



Sustainability  
highlights  
—  
2017

# About Elkem

Elkem is a world-leading provider of silicones, silicon and carbon-based solutions. We have a unique position in the market with full ownership throughout the value chain, from quartz to specialty silicones. Elkem also has strong positions in specialty foundry alloys and carbon materials. Elkem was listed on the Oslo stock exchange in March 2018, and at the same time acquired one large silicones plant and one silicon production facility in China. After the acquisition, Elkem has annual revenues of 21,4 billion NOK, employs over 6,000 people and operates 27 production sites around the globe. The company has an extensive sales and R&D network that enables us to deliver innovative technologies and market-based solutions, while contributing to a sustainable future.

Elkem is a signatory to the UN Global Compact, and defines sustainability in line with the principles of the UN Global Compact. Elkem defines sustainability work as continuous efforts to minimise any negative impact on the environment and society. We do this by complying with relevant public regulations, while simultaneously building a profitable and respected business.



**United Nations**  
Global Compact

Elkem reports on sustainability in accordance with the Global Reporting Initiatives' (GRI) Standards: core option. The full GRI report can be found on our website, [www.elkem.com/sustainability](http://www.elkem.com/sustainability).

This document provides an overview and selected highlights of our activities in 2017. The reports for 2017 do not include the newly acquired Chinese plants.

## Sustainable development goals

In 2015, the United Nations set 17 Sustainable Development Goals (SDGs) to be achieved by 2030. The SDGs require the active participation of businesses as a principal driver in achieving these global goals. For the first time, Elkem has analysed how our business activities impact the SDGs and which goals are most relevant for Elkem to contribute towards.



# A message from Helge Aasen

As a global company, we affect and influence the world around us every day, both near our local plants and offices, and worldwide, in our supply chain and by selling our products. We believe that Elkem's solutions will be vital components in a sustainable, low-carbon world, and we recognize this as a great responsibility. To achieve sustainable growth, we must stay at the forefront of technology and innovation, while providing good and attractive jobs. We must also develop products and processes that improve quality of life and minimise the negative impact of our activities, both environmental and social. That is why we are committed to the UN Global Compact and to the United Nations 2030 Agenda. This year we have identified the Sustainability Development Goals (SDGs) toward which Elkem can make the greatest impact. I would like to focus on three of these goals.

## Safe and decent work

As a global company operating in 28 countries with more than 6,000 employees, we put the health and safety of our people first. After a setback in 2016, this year we were back on track with fewer injuries, 3.1 recordable injuries per million working hours.

In Elkem, we value diversity and are a local employer in all the countries we operate. However, our female representation remained low in 2017, at 21 per cent, and is only 7 per cent among operators. We continue to look for ways to increase the number of women in our workforce. The percentage of women in management positions increased to 28 per cent in 2017 and we expect the increase to continue in 2018.

As a large purchaser of goods and services, we have a strict set of standards to prevent child or compulsory labour and to ensure safe and decent working conditions throughout our supply chain. In 2017, all major contracts contained our CSR policy and there were no reported incidents of policy breaches.

## Innovation and sustainable industrialisation

I believe that Elkem should be a promoter of sustainable industrialisation, and that we can support sustainable development through developing innovative business models and solutions. Our products are indispensable elements in a wide variety of applications that contribute to better health services, renewable energy, electric mobility and digitalisation, to name just a few. In 2017, we had over 400 employees working in R&D and innovation at our 13 R&D centres around the world, and our R&D budget was 371 MNOK.



To achieve sustainable growth, we must stay at the forefront of technology and innovation, while providing good and attractive jobs. We must also develop products and processes that improve quality of life and minimise the negative impact of our activities, both environmental and social.



## Reduced emissions

Elkem has a clear responsibility to take climate action by reducing our greenhouse gas emissions. Our long-term goal is to achieve carbon neutral metal production. Several R&D projects are in place to develop the necessary technology to reach this goal. Meanwhile, Elkem seeks to reduce fossil CO<sub>2</sub> emissions by replacing fossil coal with biocarbon as a reduction agent in our smelting furnaces. Through consistent and dedicated effort, we reached our 2020 target of using 20 per cent biocarbon already in 2017. We know that further increases will require significant R&D break-throughs and that the economic viability will also become more challenging. However, we are committed to continue our efforts to reach our goal of 40 per cent biocarbon by 2030.

In this magazine we have gathered a few highlights from our sustainability activities in 2017. You can read our full sustainability report online at [www.elkem.com/sustainability](http://www.elkem.com/sustainability).

Sincerely,

A handwritten signature in blue ink that reads "Helge Aasen". The signature is written in a cursive, flowing style.

Helge Aasen CEO  
Elkem AS

# Sustainability in Elkem



**PRESENT IN COUNTRIES 28**

Strong position in growth markets such as China

**13** INNOVATION CENTRES

R&D BUDGET

**371** MNOK

**18** PHD CANDIDATES

**> 400**

R&D PERSONELL

**R&D AN INNOVATION PROJECTS INTO:**

- Battery technology
- Sustainable raw materials
- Energy efficiency
- Electric vehicles



**ZERO**

tolerance on corruption and anti-competitive behaviour

**CSR** STEERING COMMITTEE

SIGNATORY TO GLOBAL COMPACT



**100**

100 per cent communication and training in Code of Conduct, anti-corruption and business ethics

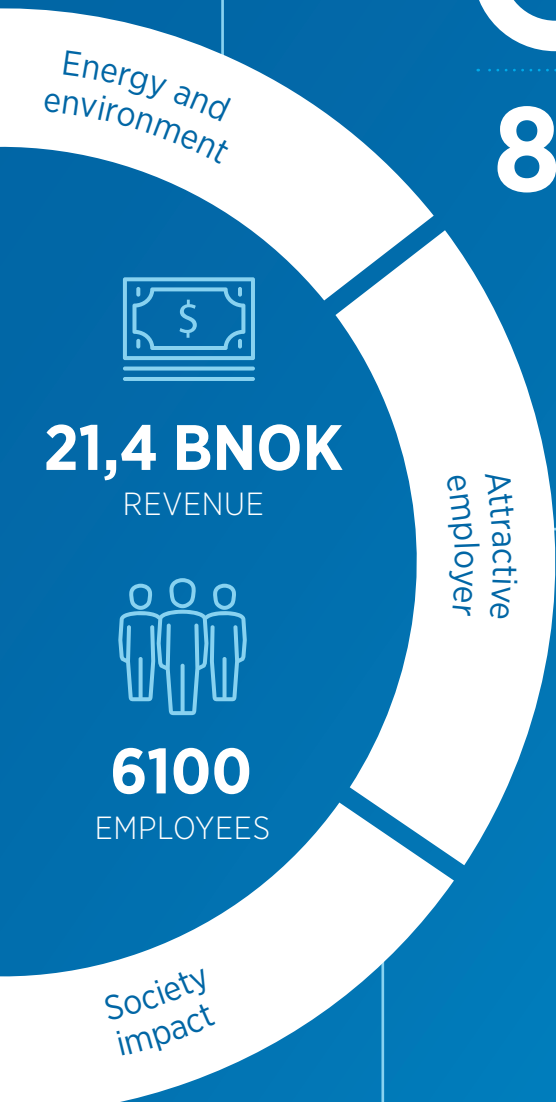


**GLOBAL PRESENCE**

with 27 production sites and sales offices in 28 countries

Sustainable growth

Governance and compliance



**21,4 BNOK**  
REVENUE



**6100**  
EMPLOYEES



21 PER CENT USE OF SUSTAINABLE BIOCARBON IN 2017

**100,000**  
tonnes of recycled process products sold

**808** GWh  
ENERGY RECOVERY

SO<sub>2</sub> scrubber installed at Elkem Carbon Fiskaa

Signatory to the responsible care global charter



Attractive employer



**21%**  
FEMALE SHARE

100 per cent of employees get annual development discussion

12 trainees of which 40 per cent women

Extensive apprentice scheme

Recordable injury rate in 2017: **4.5**

Society impact

Human rights screening and supplier audits

INVESTMENTS  
**1,011** MNOK

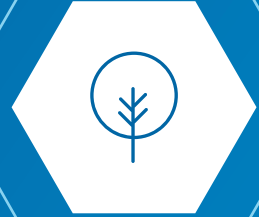
**35** locations surveyed to map stakeholder engagement activities



BICEPS initiative for sustainable shipping



**COMMUNITY PROGRAMMES TO SUPPORT GOOD EDUCATION**





Elkem's mission is "to contribute to a sustainable future by providing advanced silicon, silicones and carbon solutions, adding value to our stakeholders globally".



Photo: Shutterstock

## Sustainable growth

To stay competitive, we believe it is necessary to be at the forefront of advancing the production of silicones, silicon and carbon materials and create new, innovative solutions and business models that promote a sustainable future.



Future-oriented and ambitious innovation has been the foundation for Elkem's development and success since the company was established by Sam Eyde in 1904. Our commitment to R&D upholds our reputation as a leader in our field, and we continuously lead the way in pioneering technologies that ask more from chemistry and metallurgy.

Today, Elkem operates thirteen R&D facilities with more than 400 employees. R&D is an integrated part of Elkem's operations, through all operating divisions. Elkem's R&D facilities and researchers also cooperate with notable research institutions around the world to develop more efficient, sustainable and advanced manufacturing processes and products. Elkem's R&D is focused on:

- Market-driven R&D to generate innovative speciality products.
- Operational excellence and sustainable specialisation through production technologies that are environmentally friendly and energy-efficient.
- Reduction of energy consumption and optimisation of the raw material base.

Parts built using EnvisionTEC's  
3D-Bioplotter.

# Sustainable 3D printing with silicones – a breakthrough for health-care markets

Silicones are the number one material of choice in many industries due to their outstanding properties like biocompatibility, transparency, heat resistance and flexibility at low temperatures.

## Personalized products to the health-care market

Elkem Silicones launched a project in 2017 to integrate silicones into 3D printing in order to be the first to offer personalized orthoses, prostheses, anatomic models and long-term implants to the health-care market.

## Sustainable manufacturing process

With 3D printing, each part is printed dot by dot using only the necessary amount of silicone. This way Elkem will be able to reduce waste and contribute to a more sustainable manufacturing process.



The project is based on the open innovation culture at Elkem Silicones with academic and industrial partnerships, and is supported by the French authorities through fundings of a collaboration platform for 3D printing. The aim is to build an industry cluster around sustainable 3D printing, to be among the leaders in the field and to further develop new markets adapted 3D printing technologies by using silicones.

## Reducing emissions and harvesting value

Harvesting raw materials from waste streams is one way that Elkem works to reduce emissions and create value for customers.



## All production necessarily creates by-products.

In recent years, there has been an increased focus on how we can make use of these products to create more value and reduce waste. In Elkem, we have renamed our by-products "Process Products" and since 2013 a team of four professionals are working together with the plants and customers to develop new, innovative solutions that capture the value of these products. BriqSil® is a product that can be used as an alternative to standard ferrosilicon. Various streams from ferrosilicon and silicon production are now collected and compressed into briquettes that are tailor-made to suit the various needs of steel producers. In 2017 a total of 15.000mt of BriqSil was sold into the Steel Industry.

*- Each year we harvest a total of 100,000 tonnes of process products to generate new solutions for our customers. As part of our zero-waste initiative our work has the added benefit of cleaning up operations, minimising emissions and creating better working conditions for our employees, says Cor Oldenzel, head of the Process Products team in Elkem.*



## Training in corporate governance and tools

Elkem considers good corporate governance to be a prerequisite for value creation and trustworthiness. Elkem has governance documents setting out principles for how business should be conducted.

Training of employees is very important. All employees are required to sign Elkem's Code of Conduct, which includes details about all Elkem policies related to social responsibility, and focuses on understanding how local culture and customs can influence the perception of what is acceptable in different situations. Selected target groups are also required to document their completion of training in Elkem's anti-corruption and competition law compliance policies. Agents doing business with Elkem's products also receive anti-corruption training. Employees who conduct supplier audits receive additional training in recognised international audit methods and the use of auditing tools. The goal is that all new employees shall receive training and sign the Code of Conduct within one year of joining Elkem. The same goes for all employees in the target groups for corruption and competition law compliance training. These targets were met in 2017.

### Elkem's CSR steering committee

Elkem's corporate social responsibility (CSR) work is coordinated by a steering committee which reports directly to the CEO and is responsible for reporting any major discrepancies to Elkem's Board of Directors.

*-It is important to us that our CSR efforts are anchored at the very top of our organisation to make sure the goals and values we set are integrated throughout the company. CSR is not "in addition to", it is a part of who we are and what we do,* says Katja Lehland, Senior Vice President of HR and head of Elkem's Steering Committee for CSR.

The main objectives of the Committee are to ensure compliance with internationally recognised standards for Corporate Social Responsibility. The Committee has developed a number of documents and tools to facilitate compliance and improvements in the areas of sustainability and social responsibility. Each location and function is responsible for establishing an understanding of how Elkem's CSR policy affects their specific working environment and ensuring full compliance. The CSR Steering Committee provides direction on how to prevent discrepancies and the necessary resources to manage any discrepancies that may occur. Each member of the CSR committee shall carry out one CSR audit at a plant or sales office each year. The audits are a valuable tool to engage and discuss CSR issues with the organisation around the world and improving the understanding of issues faced as well as the best ways to solve them.





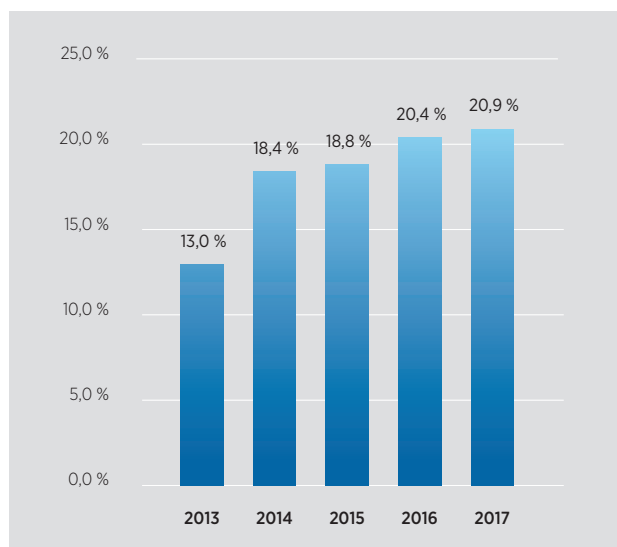
# Important milestone on the road to carbon-neutral metal production

Photo: iStock

Elkem's long term goal is to achieve carbon-neutral metal production. Several long-term R&D projects are in place to develop the necessary technology to reach this goal.

Meanwhile, Elkem seeks to reduce fossil CO<sub>2</sub> emissions by replacing fossil coal with biocarbon as a reduction agent in our smelting furnaces. Our initial target was to reach 20 per cent biocarbon for our Norwegian smelters by 2020. Reaching this target will reduce fossil CO<sub>2</sub> emissions by 310,000 tonnes per year, compared to production with 100 per cent fossil carbon.

Biocarbon as share of total reduction materials



In 2017, Elkem emitted 1,772,737 tonnes of fossil CO<sub>2</sub>, an increase from 2016 due to the inclusion of Elkem Rana. However, specific emissions of fossil CO<sub>2</sub> have gone down steadily, as Elkem has consistently worked to increase the use of biocarbon. This dedicated effort resulted in an important milestone, as we reached our 2020 target of using 20 per cent for biocarbon in Norwegian smelters in 2017.



The more biocarbon we use, the greater challenge it becomes, given current technology options. However, I am confident that we will be able to develop the necessary technology to reach our 2030 target of 40 per cent biocarbon - or even beyond.



Helge Aasen

This shows how cooperation between people at all levels of the organisation, from the operators who run the furnaces to the plant management, the procurement team, and the R&D specialists can accelerate sustainable change that is economically viable and good for the environment.



Based on highly developed production technology, Elkem converts natural resources into products that society needs. Resource and energy consumption and emissions are part of the process, but Elkem is committed to reducing the company's environmental footprint and becoming more energy efficient

With today's technology, the production of metals and materials on an industrial scale is not possible without the emission of various substances that can be harmful if not controlled. These include CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, PAH and dust. Elkem works continuously to reduce emissions and has dedicated R&D activities to reduce the emission of all major pollutants.



Photo: Richard Nodeland, Fædrelandsvennen

## New facilities reduce sulphur emissions and saves energy



In October, Elkem Carbon finalised its project to clean sulphur emissions from its calcination furnaces at the Fiskaa plant in Norway. The project had an investment budget of NOK 141 million and was co-funded by the Norwegian Environmental Fund and ENOVA.

When in full operation, the new facility will reduce sulphur emissions from the three attached furnaces by 99,4 per cent. Elkem Carbon's total sulphur emissions will thereby be reduced by more than 60 per cent, which equals 650 tonnes of SO<sub>2</sub>. The project also has the capacity to recycle 20 GWh of energy by reusing excess heat. The recycled energy will be used in production processes at the plant.

*– We are very happy with the new instalments. This is an important step towards a greener industry, both locally here in Fiskaa and globally, says Odd Olsen, Plant Manager at Elkem Carbon Fiskaa.*



Elkem's skilled and dedicated employees are the basis of our success. We strive to remain an attractive employer, both to retain talents and to attract new employees. Important areas of action are health and safety, training and skills development, as well as promoting equality and diversity.

#### Health and safety first

As an industrial company, Elkem has a strong focus on health and safety. Our work is based on a zero-harm philosophy. We do not agree that injuries or illnesses are unavoidable in our industry. Our statistics show without a doubt that it is possible to run operations with zero injuries. The status of Elkem's health and safety work is discussed every week at the group management level. Reporting and investigating all injuries are an important part of Elkem's improvement work. The total recordable injury rate for our employees in 2017 was reduced from 5.1 injuries per million working hours in 2016 to 4.5. The rate of absenteeism in 2017 was 3.5 per cent, down from 3.8 per cent in 2016.



## Eight years with no injuries



Elkem's plant in Shanghai has not had any recordable incidents since 2010. According to statistics, most injuries in the past happened because employees were not able to identify the possible hazards involved with their work.

- Our success is due to a close follow-up of FOKUS, Elkem's programme for environment, health and safety in the workplace. The training focused on identifying hazards and how to avoid them. This training is a compulsory requirement for all employees at the plant.

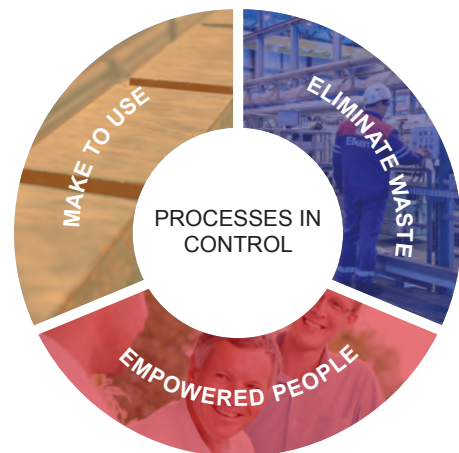
- We have a strong commitment from all employees to follow up on EHS work, says Lisa Li, Senior EHS Manager at Elkem Silicones Shanghai.



## A shared set of values, methods and goals

Elkem Business System (EBS) is Elkem's philosophy and method for continuous improvement and achievement of strategic goals. The system is designed both to improve customer satisfaction and to reach important targets on EHS, on-time deliveries, quality and cost efficiency. The EBS method and philosophy applies throughout the organisation, and training of our staff is vital to achieve success.

The EBS University Programme ensures that the work of our employees across the globe is based on the same values and principles, and that we speak the same "language". It also allows colleagues to participate in networking, and provides the opportunity for our employees to get to know other production sites or offices in Elkem. More than 1,100 people have been through the EBS University since 2001. In 2017 the EBS Centre trained approximately 220 employees, in programmes ranging from one-day workshops to weeklong EBS University programmes.





## A responsible neighbour

Elkem's business activities have a significant impact on local communities and society. As a large procurer of raw materials and capital goods, we strive to set a high standard for ethical conduct and social responsibility throughout our supply chain.

Elkem strives to be a responsible neighbour and to foster good and open dialogue with our stakeholders. Many of Elkem's plants are cornerstone employers and are of great importance to local communities, both in terms of tax incomes, jobs and community development. Most Elkem's plants have local initiatives to support better education, sports activities for children, better local infrastructure or other social programmes.



↑ In December 2017 the opening of Elkem Foundry Products' new plant in Ningxia, China, was attended by local government officials and dignitaries who have been involved in the planning of the project.

## Tech on Wheels in India

In Mumbai the organisation Masoom, a non-profit organisation establishing quality education in night schools, launched the Tech on Wheels program together with Elkem in 2016. The Tech Wheels bus is used for spreading science and technology education, life-skills program for boys and girls, a girls leadership program, spreading the importance of education in underprivileged communities, street plays and community awareness programs

Night school students in India are labourers aged 15 to 21, who work during the day to support their families and study at night to complete their education. They mostly live in slums and come from a poor background. The Tech on Wheels bus provides the students with access to online resources and innovative educational programming. The students also get an international outlook, by exchanging ideas and thoughts with students from USA, through video letters and Skype communication.



Photo: Masoom

In 2016-17 Tech on Wheels reached out to around 350 students in 16 schools. In 2017-18 the number of students were 400. In 2018-19 Masoom has plans to reach out to 800 students from 30 schools with the help of its partner organisations. Since the initiative started, Elkem has encouraged other companies to come forward and now a second Tech on Wheels bus has been launched.



## More structured process for supplier pre-qualification and risk assessment



To ensure a lean, structured and transparent process, Elkem recently entered into a partnership with a global supply chain risk management solution provider called Achilles. Key suppliers of hardware and services to plant operations and investment projects are required to qualify via this portal.

All suppliers and contractors must answer and document their performance within areas such as health, safety, environment, human rights, social responsibility and compliance with laws and regulations. Subject to Elkem requirements, external auditors will conduct supplier audits.

The system allows Elkem to monitor suppliers' compliance with Elkem's requirements and allows us to systematically register supplier and contractor performance. We can thus continuously develop suppliers or, if necessary, terminate those that do not meet our requirements. The system will be rolled out in the Nordic countries in the first half of 2018, and later will be expanded elsewhere. By 2020, the system will be rolled out throughout the entire Elkem organisation, so that all suppliers in scope must qualify via the portal.



## Sustainability targets 2018



### Reporting targets

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- Continue to refine materiality analysis with more comprehensive survey of external stakeholders
- Integrate the sustainable developments goals more into the report and consider reporting on selected targets



### Governance and compliance

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#### Long term goals:

- Train all employees at new plants and entities in corporate governance procedures:
- Code of conduct communication and signatures for all employees 100 per cent
- Anti-corruption training of target group 100 per cent
- Competition policy training of target group 100 per cent
- Compliance with laws and regulations – 0 deviations
- CSR audits carried out by CSR committee – 8 audits per year

#### Short term goals:

- Update corporate governance policies to comply with rules for listed companies at the Oslo Stock Exchange – implement in Elkem ASA



### Energy and environment

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#### Long term goals:

- Energy recovery increase year on year
- CO<sub>2</sub>-goal: on track to reach 20 per cent reduction of fossil emissions in 2020 and 40 per cent by 2030
- NOx goal: reduce emissions from Norwegian smelters by 1000 tonnes by 2025
- Indirect CO<sub>2</sub> emissions - stable year on year
- Zero major environmental spills / incidents

#### Short term goals:

- Elkem Fiskaa Carbon SO<sub>2</sub> scrubber and energy recovery unit fully operational by end of 2018
- Energy recovery project in Salten on track for completion in 2020



### Attractive employer

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#### Long term goals:

- Zero recordable injuries
- Zero cases of serious occupational illness
- EHS training of all new employees 100 per cent
- Increased female share year on year
- Development discussions 100 per cent

#### Short term goals:

- Map female share in internal governing bodies and start tracking



### Social impact

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#### Long term goals:

- 100 per cent screening of new suppliers for social and environmental criteria
- Training of target group on human rights 100 per cent
- Zero incidents involving violation of human rights in supply chain

#### Short term goals:

- Implement updated human rights clauses through training of target employees
- Implement templates and reporting procedures for more systematic stakeholder engagement
- Map community programmes at all plants and units
- Implementation of supply chain risk management IT application on track



DELIVERING  
YOUR POTENTIAL

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