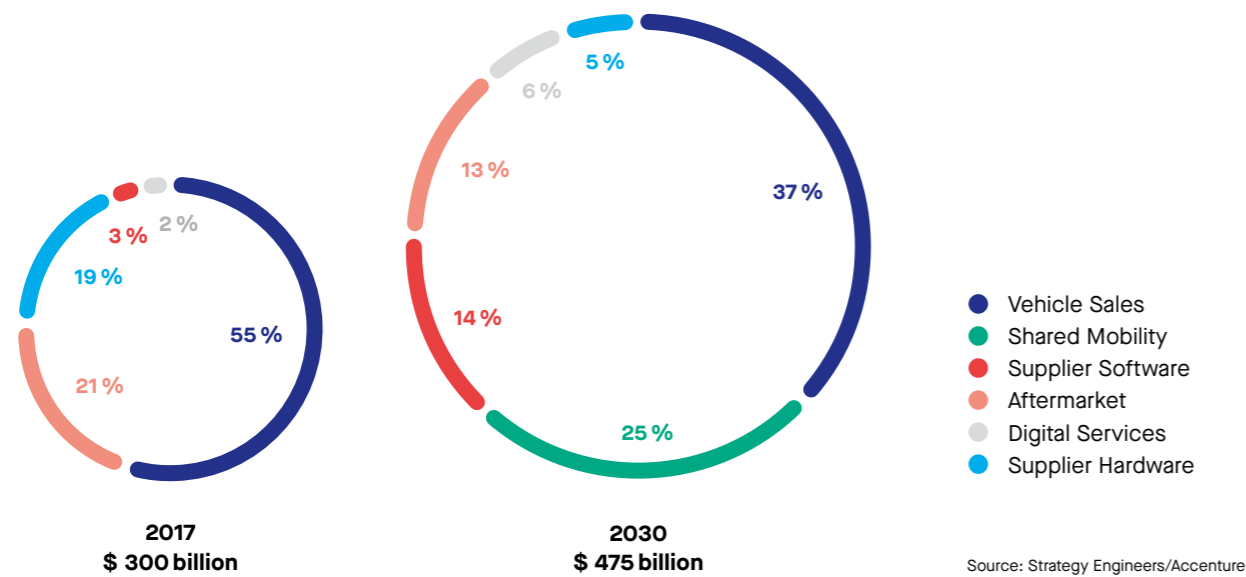
Government subsidies play a big role as evidenced by the dramatic changes in China with a decrease in growth of electrified car sales after the stop of subsidies.

Charging infrastructure is clearly a hurdle today but we believe it will be solved and people will need to get first-hand experiences to gain trust. There will be several actors providing charging infrastructure: OEM own networks; OEM consortium networks; retail outlets such as supermarkets; corporates offering to employees; and of course, existing petrol/diesel retail networks.

Sustainability is a factor as well; we believe that by 2025 there will be a tipping point (from “push” to “pull”) for pure battery electric vehicles (BEVs) as (a) the total cost of ownership (TCO) becomes comparable to ICE cars and (b) it will be totally “uncool” to buy/possess a conventional ICE car.

Electrification will turn everything upside down and will lead to consolidation. China will become more competitive.

Transformation of global profit share in passenger car market



6. What is your view on the importance and influence of certain factors on the choice of power train technologies?

Well in theory the energy mix of electricity production in different countries should be a factor. But so long as regulation is on the use of energy from fuel tank to wheel, the influence will be limited as normal buyers don't care. Current regulations exclude a full "cradle to grave" environmental impact analysis of the different power trains.

A big topic is the cost to the buyer – initial and total ownership. Subsidies and dealer incentives will be needed to reach sufficient sales figures for EVs; this should change from 2025.

Lastly, the driving experience is important. This includes range, charge time, charging infrastructure. It is clearly a learning ground for car buyers to change behavior and gain trust and will be a question of time.

7. Which are in your view the key technical evolutions that influence the design of the onboard systems in Automotive?

The e-motor is not a big influence. Hub motors could change a lot but are hardly applied in mass market cars; there is a strong trend towards fully integrated, modular e-axles.

Batteries will become bigger and need more space; solid state might reduce space and weight, which would also require different cooling techniques. With solid state there is an opportunity for Western companies to build a new innovative approach to counter the Chinese dominance of the liquid battery market.

DC links will be important due to the increase in charging power (e.g. 350 kw) that requires charging cooling and new onboard chargers. New charging strategies will be needed to assure satisfactory battery life.

We expect big changes to E/E architecture due to the need for substantially higher computing power for onboard applications. There is a trend towards higher voltage for onboard networks, up to 400 V and even 800 V.

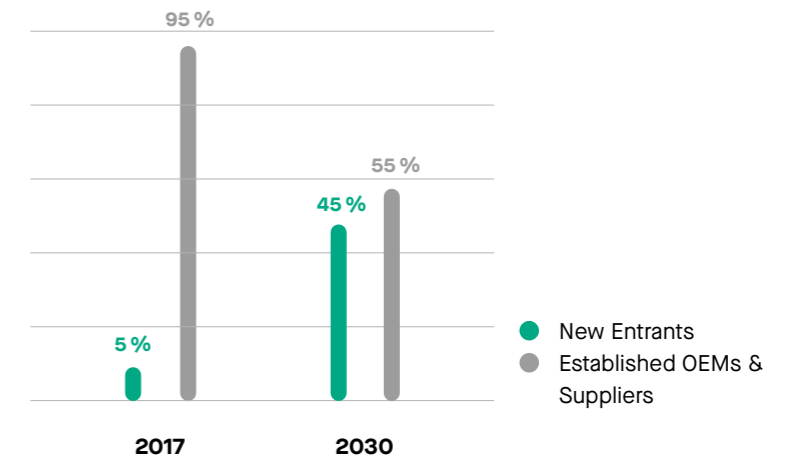
8. What are the key lessons already to be taken from the Covid-19 outbreak for the sector?

Clearly there needs to be a rethinking of the global supply chain and to reduce dependability on China. The pandemic is having a dramatic financial impact, with some estimates of a loss of over \$100 billion in revenues. This will sharpen even more the decision-making process for OEMs about where they invest going forward across their different technologies and platforms. And it will accelerate the consolidation process in the sector, with perhaps a role for governments in deciding who survives. It will be interesting to see the impact of the pandemic on consumer appetite for travel and attitudes to car ownership.

9. What are the key organizational characteristics and skillsets needed for the auto manufacturing sector to navigate this transformation challenge?

The old style mechanically driven OEMs will need to change their rhythm from platform and program-oriented engineering to one of continuous product development. Employees with new skillsets will be needed in software related functions. There will be less hierarchy, with more agility and empowerment to take and execute fast decisions. Creativity and innovation will become valued, with greater appetite for risk and there will be more openness to making mistakes. The old mantra of slow but sure focus on 100% quality and efficiency will be sacrificed for adaptability and speed to market.

Share of addressable profits in passenger car market



The old mantra of slow but sure focus on 100% quality and efficiency will be sacrificed for adaptability and speed to market.



Trends, technology, R&D

The current sensor market is expected to grow by about CHF 1.5 billion in the next 6 years, driven by Mega trends such as renewable energy, mobility, and digitization. LEM is adopting new technologies across its broad portfolio of applications. Significant investment in our highly skilled R&D teams continues to bear fruit. We launched ten products in 2019/20.

Mega trends drive long-term growth

Our growth is driven by mega trends such as renewable energy, energy efficiency, reliable energy, distributed energy, mobility, automation and digitization. They drive demand for sensors, give multiple opportunities to leverage LEM expertise and ensure a sustainable long-term business for all our stakeholders.

Based on IHS data and our analysis, the current sensor market is expected to grow from about CHF 2.4 billion in 2019 to CHF 3.9 billion in 2025. Our strong heritage is industry applications where we are market leader and have significant growth potential, while our fastest growing sector in the long-term is Automotive applications. Far from being a mature market, current sensing products are undergoing significant mutations, driven by new applications and technologies. These fast-changing markets will lead to pricing pressure, shorter product lifetimes, quicker return on investments and will require companies to be more agile.

“It now looks like emissions could easily drop by 5% or more this year alone as a result of the Covid-19 pandemic...and in the longer term, the stickiness of some of the new behavior, business models and technologies will certainly accelerate the transition to a low-carbon economy.”

Source: Bloomberg NEF, Michael Liebreich
“Covid-19 – The Low-Carbon Crisis” March 26, 2020

The chapter on the auto sector transformation describes the scale of what is happening to both OEMs and suppliers; consequently, LEM has opportunities thanks to the switch to electric powertrains, the miniaturization of components and the adoption of integrated current sensors. Across both Industry and Automotive applications, we see demand for additional functionalities towards current transmission and digital information.

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). These allow higher switching frequencies and thus are 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 remaining 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 decentralizing 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.

Sustained R&D investments

In 2019/20 we continued to invest substantial resources in R&D to assure long-term growth. Four main trends prevail in driving our investments: the strong demand for electromobility 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 split into near-, mid-, and long-term projects, such as developing building blocks for the next decade. This is leading us from a traditional, electromagnetic sensors company into a broadened business of various integration levels. Examples are the integrated semiconductor based HMSR, which will be released in 2020, and the DC meter for charging stations which has an intelligent ethernet interface and a high integration level into the customer product.

Our R&D team provides 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. This gives us the versatility to master the value chain from the design function at an IC level all the way up to the full sensor and customer application. Our broad skillset led us to produce functionally safe sensors to protect customer products and users from higher current ranges. As a result, dedicated products in the automotive segment have been certified by an external third-party and are thus functional safety compliant.

Development across sites, teams and segments

We slightly increased our R&D investment from CHF 27.6 million in 2018/19 to CHF 28.0 million in 2019/20 and continued to contract R&D resources to support projects.

In Lyon we develop products for smart grid, traction, DC metering for EV fast charging stations, and automotive battery management systems. We hired a new project manager for traction products and rented additional space to extend our testing laboratory, prototyping facilities and create additional meeting rooms.

In Geneva we focus on products going into drives, residual current detection, high precision and semiconductors. To strengthen the semiconductors team, we hired two engineers with experience in semiconductors and transferred two engineers from other functions within LEM.

R&D teams in both Geneva and Lyon focus on new and advanced technologies, such as embedded software and validation, 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.

In Japan, we completed the new R&D team for Automotive applications, which successfully launched the HBCT battery sensor. We further strengthened engineering capabilities in Beijing and Sofia to execute major locally customized projects, such as open loop sensors in Beijing and Rogowski coils in Sofia.

Technical focus and product launches

We are running product projects in the areas of automotive battery management, integrated current sensors for renewable energy applications, drives and traction.

We continued to make 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.

We launched two traction voltage sensor products. In the area of smart grid, we work on products going beyond pure sensors and launched our first digital integrator product, which works with our Rogowski coils, and we are in the process of completing a second one with a high current output. We continue working closely with customers to develop tailored solutions for DC metering for Electric Vehicle Fast Charging stations which are currently being approved by the German authorities for their market.

We enhanced our battery management system family with a broader CAB product portfolio, including a functional safety certified version. We are working to address more compact solutions and cheaper cost per surface to fit power trains. We are also in the process of developing a full range of products of fast charging systems, in particular with residual current detection solutions.

Our efforts were recognized by the granting of 13 patents, 1 utility model, and 13 designs.

Our significant investments in R&D over recent years continue to bear fruit. In 2019/20 we launched ten products.

Outlook

In 2020/21, the investment in our R&D capabilities will remain significant. In Automotive we will focus on compact packaging of products, improved performance, and reduced volume. In Japan, we continue working on an important customer project and in China on strengthening our capabilities. In Industry we will focus on DC meters and the HMSR and will see further growth in the development of ASICs and semiconductor-based integrated current sensor products.

Product launches 2019/20

Product	Segment	Application
LZSR	Industry	Renewables
DVC1000P	Industry	Traction
DVC1000X	Industry	Traction
AI-PMUL	Industry	Smart Grid
HOF-Analogue	Industry	Drives
HLSR with FeSi Core	Industry	Renewables
IN 2000-SB	Industry	High Precision
IN 500-S	Industry	High Precision
HBCT	Automotive	Battery management
CAB SF 500	Automotive	Battery management



LZSR

Hall effect ASIC closed loop sensors, high peak measurements and very low offset drifts. For solar inverters. Also for robotics, servo motor and variable speed drives, uninterruptible and switch-mode power supplies, battery-supply installations, welding power supplies.

AI-PMUL

Versatile integrator for Rogowski coils. Wide range of standard analogue true RMS and instantaneous outputs. Measures AC currents into the smart grid, allowing control rooms to automate, monitor remotely and share real-time equipment data.



DVC 1000-P

Insulated nominal measurement of 1000 V DC, AC or pulsed. Compact, light, robust. For traction and industrial applications. Measures voltages in DC link, inverter output voltage, input voltage of 4 quadrant converters, or battery voltage in rolling stock equipment.



HBCT

Hall effect open loop automotive current sensor. Measures actual value flowing in and out of the battery and ambient temperature. Full galvanic separation of high power and electronic circuits. Excellent accuracy, very low thermal offset and sensitivity drift.

A man in a blue polo shirt is shown in a factory setting, looking thoughtful with his hand on his chin. The background is a blurred industrial environment with overhead lights and machinery. The right side of the page has a blue background with white text and decorative wavy lines at the bottom.

Culture, talent & values

We offer people the opportunity to develop personally and to make an impact on society. Our global footprint and human size encourages mobility and diversity. We continually look for talent with core competencies in new markets and technologies. Leadership, entrepreneurship and an improvement mindset are key qualities we seek. In 2019 we launched a global program to build a Constructive Culture to underpin how we all think, behave and communicate. Regarding Covid-19, we are proud of how all our teams have adapted to the different regulations while continuing to serve our customers.

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. LEM is made of the expertise, talent and leadership of the 1,500 people working relentlessly to bring customers the best solutions. Our organization is evolving towards a decentralized model where the headquarters are responsible for strategy, setting standards, innovation and coordination. 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.

“A conscious business fosters peace and happiness in individuals, respect and solidarity in the community, and mission accomplishment in the organization.”

Fred Kofman, Conscious Business

The need

We have consistently invested resources in talent development programs and coaching sessions to help talents grow and shape the future LEM. But the challenge today is how to equip our teams with the appropriate mind-sets and skill-sets to work in this reshaped organization, to collaborate effectively, to change old habits, to become more agile. In short, to develop a High-Performance Culture.

The way forward

Working together with a specialist consulting firm (sum people), we have devised a global program – our Culture Journey – that we believe will help all our people significantly improve their individual performance, and thus that of the whole organization.

Research shows many organizations exhibit three types of culture:

Aggressive/Defensive (Red Style)

These encourage members to appear competent, controlled and superior - even if they lack the necessary knowledge, skills, abilities or experience. The constant pressure to maintain the façade of perfection and expertise comes at the expense of members' health, motivation, teamwork and the way in which customers are treated.

Passive/Defensive (Green Style)

These members are expected to do whatever it takes to please others (particularly superiors) and avoid interpersonal conflicts. As a result, those organizations experience quite a bit of unresolved conflict and turnover and their members report relatively low levels of motivation and satisfaction.

Constructive (Blue Style)

These encourage members to work to their full potential resulting in high levels of motivation, satisfaction, teamwork, service quality and sales growth.

The goal is for LEM to build and maintain a consistent Constructive Culture to underpin how we all think, behave and communicate personally and collectively. The Blue Style consists of 4 categories of desired behavior: Achievement, Self-Actualizing, Humanistic-Encouraging and Affiliative.

The process

The methodology developed and validated by Dr. Ekki Kuppel is the IT-WE-I triangle used to build a High-Performance Culture.

The guiding principle is to work simultaneously on all three elements of high performance “Enhancing the I and the WE in the service of the IT”.

Two surveys are completed by participants at the level of the individual (I), and the team and organization (WE). These measure the three behavioral styles: Aggressive/Defensive, Passive/Defensive and Constructive.

Implementation

Like all effective change programs, this Culture Journey started at the top of LEM: the Executive Committee completed the surveys and participated in two workshops to share, understand and plan changes to their styles.

It was decided to implement and cascade the program in three phases:

1. The first-level management teams in three regions: Switzerland/France, China, Bulgaria
2. Culture Ambassadors across all regions
3. These in-house staff then train second-level management teams in all regions

The sequence for each group follows that for the Executive Committee: the surveys plus two High-Performance Team (HPT) workshops, with a phased timing across 2019-2020.

High performance culture model



Source: sum people all rights reserved, 2020

Culture journey

The role of the Culture Ambassadors is particularly important. They are drawn from a wide-cross section of functions and experience levels. The essence of the Ambassador program is to empower key influencers from across the organization to work with the Executive Committee to spearhead the culture transformation of LEM. Within this they have 5 key roles

1. Become role models with Constructive Blue behaviors, acting as Players and Learners
2. Coach and mentor other members of the organization to spread constructive behaviors
3. Act as an informal communication bridge between leadership and the rest of LEM to bring greater clarity
4. Be storytellers for the new LEM culture
5. Build with Executive Committee and implement the culture plan for the rest of LEM

Insights to date

Different parts of the LEM group are at different stages along the program. Each High-Performance Team (HPT) is expected to take ownership of the findings and to devise specific actions to adopt more of a Blue Style in their everyday work and communication.

Individuals have found the experience to be helpful for better understanding of their own styles, and that of their colleagues on the HPT. Unsurprisingly, there is more Red Style and Green Style than that of Blue Style across most teams. This validates why the LEM Executive Committee commissioned this Culture Journey in the first place; they had recognized room for improvement.

An important feedback from Culture Ambassadors is their positive surprise at the commitment of the senior management to such a broad and deep program. Moreover, the Executive Committee have witnessed

the excitement and energy of the Ambassadors, and recognize the importance of their own leadership as role models. This argues well for the dynamism of the Culture Journey going forward.

Participants have learned some useful techniques to communicate better, to deal with criticism, to build trust, to solve problems constructively. A small example is the technique of “checking in” at the beginning of a meeting on participants’ overall mood and other concerns which may be blocking performance on the issue under discussion.

The program is also enabling teams to avoid blaming others for failures on a project, but rather to take ownership and learn from mistakes collectively. This is important as the organization seeks to adopt best practices and ensure cross-functional approaches, rather than sticking to traditional “silos” of expertise.

In summary, it is already clear that a Constructive Culture will help current employees achieve their full potential and enjoy their experiences, as well as attract the right caliber of new talent to ensure LEM achieves its strategic goals.

Executive Committee



Frank Rehfeld
Chief Executive Officer



Andrea Borla
Chief Financial Officer



Rebecca Cullinan
Senior Vice President, Industry



Rainer Bos
Senior Vice President, Automotive



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 continue to invest 1.5% of total group salary costs for internal courses and participation in external training. As part of our internal talent inventory, this year we launched the Leadership and Talent Acceleration Program which incentivizes and defines development wishes of our employees and increases 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. Some employees had the chance to broaden their cultural experience and work temporarily at the Geneva, Beijing, or Sofia site. Leadership development programs at LEM focused on change management and delegating responsibilities. These efforts were complemented by a specific increase of technical competencies such as key account and project management.

We believe our Culture Journey program (see pages 38–40) will help all our people significantly improve their individual performance, and thus that of the whole organization. Our goal is to continually develop a constructive High-Performance Culture to underpin how we all think, behave and communicate personally and collectively. The program was launched during 2019, starting with the Executive Committee; it is being adopted by all senior management teams, and cascaded across the company with the engagement of internal Culture Ambassadors.

Equal opportunities

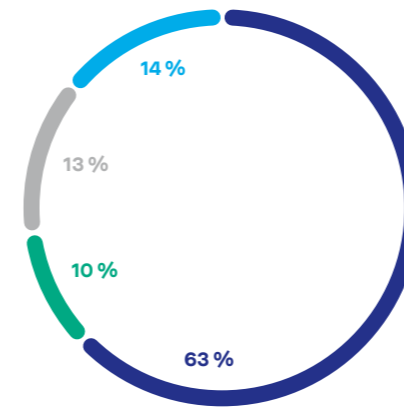
LEM provides equal opportunity to all qualified individuals. The share of female employees is 54% in the overall workforce. However, given the historically high share of engineering positions in product development, sales & marketing and management, the share of female employees in the non-production related activities is 31%. 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. In December 2019, we welcomed our first female mem-

Employee analysis

	31.3.2020	31.3.2019
FTE		
Permanent employees	1'376	1'385
Temporary employees	109	48
Trainees	11.84	44
Total	1'497	1'477
Women in overall workforce	54%	54%
Women in non-production related activities	31%	34%
Women in management positions	30%	24%

Workforce by activity

1'497 total employees



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

ber of the Executive Committee with Rebecca Cullinan as new Senior Vice President Industry. Last year, the Geneva site conducted an in-house equal pay survey following a new disclosure requirement by the Swiss government. The analysis, which was verified by an independent body, showed that men and women earn the same salary for equivalent positions.

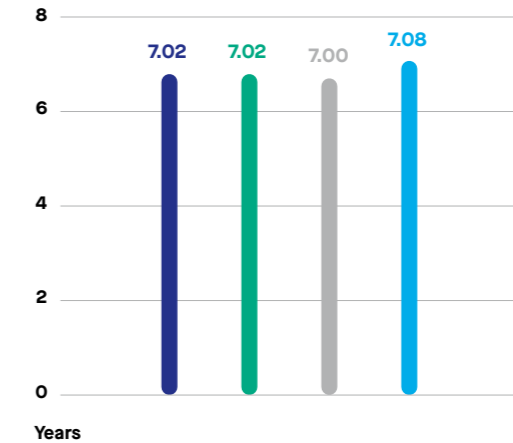
Health and Safety

We continue to enhance health and safety at the workplace. The most important measures include systematic health and safety training for newcomers, seminars and online classes to support work-life balance, 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.

In regard to Covid-19, we strictly followed the hygiene measures and social distancing rules communicated by the local authorities. In Beijing, we extended the shutdown of our site for an extra week after the Chinese New Year's holiday. In Geneva, Lyon, and Sofia

Average length of service

1'376 permanent employees



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

we introduced various measures, starting mid-March. We encouraged employees to work from home or to split their time at the office with their colleagues, to conduct meetings via Skype or telephone, provided hand sanitizers and protective masks, deployed additional cleaning of door handles and handrails, asked people at risk to stay at home, and issued employer certificates for cross-border commuters. In Geneva, we mobilized a crisis management team, which meets once a day to monitor the situation at the Geneva site and to follow the guidelines provided by the local and national health authorities as well as the WHO.

Internal communication

We continued to improve internal communications, particularly when it comes to important, strategic information, such as the announcement of the new SVP Industry, the retrenchment of certain jobs in Geneva, the new Group Operations organization, Covid-19, and the quarterly results. We also held regular town hall meetings at all sites during executive management visits as well as a monthly leadership lunch with the CEO.



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,
Member of the Strategy Committee

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

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. Our success stems from operating within a clear value system, following best practice principles and standards, together with the close monitoring of environmental, social and governance (ESG) key performance indicators (KPI).

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 2020 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.

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

Sustainable and ethical practices create long-term benefits for society and business longevity. We operate within a clear value system governed by our Code of Conduct.

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.

Our sensors for energy efficient applications contribute to a more sustainable world. We continually develop our ESG initiatives and report transparently on our progress.

ESG performance

With our sensors for energy efficient applications, we contribute to a more sustainable and responsible world. Equally, we recognize the importance to make a meaningful contribution within our organization and to keep score of our environmental, social, and governance (ESG) performance. This is why we started collecting key performance indicator (KPI) data since 2015. Our ambition is to continually develop our internal capabilities and sustainability initiatives, and to report transparently on our progress.

Environmental

We measure our environmental footprint through the consumption of power, water, and petrol, the CO2 emissions from air freight, continuous compliance with ISO 14001, and the number of supplier audits conducted.

Power, water, and petrol consumption are measured by the total numbers of sensors sold, as all of them are directly output related. Petrol is used for our company cars globally, mainly by our sales teams, and also to back generators during power shortages in China. We disclose CO2 emissions from air freight, as this is the main mode of transportation to get our products to our customers.

Our 4 production sites comply with the ISO 14001 standard. Every year, we audit suppliers based on their ESG performance and make sure that our ESG principles are well cascaded across our supply chain; this is our standard procedure before we accept a new supplier.

Since 2015, the KPIs for supplier audits, freight emissions, and petrol and water consumption have shown a positive development and we maintain the ISO 14001 certification due to consistent processes.

Social

It is our goal to foster a culture that encourages professional development, equal and fair treatment, and that nourishes and empowers every individual. We want to be a company where every employee can feel safe to be creative, innovative, and thrive with their personal talents.

We make sure that our employees are not subject to discrimination based on characteristics other than inherent factors required for the job. This financial year, our Geneva site was audited for its gender pay gap confirming that women and men earn the same salary for equivalent positions (see chapter Culture, talent and values). To help our talent prosper, we encourage them to seek professional development. We executed 908 training days in 2019, which is more than double that of 2015.

In light of Covid-19, our site in Beijing donated 165,000 RMB to finance epidemic prevention material for a hospital in Wuhan. Half of the donation came from our employees and half from the company.

Governance

We want our employees to act based on our CoC to make sure that our values are well understood across all sites, cultures, and positions. This is why we ensure all employees sign the CoC upon their arrival and require them to take an e-learning. The test was launched in mid-2017, is based on 12 questions and has to be retaken every three years. For the year 2019, 84% of our employees with more than six months at LEM have taken this test.

ESG Key Performance Indicators

	2015	2016	2017	2018	2019	2019 vs 2015
Environmental						
Power consumption (kWh)/total numbers of sensors sold	0.152	0.149	0.141	0.144	0.156	+3%
Water usage (L)/total numbers of sensors sold	0.65	0.72	0.63	0.49	0.51	-22%
Petrol usage (g)/total numbers of sensors sold	1.25	1.21	0.89	0.85	0.90	-28%
Freight emissions in tons of CO ²	N/A	N/A	N/A	7'618	7'577	(vs 2018) -1%
Production sites with ISO 14001	100%	100%	100%	100%	100%	✓
Number of supplier audits	38	36	55	46	44	+16%
Social						
Discrepancy between salaries of men and women*	N/A	N/A	N/A	N/A	99.7%	✓
Number of training days by external companies	287	410	571	366	908	+217%
Governance						
Code of Conduct signed by our employees	93%	89%	93%	96%	97%	+5%
% of employees trained on the Code of Conduct	N/A	N/A	N/A	63%	84%	(vs 2018) +33%

All years are 12 month calendar periods
*100% = no discrepancy, Geneva site only

Information for investors

Contact

Andrea Borla (CFO)
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E-mail: investor@lem.com

Number of registered shareholders

	31.3.2020	31.3.2019
1-499	1'048	1'153
500-4'999	50	50
5'000-49'999	5	7
50'000 and more	4	4
Total	1'107	1'214

Shareholders by category

In %	31.3.2020	31.3.2019
Institutional shareholders	48.7	48.1
Private individuals	25.6	26.7
LEM employees, managers and board	6.6	6.5
Treasury shares	0.0	0.1
Nonregistered shares	19.1	18.6
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

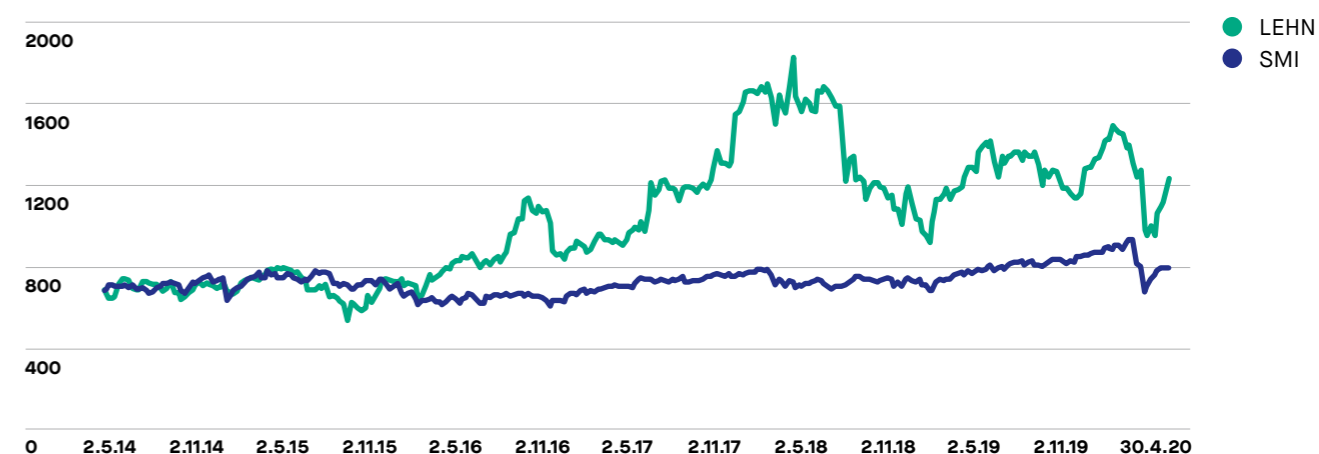
In number of shares, CHF	2019/20	2018/19
Number of shares	1'140'000	1'140'000
Year high ¹	1'520	1'772
Year low ¹	850	920
Year-end ¹	1'062	1'280
Average daily trading volume (shares) ¹	1'041	878
Earnings per share	53.27	45.97
Ordinary dividend per share ²	40	42
Market capitalization as per 31 March ¹ (in CHF millions)	1'211	1'459

¹ Source: SIX

² Proposal of the Board of Directors to the Annual General Meeting of Shareholders for 2019/20

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

in CHF



Source: www.six-group.com

Financial calendar

1 April 2020 to 31 March 2021

9 June 2020	Annual General Meeting for the financial year 2019/20
16 June 2020	Dividend ex-date
18 June 2020	Dividend payment date
29 July 2020	First-quarter results 2020/21
3 November 2020	Half-year results 2020/21
4 February 2021	Third-quarter results 2020/21
19 May 2021	Year-end results 2020/21
24 June 2021	Annual General Meeting for the financial year 2020/21
1 July 2021	Dividend ex-date
6 July 2021	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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