

# Businessland 2021

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Germany's True North



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# DEAR READER,

John F. Kennedy pointed out many years ago that the Chinese use the same symbol for crisis and opportunity. The message here is clear – either during or as a result of every crisis, no matter how big, new possibilities and opportunities always arise. While this may sound easy enough, in reality, crisis situations are inevitably associated with enormous challenges and effort. They force us to question and, if necessary, abandon our tried-and-tested approaches in favour of bold, new strategies. We are currently experiencing this often painful process in many areas of our daily lives and in our economy. The coronavirus pandemic is massively accelerating the pressure for change; in some cases condensing the corresponding time frame from several years to just a few months.

For companies, this represents a huge challenge – but also an opportunity. And this is especially true for our SMEs. The recipe for success followed by SMEs in Germany's True North has always been: innovation, creativity, flexibility and speed. Qualities that are twice as important in view of the coronavirus crisis. For example, the fact that many SMEs are focusing

on the future despite the current adverse operating conditions is revealed by their degree of innovation. Indeed, seldom have we managed so many innovative projects and activities as we have done this past year. Adopting the motto "strategy beats pandemic", many companies have set out to rethink their positioning and adapt their existing technologies, products and services to the changed circumstances, or to explore new business fields altogether.

The topic of digitisation is playing a major role in all of this. In many organisations, new, digitally supported business models and the digitisation of external and internal processes as well as products and services are either being rolled out or developed.

In addition, the topic of sustainability has become a higher priority. Many companies are seizing the opportunity to make themselves and their business models more sustainable. This means becoming less dependent on external influences and thus improving the resilience of the business. However, it also includes ensuring that one's own operations are sustainable in the long run – whether in economic, ecological or social terms.

As the Italian writer Giuseppe Tomasi de Lampedusa put it some 80 years ago: "If everything is to remain as it is, everything must change." We are on the right path to achieving this.

Good luck!

Best regards



Dr Bernd Bösche

Dr Bernd Bösche, Managing Director  
of the Business Development and  
Technology Transfer Corporation  
of Schleswig-Holstein (WTSH)



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The team at Herose strives for perfection. Because nothing less will do - the safety valves manufactured by the hidden champions from Bad Oldesloe must withstand a temperature range of 670 degrees Celsius and pressures reaching 500 bar. This requires extreme engineering skill and innovation.

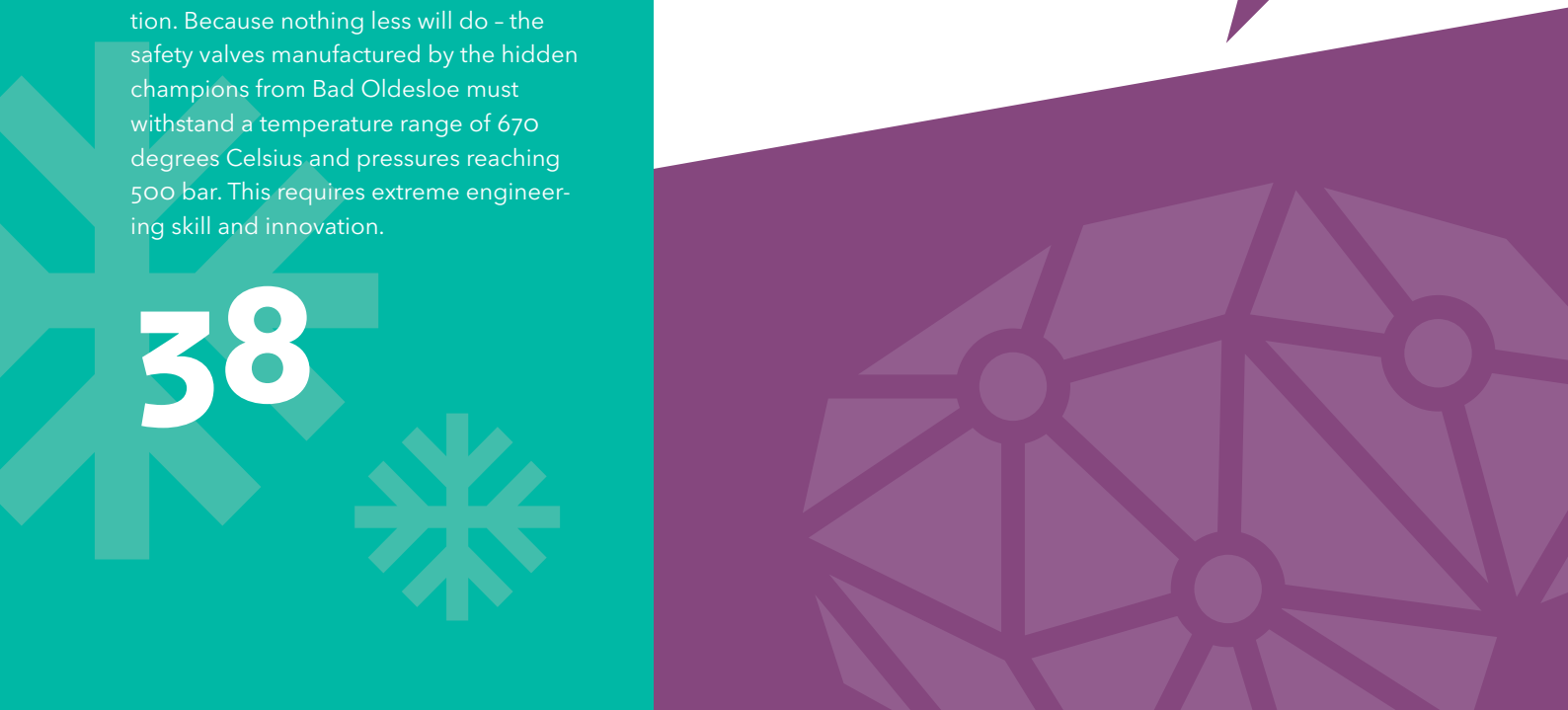
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## Natural intelligence

Artificial intelligence is rapidly gaining importance in almost all areas. And the global market is growing. In Schleswig-Holstein, the full potential of artificial intelligence is being exploited by our young up-and-coming creative minds in the fields of science, business and medicine.

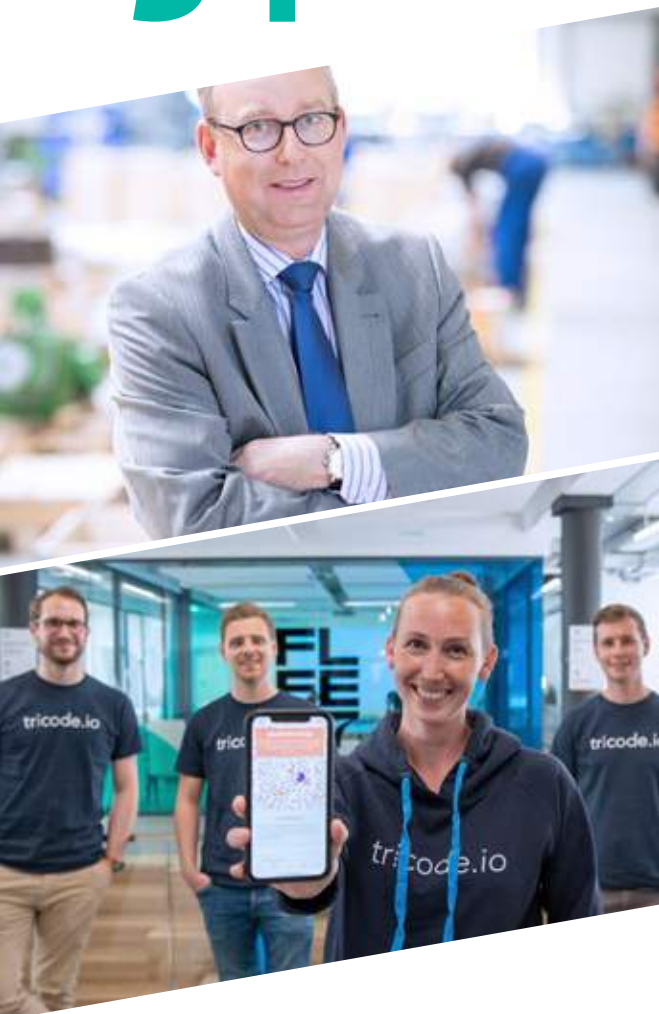
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# GREEN HYDROGEN

## FOR INDUSTRY, MOBILITY AND HEAT

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*Our high wind energy capacity makes Schleswig-Holstein an ideal location for the generation of green hydrogen. In our federal state, innovative solutions and technologies are being created to make use of this environmentally friendly energy source in various ways.*

Today, green hydrogen (H<sub>2</sub>) already powers cars, ferries, buses and refuse collection vehicles - and provides clean energy for industry. Sectors such as mobility, heat and industrial production could become more environmentally friendly and carbon-neutral by switching to this versatile energy source. With its national hydrogen strategy, Germany is making a clear statement that H<sub>2</sub> will play a key role in the energy revolution.

Business, industry and municipal initiatives across Schleswig-Holstein are the trailblazers in this field. They are demonstrating how hydrogen can reduce emissions of the greenhouse gas carbon dioxide and thus contribute to the decarbonisation of many processes. These diverse projects cover the entire value chain, from technology and power generation to storage, infrastructure and logistics, as well as numerous potential applications. By 2023, Schleswig-Holstein will provide up to EUR 30 million for these endeavours within the scope of its state-wide hydrogen strategy ("Wasserstoffstrategie.SH").



Save the Date:

**Hydrogen Week  
12-20 June 2021**

[woche-des-wasserstoffs.de](http://woche-des-wasserstoffs.de)

### TESTING THE INDUSTRIAL HYDROGEN ECONOMY

Heating, building and flying more sustainably by using green hydrogen - these are the current goals at the Westküste 100 real-world laboratory ([westkueste100.de](http://westkueste100.de)). The ten project partners plan to achieve this by setting up a regional hydrogen economy on an industrial scale and interlinking existing material cycles. To this end, the energy service provider EDF Deutschland GmbH, Holcim Deutschland, OGE, Ørsted Deutschland, Raffinerie Heide, Stadtwerke Heide, Thüga, thyssenkrupp Industrial Solutions, Heide Region Development Agency and FH Westküste University of Applied Sciences have joined forces to form a consortium. Schleswig-Holstein's project was the first of twelve to receive a funding commitment from the Federal Ministry of Economics and Energy. The first phase of the project has been allocated EUR 30 million in funding within the framework of the "Real-world laboratories for the energy revolution" (Reallabore der Energiewende) programme.

### ABUNDANT WIND POWER FOR GREEN HYDROGEN

Over the next five years, the project partners will build a 30-megawatt electrolyser to split water into green hydrogen and oxygen using surplus wind power, which would otherwise go to waste. In the longer term, the knowledge gained regarding operation, maintenance, control and grid efficiency of the system will provide the basis for the construction of a 700-MW electrolyser.

These considerations are based on Germany's True North's high generation capacity for wind power. Schleswig-Holstein can already produce around 8.5 gigawatts of electricity via wind turbines installed on land and at sea. The plan is to increase this number to 20 gigawatts in the coming years. *"Even in an international context, we have excellent local conditions here for the production and use of green hydrogen,"* explains Dirk Burmeister, board

member of the Heide Region Development Agency and initiator of the project. "As well as plenty of wind and excellent geological storage conditions, our region is characterised by committed industrial companies and strong political will combined with over 30 years of know-how and a pioneering spirit in the field of renewable energies."

### INTERLOCKING MATERIAL CYCLES

In a subsequent phase of the project, the plan is to build a branched hydrogen network for the transport of this green energy source between various project partners, including the refinery, municipal utilities and the existing natural gas network. For testing purposes, a hydrogen component of up to 20 per cent will be added to a network section that supplies customers in over 200 households. The long-term goal is an H2 component of up to 100 per cent in the gas network by 2050. To enable industry to use green H2 on a continuous basis, an intermediate storage facility in a naturally occurring cavern system is also being planned.

Furthermore, the oxygen produced during electrolysis could be used to make cement production more sustainable in the future. To this end, Holcim is investigating the possible use of the oxyfuel process at its plant in Lägerdorf, where the addition of oxygen is significantly reducing nitrogen-oxide emissions during the combustion process. At the same time, this means that the carbon dioxide - which is inevitably produced during cement production - is purer and can in turn serve as a raw material. For example, one goal is for it to be used in combination with green H2 to produce synthetic hydrocarbons at the Heide refinery, which will then be refined into environmentally friendly aviation fuel or chemical base materials such as methanol. And the resulting process heat will be fed into a heating network. However, the legal framework conditions still need to be adapted to allow competitive, long-term business models to emerge from these innovative hydrogen-based processes.

### FROM WIND TURBINE TO FUEL TANK

The same applies for the expansion of hydrogen mobility. In North Friesland, the eFarm project is building an H2-based infrastructure that encompasses generation, processing and fleet use. "We are the largest green hydrogen mobility project in Germany to date," emphasises Ove Petersen, managing director of GP Joule based in Reußenköge, and initiator of the eFarm sustainable hydrogen mobility project ([gp-joule.de/references/efarm](http://gp-joule.de/references/efarm)).

Green H2 is produced via wind energy at five locations, stored in mobile storage containers and transported by lorry to the H2 filling stations in Husum and Niebüll. It is then recompressed on site - a step that makes it possible to completely refuel an empty vehicle in only a few minutes. Fully fuelled with green H2, a bus can travel around 350 km (217 miles) and a car around 600 km (373 miles).



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On the H2 Mobility Hydrogen Sofa: Ove Petersen, co-founder and CEO of GP Joule GmbH during Hydrogen Week North (06-14 June 2020)

While this all sounds fairly simple, the project has actually consumed several years of development work at GP Joule. The company initially launched a feasibility study back in 2016 with support from the state of Schleswig-Holstein. The project received a grant of EUR eight million from the Federal Ministry of Transport and Digital Infrastructure within the scope of the national hydrogen and fuel-cell technology innovation programme (Nationales Innovationsprogramm Wasserstoff- und Brennstoffzellentechnologie). Among other things, two fuel-cell-powered buses were purchased for regional public transport. But they are just the beginning. The 20 or so investors involved in eFarm want to put more than 100 H2-powered vehicles on the road, from cars to HGVs.

As an additional goal, a modular, expandable hydrogen production and distribution network will be created in partnership with community wind and solar farms as well as companies and municipal utilities in North Friesland.

### ZERO-EMISSION SHIPPING

The question of which fuel will ultimately prevail in the world of shipping remains open to debate. "We expect to see a mix in which hydrogen will nevertheless play an important role," explains Thomas Ritte of Navalue GmbH. On behalf of the shipping firm HADAG, the Flensburg-based company is currently advising and supporting the construction of three H2-powered ferries for the Port of Hamburg.

The first step in the development of the new vessels is a propulsion-concept study. "The question of which fuel is the most suitable has different answers depending on the intended area and usage case. Furthermore, not all fuels are available everywhere and thus economical," explains Ritte.



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eFarm: green hydrogen will soon be available as a zero-carbon fuel at two purpose-built hydrogen filling stations in Niebüll and Husum

## GREEN HYDROGEN COMES FROM THE **ENERGY COAST**

If you want to make a difference in the energy revolution, western Schleswig-Holstein's "Energieküste" (Energy Coast) is the place to be. You won't find committees endlessly debating energy policy here. Instead, you will witness the birth of the energy system of tomorrow. To achieve this, business development agencies, industry, research bodies, associations and municipalities are all working together in a powerful network. The people,

initiatives and projects involved are united by a common goal - to create an energy system based 100 per cent on the generation, storage and further processing of renewable energy - from wind turbines to hydrogen, for use on an industrial scale. Our state's surplus green wind energy is providing the basis for new value creation in a wide variety of areas - from Germany's largest project for sustainable hydrogen mobility, "eFarm", to the

industrial processes at the "Westküste 100" real-world laboratory, and even the design of eco-friendly living quarters at the "Quarree 100" real-world laboratory.

[energiekueste.de](https://energiekueste.de)



**Energieküste**





Zero-emission shipping: experts from Flensburg are helping to build ferries for the Port of Hamburg

Increasing environmental awareness and the energy revolution are also driving technological advancements in the shipping industry. Ritte believes that more consistent progress by the automotive industry in this field could also accelerate the adoption of hydrogen as a marine propulsion system. Furthermore, innovations are already emerging faster than the official regulations for ship operation can be amended. As a result, the three HADAG ferries will also have to run on shore power and diesel for the time being – they will only become completely emission-free when their operation with hydrogen is approved.

### SUSTAINABLE HYDROGEN FROM WASTE

Infinite Fuels GmbH also plans to produce hydrogen via its EU-funded "LIFE CoWaCo" project – but from waste, rather than wind. The company has developed an innovative plant concept for precisely this purpose. The prototype is scheduled to go into operation in Borgstedt in mid to late 2022. *"We are combining existing methods to create a novel process that lets us convert organic waste and residual materials into hydrogen,"* explains managing director Andreas Noky.

Almost everything that consists of hydrocarbons can be used: organic waste, paper, wood, fermentation residues, as well as plastic and packaging waste. The waste in question comes from (among other sources) the waste management company Rendsburg-Eckernförde, which has been committed to recycling useful resources for many years. Via this new method, Infinite Fuels plans to produce 2,100 tonnes of hydrogen from 16,000 tonnes of waste per year. "This would enable a fuel-cell-powered bus to circumnavigate the earth over 500 times," explains Andreas Noky. The "waste-to-fuel" concept also has an important side effect – in the future, it will help to reduce combustion waste and nitrate pollution from sewage sludge and liquid manure, both on the fields and in the food chain.

### KNOWLEDGE TRANSFER

The various clean-energy projects on the west coast have turned this area into a technological hot spot for the generation and use of renewable energy. To ensure that this new expertise can be transferred and used to establish companies in the region, the FH Westküste University of Applied Science is establishing a national interdisciplinary research and transfer centre for technologies linked to the energy revolution, which is also open to collaboration with international research groups. The "Campus100" project is being largely funded by the EU and the state of Schleswig-Holstein – its goal is to create the infrastructure that will enable our region to play an even bigger role in projects related to the energy revolution.

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### HYDROGEN ECONOMY SCHLESWIG-HOLSTEIN COORDINATION OFFICE

As part of the hydrogen strategy for the state of Schleswig-Holstein, the decision was made to establish the State coordination office for the hydrogen economy in Schleswig-Holstein (Landeskoordinierungsstelle Wasserstoffwirtschaft Schleswig-Holstein). Its purpose is to help initiate and support projects and partnerships linked to the hydrogen economy. Beyond this, its mission also includes creating transparency about these diverse activities and enabling the respective stakeholders to network with each other. Knowledge management, networking and location marketing for Schleswig-Holstein as a hydrogen hot spot round off the remit of this new agency, which is based at the WTSH. Lastly, it is also responsible for managing the state's hydrogen-economy funding programme on behalf of the state. As a first step, it has already published a hydrogen funding guide for Schleswig-Holstein ("Wasserstoff-Förderwegweiser Schleswig-Holstein"), which is available online at [wasserstoffwirtschaft.sh](http://wasserstoffwirtschaft.sh). The guide lets interested parties quickly find the right funding programme for individual hydrogen-based projects. (br) //

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As a child, she dreamed of being an astronaut. Instead of floating in orbit, Dr Sandra Hansen now heads the battery laboratory at Kiel University. Thanks to her innovative use of silicon, major advances in electromobility are gradually becoming reality.

**Kiel-based researcher Dr Sandra Hansen is revolutionising battery technology for electric cars**

# FLASHES OF GENIUS IN SILICON

The sign that hangs behind her desk at Kiel University's faculty of engineering proclaims, besides a friendly "Welcome", that: "You can't change the wind, but you can set the sails correctly". This mantra has evidently shaped the 33-year-old's life every bit as much as the battery research she heads at the university's department of functional nanomaterials. "I always wanted to develop things," says Sandra Hansen enthusiastically. "Why are mobile phones getting smaller and smaller? How does the heat shield

of a space shuttle work? Many such questions ultimately come down to the invention and development of special materials."

Instead of space, the Rendsburg native decided to get to the bottom of earthly materials: "**Materials science combines my favourite subjects: maths, computer science, physics and chemistry,**" says Sandra Hansen. Moreover, she says that this subject constantly deals with fascinating, practical applications. Therefore, in

2007 she began studying for her Bachelor's degree in this male-dominated field at Kiel University. "I was one of three women among 20 freshmen." The young engineer also completed her Master's degree, and her subsequent doctoral thesis earned her the faculty prize for best dissertation.

It dealt with nothing less than a medium-sized revolution in electromobility - the idea of using silicon, the second most common element on

earth, as abundant as “sand by the sea”, as a storage material for batteries. What may initially sound unspectacular to laypeople certainly made the experts sit up and take notice when she presented her innovation at the Hannover Messe in 2018. Together with her team, project leader Hansen had successfully harnessed the potential of this substance. **“We have developed a silicon anode that can store ten times more energy than the graphite anodes used in today’s lithium-ion batteries.”** The technical possibilities here have sparked the imagination of engineers and companies alike. For example, the range of electric vehicles could potentially be increased from around 300 km to 1,000 km or more. Power-hungry smartphones could also operate for several weeks between charges.

The decisive factor, according to Hansen, is making these groundbreaking innovations available to people. **“Our focus now is on ensuring that our technology can also be used industrially,”** emphasises the researcher. “At the institute, we have successfully subjected a battery based on the new technology to over 500 charging and discharging cycles.” In other words: the technology works. Indeed, Hansen managed to solve one particular problem in her doctoral thesis: “Silicon expands by 400 per cent during charging, which would cause it to shatter. We found a method to optimise the storage capacity by selectively structuring the surface at the micro level.” This involves applying fine microwires next to each other on the material’s surface, which can expand and contract as required. The university has already patented the process.

Word of these silicon-based flashes of inspiration has long since spread among expert circles – and has even reached the ears of the state government. In July 2020, Schleswig-Holstein’s Minister-President, Daniel Günther, visited Hansen and the other scientists at the faculty of engineering to learn about their research in the battery lab.

**The head of the state government also brought good news in the form of a long-awaited state grant of EUR two million.**

“By providing equipment for this state-of-the-art laboratory, we are creating the optimal conditions for cutting-edge research, including across multiple institutions,” said Günther.

In the new laboratory for “reliable battery-based energy conversion” (BAEW), two working groups from the fields of materials science and power electronics are jointly researching new technologies linked to the

energy revolution. Sandra Hansen manages the facility and her team of ten scientists. **“We want to show that manufacturing on an industrial scale is possible and that the costs can be further reduced,”** she explains. “In our lab we can test and optimise the efficiency and service life of the individual components as well as the entire battery system.”

In the meantime, the visionary researcher has already begun thinking ahead; she intends to find new ways to solve existing problems in battery technology – by supplementing the system with a sulphur cathode, which also offers enormous storage capacity. “We’re working on a battery technology that, unlike the lithium-ion battery, no longer requires the use of rare earths.” Recently, China’s quasi-monopoly on this coveted raw material has become a global political issue.

But what about her childhood dream of outer space? “Powerful batteries are also needed in space travel. Just think about the Mars Rover,” says Sandra Hansen with a wink. She may yet fulfil her lifetime’s ambition – without ever leaving terra firma. (wel) //

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*Minister-President Daniel Günther visits Dr Sandra Hansen at the University of Kiel’s Faculty of Engineering*





Well-versed in the potential of artificial intelligence - the developers of the "IO-ELON" charging and fleet management system for electric cars: Nabil Imran, Johann Olsen and Felix Kruse

# ARTIFICIAL INTELLIGENCE:

## WITH A "CAN-DO" MENTALITY

*Artificial intelligence (AI, in German KI) has already changed our lives forever. For some time now, however, the as-yet untapped potential of AI has been explored, tested or directly put into practice in Schleswig-Holstein. While this is in part due to the nordic "can-do" mentality, it is also being facilitated by Schleswig-Holstein's status as an optimal breeding ground for the development of innovative, intelligent applications.*

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In the centuries to come, how will researchers in the fields of sociology, economics or history characterise the current era?

One thing is already clear - artificial intelligence is proving no less groundbreaking than the steam engine was around 200 years ago during the Industrial Revolution. AI is helping to make daily life and business more efficient, simpler, more sustainable and more resource-efficient. It is also rapidly gaining in importance in almost all areas: transport, medicine, production. And the global market is growing.

According to a McKinsey study, the field of AI-based software, hardware and services is currently growing at a rate of 25 per cent annually.

Why? Because AI is both adaptable and scalable. It replicates human behaviours and perception - and thus fits seamlessly into our daily lives and experiences. In doing so, it no longer merely helps us to manage routine tasks in an automated and resource-saving manner. Increasingly complex tasks can also be accomplished thanks to self-learning software. And acceptance of AI is growing. According to a study by the digital association Bitcom, more than two thirds (68 per cent) of Germans view AI as an opportunity. Three years ago, this figure was 48 per cent.

However, the full potential of AI remains dormant - according to another Bitcom survey, just six per cent of companies use AI. Nevertheless, AI's period of awakening has long since begun - and will determine who can gain a crucial edge on the market in the coming years.

*"Artificial intelligence is the steam engine of the 21st century",* says Dirk Schrödter, head of the Schleswig-Holstein State Chancellery. "The use and application of AI technologies will have at least the same kind of impact on our economy and society as the Industrial Revolution did 200 years ago. We intend to use these opportunities to generate value for our state and to create jobs."

### **AN AI STRONGHOLD WHERE SOMETHING SPECIAL IS HAPPENING**

Multiple disciplines and institutions in the field of artificial intelligence have turned Lübeck into an AI hot spot. The city's university, technical university and businesses are already working hand in hand, with several AI-related professorships providing the scientific impetus. There is even more going on behind the scenes - the DFKI, a renowned research centre for artificial intelligence, has recently based itself at the university. Its main focus area is the use of AI in the fields of medicine and medical technology. The state is supporting the centre with a grant of EUR three million until 2023.

## **INTELLIGENT NETWORKS IN GERMANY'S TRUE NORTH**

Having long since recognised the potential of artificial intelligence, Germany's True North has already set the wheels in motion via the state's AI strategy. In which direction? Towards becoming Germany's leading location for AI research. Many locations across Germany's True North are already developing innovative AI-based solutions to meet the challenges of our time - and Schleswig-Holstein is now expanding this endeavour. The new goal is to ensure that the potential of AI can be transferred more efficiently to small and medium-sized enterprises. A new project is helping to achieve this: the KI-Transfer-Hub Schleswig-Holstein. The state recently launched this joint network together with the WTSH, the universities and the UniTransferklinik Lübeck.

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Its purpose is to enable companies to make better economic use of AI technologies and benefit from the know-how gained via the latest research. The idea is that research results should flow to where innovative products, applications and solutions are being developed, i.e. to small and medium-sized companies. On the one hand, this expertise will be transferred in the form of further training, and on the other, through individual partnerships with companies.

The KI-Transfer-Hub project has secured funding of around EUR three million and is planned to run until 2023.

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**kuenstliche-intelligenz.sh**

**K | TRANSFER-HUB.SH**

In total, AI development in the true North has received around EUR 40 million in funding. The government of Schleswig-Holstein has earmarked EUR 14.5 million for AI research from a special fund. A further EUR 25 million will follow, courtesy of the state's coronavirus stimulus package. In addition, since 2018 the state has been funding an endowed professorship for "E-Government and Open Data Ecosystems" at the University of Lübeck via an annual grant of EUR 250,000, which will continue until 2022. The new department is focusing its research on innovative solutions for public administrations.

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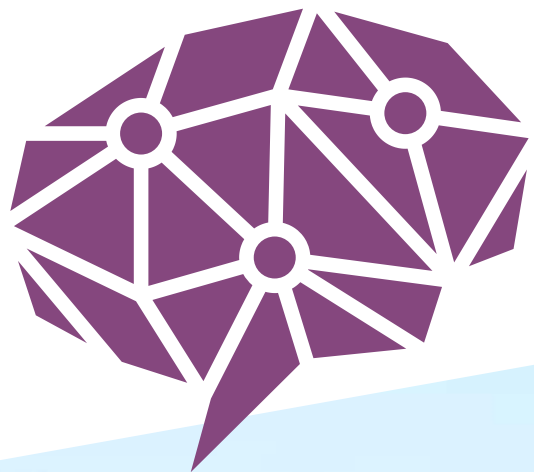
### INTELLIGENT DESIGN FOR INTELLIGENT MINDS

Anyone studying for an examination, whether during an apprenticeship or advanced training, knows that understanding subject-specific content is only part of the picture. For example, coping with time pressure, exam management and the challenge of revising what has been learned are all key ingredients in the recipe for exam success. Joanna Marciniak, a newly qualified psychological psychotherapist, was searching for educational software to help her study for her final exams alongside her day job as a psychologist. She came away empty-handed. However, computer scientist Malte Hecht found this unacceptable. Without further ado, he promptly developed a prototype, which the team then continued to develop with their testers, and later with their customers.

The resulting intelligent educational software is called SIGGI, and for a good reason – it is named after none other than Sigmund Freud. And like its namesake, it has the potential to create a stir both in and beyond the world of

psychotherapy. This educational software created by Joanna Marciniak and Malte Hecht not only helps therapists during their training, but can also be transferred and applied to other fields thanks to the use of AI. The software's potential is virtually unlimited for all kinds of exams – whether hobby-related certificates, vocational school qualifications or professional development activities in companies. *"We want to do away with dull cramming,"* says Joanna Marciniak. Malte Hecht adds: *"And make targeted exam-related learning as sustainable and efficient as possible".*

The corresponding question catalogues can be easily integrated into the software and thus adapted to the relevant subject area. The front end can also be adapted to incorporate the examination provider's corporate design, making it possible to create a completely new learning app in just a few days. The software gets to know the users,



More efficient learning: SIGGI, the intelligent educational software created by Joanna Marciniak and Malte Hecht, gets to know its users and can thus respond to each learner's strengths and weaknesses





Co-founders Johann Olsen and Nabil Imran during a self-test of their intelligent software

recognises where their individual weaknesses lie and provides efficient and targeted learning support. The learning process is made significantly easier by an automatic exam management feature and the ability to create individual learning plans and add links to reference books - all in all, an impressively forward-looking concept given the present need for continuous training amid the relentless flow of new technologies and developments.

## THE ENERGY REVOLUTION - INTELLIGENTLY MANAGED

A young company is driving the energy revolution forward with the help of AI. IO-Dynamics in Flensburg has developed a charging and fleet management system for electric cars that makes electromobility more efficient and practical. "The transport and energy revolutions are two huge market disruptors that will change everything. We aim to help create a perfect symbiosis between the large batteries in electric cars and the fluctuating generation of renewable energy by creating the optimal control system," says Johann Olsen, managing director of IO-Dynamics.

For electric vehicles, the system in question, called IO-ELON, collects data on the battery's charge levels, charging capacity and battery health, and combines this with information on driving profiles, electricity prices and, if applicable, self-generated electricity while driving. "For example, the system determines when it makes sense to charge a car - i.e. in the middle of the day for self-generated solar power. Companies that use flexible electricity tariffs based on renewable energy sources should also charge their fleets at the optimal time. IO-ELON does this fully automatically."

The respective charging processes are controlled automatically via the centralisation and networking of data, which in turn ensures that energy is used optimally for the entire vehicle fleet. This not only means that the vehicles are always ready for use without needing to be charged at

public charging stations, but also saves time and reduces costs. "By charging the battery slowly and only to 80 per cent, I can double the life of an electric car," explains Olsen. *"Nature is very efficient. We believe that adapting these processes as required and using them efficiently is the best way of doing business."* IO-ELON is currently in the testing phase with pilot customers. Its official market launch is planned for the second quarter of 2021.

## SMART GUIDE

AI is not only playing an increasingly important role in the economy - it also harbours enormous application potential in administrative bodies. "Nordi", a chatbot that guides people through the jungle of official red tape, is showing how this is possible. Nordi is a digital AI-based dialogue system that answers questions from citizens and businesses alike on topics such as passports, schools, certifications and similar administrative issues.

Nordi is currently in use in Norderstedt and can also display addresses and suggest appointment bookings - it is far more than a simple search tool. Naturally, the chatbot was developed in Germany's True North, by the IT company Assono. The bot is already handling 10-20 per cent of the enquiries received daily, which have increased sharply since the start of the pandemic. This frees up staff to deal with higher priority tasks and is helping the municipal authority to provide a better service for its citizens. The goal is for the bot to process entire applications automatically in the future.

## SMART CULTURE

Alongside the fields of mobility, medicine and education, artificial intelligence is also proving a good fit for cultural institutions. A joint project by Kiel University of Applied Sciences and the State Library is researching the opportunities and risks of AI applications in cultural contexts, and developing AI-based applications and infrastructure for cultural institutions during their digital transformation. After all, digitisation has long since arrived in the cultural sector - and is an essential criterion for survival in times of crisis.

Although artificial intelligence has already begun to permeate these organisations as a key technology, the field still harbours huge potential that requires further research and development. Germany's True North is ready for this challenge in every respect. (eli) //





What happens after the coronavirus crisis? This question was asked at mworks GmbH in Uetersen, triggering a profound process of change.

BRAVE NEW BUSINESS WORLD

# OUR SMES IN THE WAKE OF

**Politicians have taken unprecedented steps to combat the current COVID crisis. The measures introduced to slow the spread of the virus have had a direct and immediate impact on all companies - from large corporations to small and medium-sized enterprises. This is not the first economic crisis that we have experienced. And it will not be the last. However, this one is different.**

It is probably appropriate to divide the current timeline into two periods: before and after COVID. In 2020, social and economic activity was subjected to radical restrictions of a kind never seen before. At certain times, economic life virtually came to a standstill - supply chains, sales markets and turnover collapsed overnight, companies were left reeling as large swathes of their workforce were suddenly required to work from home and/or put on short-time working. Unlike the financial crisis of 2008, whose impact on the SME sector was only felt some time later, the coronavirus pandemic has impacted these businesses abruptly and radically. For the first few months, the focus was simply on coping with the crisis, and then getting used to operating under exceptional circumstances. However, the question now being asked is: "what happens next?" Has the SME sector already changed? Can new developments



be identified? And what might define the new, economic reality in the SME sector? In Germany's True North, these questions are being explored at various levels - in both theory and practice.

### FLEXIBLE SMES IN TIMES OF CRISIS

While the coronavirus pandemic is certainly something new in terms of its sheer size and scale, there have always been times of crisis - and formulas to successfully overcome them. "As the old Chinese saying goes, when the wind of change blows, some people build walls, but others build windmills. Traditionally, SMEs tend to belong to the guild of windmill builders. Flexibility, efficiency, creativity and a willingness to change are their key attributes," says WTSH managing director Dr Bernd Bösche. And this remains the case in the current pandemic. Based on a solid average equity ratio of 39 per cent (source: Statista), many SMEs have been able to develop and implement a forward-looking strategy. Coupled with short decision-making paths, high employee loyalty, a willingness to take risks, and entrepreneurial courage, SMEs differ from the rigid decision-making structures of large corporations and therefore have the potential to grow during - and indeed as a result of - a crisis. And this is a particular strength of Germany's True North - more than 99 per cent of all companies in Schleswig-Holstein are SMEs. It is therefore hardly surprising that a large number of these businesses have quickly adapted to the changes in demand and successfully switched to producing in-demand products on an ad-hoc basis. SANI GmbH in Borgstedt, for example, expanded its product portfolio to include hygienic airlocks, while



Filling a gap in the market: Weihe GmbH, a provider of system solutions in the field of special plant engineering, is defying the crisis with a mix of innovation and investment power.

is the only way to ensure that companies can respond effectively to new crises and shocks, and thus be prepared for the future." Furthermore, many SMEs believe that this future will take the form of a very different economic reality - characterised by increased volatility and a greater susceptibility to external influences. Indeed, some companies have already reacted to this prognosis by repositioning themselves accordingly.

### WEIHE PLOTS A NEW COURSE

For the first time since 2014, the number of companies willing to invest in the future has slipped below the 50 per cent mark. However, while many businesses either chose or were forced to suspend planned investments to ensure short-term solvency, the crisis has also awakened new reserves of inventiveness and creativity, as well as the courage to implement new technologies. This is certainly the case at Weihe GmbH. For over 30 years, the Altenholz-based company has supplied heat-exchanger and marine-cooler system solutions, as well as exhaust-gas technology and specialist systems, to plant engineering and engine manufacturing companies around the world. Its sales slumped by around one third due to COVID. Nevertheless, Weihe has invested half a million euros in the construction of a new production plant at its Altenholz site. This, in turn, has unlocked an entirely new business field: the construction of mobile ORC compact power plants (ORC = Organic Rankine Cycle). These systems are suitable for use wherever large amounts of waste heat are available. They enable Weihe's customers to produce electricity autonomously in situ, for example in crematoria, power plants, biogas plants and other industrial applications.

# COVID-19

Nortex and Oerlikon in Neumünster produced masks. The respective sales channels and marketing activities were adapted just as quickly. Despite the enormous challenges, our SMEs have exploited their greatest strengths, i.e. flexibility and adaptability - and delivered solutions.

### A STRATEGY TO BEAT THE PANDEMIC

Germany's True North's SMEs have always been and remain driven by their ability to find solutions outside their comfort zone. For some time now, this special kind of out-of-the-box thinking has been propagated via different models and technologies. However, the coronavirus crisis has highlighted the fact that SMEs harbour considerable potential in this respect. **"In the future, this approach based on solutions outside of traditional business models will become increasingly important,"** says Bösche. "This

Besides Weihe's specialist expertise, production of these mini power plants also requires sufficient space for assembly, which its new production hall will provide. The key innovation is the fact that these mini power plants are based on the ORC principle, whereby an organic liquid evaporates at low temperatures and drives a generator that produces electricity.

This process was further developed by the Munich-based company Orcan Energy, with which Weihe is now collaborating as a production and distribution partner. And demand for the containerised power plants from Altenholz is high - twelve units are currently being built, and around 60 per year can be produced in the new facility. Weihe's customers receive a finished module that can supply around 1.7 million kilowatt-hours of electricity per year under optimal conditions. According to the company, this is enough power to supply around 500 households for a year under good conditions. ***"We don't just view the topic of sustainability as a matter of value creation, but also as our duty to ensure a more sustainable future. We want to play a part in making the world a little bit better,"*** says managing director Axel Weihe.

***"Without this investment, we would have had a much harder time overcoming the coronavirus crisis."***

Axel Weihe,  
Weihe GmbH

Indeed, Weihe is a good example of how companies that dare to venture off the beaten track and establish new business models and products can emerge from the crisis faster and in better shape. With its mini power plant, Weihe now offers a completely new product, which in turn opens up the possibility of entering new markets.

However, while a diversification strategy of this kind offers growth potential, it also entails certain risks. Nevertheless, as Axel Weihe succinctly puts it: "Without this investment, we would have had a much harder time overcoming the coronavirus crisis." With no funding available, partially due to the time pressure, Weihe managed to get their new endeavour over the line using their own financial resources. However, to make it easier to withstand future crises, Axel Weihe would like the available funding to be more carefully targeted - especially for small and medium-sized enterprises. The coronavirus, he adds, has made this very clear once again. Nevertheless, the bottom line is that Weihe, when faced with the coronavirus crisis, had the courage to make the necessary changes.

## INNOVATION FUNDING IN 2020 IN FIGURES

The funding distributed via the various innovation funding programmes increased by 180 per cent in 2020. The WTSH, for example, approved around a third more funding projects in the area of business innovation than in the previous year. And there were twice as many funding projects for in-house process and organisational innovations (POI). While around EUR 17 million were approved for innovation funding projects in 2019, this figure reached almost EUR 50 million in 2020.

More information is available at  
**[wtsh.de/foerderprogramme](https://www.wtsh.de/foerderprogramme)**

We foster the economy



Regional Economic Programme: Funded by  
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Government and Land Schleswig-Holstein

## THERE IS NO SWEEPING CHANGE WHEN TIMES ARE GOOD!

Just like in our personal lives, change often only comes about through external events and crises. As a result, we finally get to grips with issues that were already long overdue. "When things are going well, we are less prepared for change - the same applies to innovations in all areas of a company," explains Dirk Müller, professor of innovation management and spokesman for the Jackstädt Center in Flensburg. ***"Reinventing yourself, adopting a new mindset, this is not possible when the day-to-day business is operating at full capacity."*** Long periods of success and a strong economy can even make innovation appear unnecessary. Therefore, every crisis also reveals past failures by highlighting innovative activities that were not previously pursued with sufficient conviction, even though they were both possible and necessary.

"The difference between strategic and less strategic companies can be seen by the fact that the former embrace change and innovation when things are going well, instead of waiting for external pressures to force their hand. By then it may already be too late," says WTSH managing director Bösche. One example of an overly hesitant approach can be found in the automotive industry, which failed to adapt to the coming mobility revolution and the trend toward electromobility when times were good. Now - compounded by the impact of the COVID crisis - the industry is struggling to surmount enormous challenges. The extent to which the current crisis will strength-

en companies' future viability depends not only on their ability to cope with temporary losses or declining profits, but also on how open these companies are to innovation.

However, it is not yet too late. The coronavirus pandemic has shown that it is possible, even while under pressure, to undergo technological change and bring new products to market with short lead times – especially in SMEs. **“I expect that the idea of innovation will become even more important and that, in future, innovative processes will become more agile,”** says WTS Project Manager Digitalization Felix Gebauer. “In addition, numerous companies in Schleswig-Holstein have recognized that their in-house R&D activities are essential for future positive growth,” confirms Dr Ronny Marquardt, Head of Financial Assistance Programs at the WTS. He believes that this is reflected in the increased demand for research and development (R&D) projects within the framework of the state's innovation funding programmes. “We can confirm that in 2020 many companies attempted to innovate at short notice and very intensively,” reports Marquardt.

#### CORONAVIRUS AS AN INNOVATION DRIVER

Foilsquare Werbetechnik GmbH, a young Rendsburg-based company that produces and applies foil stickers and lettering primarily for public transport companies, is showing how crises can be exploited and used as an opportunity for growth. **“Suddenly, we were faced with a ban on access to all depots in the country and a massive drop in our core business,”** says Lasse Brehm, managing

Innovating a path through the crisis: Lasse Brehm, managing director of Foilsquare Werbetechnik GmbH



director of Foilsquare GmbH. **“We were also left wondering what to do about it.”** Realising that it had printing presses, foils and plotters available, transport companies as customers, and that the public buses were still running, this question was soon answered. “We asked ourselves, which of the current problems can we solve?” The company's answer was the “D-Shield”, a sturdy polycarbonate protective screen that is permanently installed inside buses where it provides droplet protection. With its new product, Foilsquare is helping to combat a drastic slump in bus-ticket sales – a major source of revenue for many transport services. Brehm recalls the early days of the pandemic: “The drivers' areas had been cordoned off, no one was allowed to board the bus at the front, so ticket sales collapsed.” The Foilsquare panels are now being delivered throughout Germany and Austria. Feedback from transport companies has been consistently positive.

**“Public transport is now safer. It's great to see our product really doing some good.”**

Lasse Brehm,  
Foilsquare Werbetechnik GmbH

#### POOL KNOW-HOW, COOPERATE, SOLVE PROBLEMS

However, the journey to success was by no means easy. “We were able to cut and bond foils, but we had never worked with harder materials before,” says Brehm.

Placing established approaches under the microscope and developing new products requires courage and a willingness to take risks – and often involves collaborating with other companies to compensate for a lack of in-house expertise. This was also the case with Foilsquare.

Through various contacts, Brehm had heard about Hansen GmbH in Haselund – a manufacturer of professional LED products and wholesaler that was also active in the field of advertising technology. A productive partnership was promptly established, whereby the new product only became viable thanks to a symbiosis of both companies' expertise. “We developed the D-Shields as a permanent, stable solution to replace the various temporary measures made from plastic sheeting and barrier tape that were often seen on buses at the start of the pandemic.” A fact that leaves the manufacturers from Germany's True North with a good feeling: “Public transport is now safer. It's great to see our product really doing some good.”



## INNOVATION THROUGH DIGITISATION – FROM IDEA TO MARKET

The WTSH innovation consultants help companies to implement changes systematically. This includes:

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- Identifying digitisation needs and potential
- Creating a roadmap for digitisation projects
- Prioritising digitisation projects
- Exploring funding opportunities
- Finding possible cooperation partners

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### VALUE AND SUPPLY CHAINS RESHUFFLED

The high demand and the fact that polycarbonate was previously a comparatively rarely used material meant that Foilsquare also had to quickly readjust its supply chains. While the polycarbonate was initially sourced from a Swedish supplier, the latter quickly reached the limits of its capacity. However, responding quickly to new challenges had long been part of the corporate philosophy at both Foilsquare and Hansen – so they found a solution in Geestacht, which also happens to be in Schleswig-Holstein. The company KRD Sicherheitstechnik GmbH (brand name “Kasiglas”) now processes the coated polycarbonate, for which demand continues to rise, directly on site. “By establishing a partnership with our new supplier, we have also secured sufficient quantities of material,” says Martin Hansen, managing director of Hansen GmbH, whose coronavirus-protection screens are now 100 per cent

manufactured in Germany’s True North. The company has thus safeguarded its delivery capability – and shown that it can think on its feet.

While the coronavirus pandemic may have highlighted the benefits of doing business within one’s own region, this does not mean that international networking is now passé. Instead, attempts are increasingly being made to diversify value and supply chains and sales markets, as well as to ensure fair international trade. **“It’s particularly important for smaller companies to open up additional procurement or sales markets. By doing so they can reduce the risk of disrupted supply chains or lost sales,”** says WTSH Foreign Trade Consultant Christian Decker. Local and national suppliers, as well as those in neighbouring countries with shorter delivery routes, are becoming increasingly attractive.

Gone, too, are the days when procurement relied on a relationship with a single supplier. No company will tolerate such a risk, especially given their experiences during the current crisis. And Foilsquare is showing them the way.

However, purchasing and production are not the only factors that will determine a company’s ability to survive the crisis. A corporate infrastructure that can function independently of external crisis influences is also crucial. This is obvious when it comes to the topic of digitisation, which has become above all an indispensable part of daily business.

### THE CRISIS IS ACCELERATING DIGITISATION

While digital technologies have gradually found their way into products and processes in recent years, the coronavirus pandemic is now encouraging a radical rethink.

**“All of a sudden, the digitisation requirements at SMEs have been intensified,”** says WTSH digitisation expert Felix Gebauer. Now, everything is being put to the test across the board: process optimisation, data processing, customer management, communications. **“Now is the time to take consistent action and proceed in a structured manner to advance digitisation within the company and shape the future,”** says Gebauer. Despite the fact that digitisation poses major challenges for smaller companies in particular, we are now seeing an increasing number of firms implementing digitisation projects and even accelerating their progress via interdisciplinary project teams with the support of management. Overall, I think our companies are on the right track,” says Gebauer.

### SYSTEMATIC DIGITISATION

Oemeta GmbH has stepped up its digital transformation in the midst of the crisis. The family-owned company based in Uetersen has been developing, producing and supplying high-quality lubricants for the processing of metal, glass and ceramics for over a century. Oemeta decided

to carry out a WTSH digitisation check, whereby the focus was on product development, production, organisation and technology. Working alongside the WTSH innovation consultants, digitisation-related goals and fields of action were identified and defined within the business.

The central result was a roadmap in which specific activities were recorded. This roadmap is now helping Oemeta to maintain an overview of the various digitisation processes and tackle each step in the right order. "We can now define our ideas and activities more clearly and prioritise them better," reports Andrea Rave of Oemeta Chemische Werke GmbH. "This dialogue has decisively aided our transition from being a supplier of high-quality chemical products to one that can combine these products with digital services in a way that achieves maximum sustainability in terms of product use."

**"Our dialogue with WTSH Innovation Consulting enabled us to take a major step forwards."**

Andrea Rave,  
Oemeta Chemische Werke GmbH

## CORONAVIRUS - AN OPPORTUNITY FOR SUSTAINABILITY?

Sustainability was already part of many SMEs' business models long before the coronavirus pandemic. For many companies today, sustainability is associated with increased value creation and social responsibility. With its 2030 Agenda, the European Union is providing additional impetus towards achieving the UN's 17 strategic sustainability goals and making Europe a pioneer in the field of sustainability. This also represents a major opportunity for small and medium-sized enterprises in particular. **"This opportunity lies in reducing the company's susceptibility to crises and securing corporate success in the long term through sustainable business models and production conditions,"** explains Dr Bernd Bösche.

To ensure sustainable development, the key term is "crisis resilience". Investments in this area are worthwhile in the long term, because firms that rebuild their structures along the lines of sustainable management are preparing for future crises and thus ensuring their economic stability. "Small and medium-sized enterprises in particular that want to be able to recognise and use these trends and opportunities at the right time, for example digitisation and sustainability, must increasingly and systematically address future issues and tackle them strategically," advises Professor Dirk Müller. "Leaving things to chance is not a solution."

**Read more about sustainability in SMEs from page 34.**

## SHARPENING STRATEGIC FORESIGHT

Support in this area is available thanks to a project called "Pioneers of the future - strategic foresight in SMEs" (Vorreiter Zukunft - Strategic Foresight in KMU) at the Flensburg University of Applied Sciences, which is being rolled out in tandem with Schleswig-Holstein's cluster management initiative. **"We guide SMEs through the systematic examination of their future developments and trends,"** explains project manager Beate Panitz.

For some time now, corporations with their own foresight departments have been relying on conventional tools and methods. Now, however, trend analyses, roadmaps and scenarios are becoming viable methods and instruments to plan for the future, including for SMEs. The new approaches allow changing customer needs and technological developments to be identified ahead of time. In this way, services and products can be developed that precisely fit the new requirements - and thus a considerable competitive edge gained. "From March 2021 we will launch our qualification programme," says Panitz. "Then we will help the cluster companies in Schleswig-Holstein to plan for the future."

Looking ahead: Beate Panitz, project manager at the Dr Werner Jackstädt centre for entrepreneurship and SMEs in Flensburg



**“Without the coronavirus, we would never have gone down this path. Now we’ve taken the plunge and we’re going to take full advantage of our co-working space.**

Lars Kobialka (left),  
Managing director of mworks GmbH



An SME with can-do qualities:  
Graduate engineer Lars Kobialka  
(left), managing director of mworks  
GmbH and co-founder Sebastian  
Dröber, IT entrepreneur

## BRAVE NEW WORLD OF WORK

Virtually overnight, the coronavirus pandemic forced many companies to arrange for their employees to work from home. At some companies, the entire workforce was suddenly working remotely. And it has already become clear that a certain degree of mobile working will persist at modern companies. Indeed, according to surveys, many companies are planning to establish a mix of home and office-based work. For Frank Bösenkötter, managing director of Dicide GmbH, there is no question that mobile working is one of the key factors behind increased productivity and motivation. However, the prerequisite for this is a capable digital infrastructure. **“In the future, companies will need to see themselves as learning organisations that can quickly adapt to the market situation with a high degree of agility,”** says Bösenkötter. It is therefore important that companies record and evaluate the experiences and insights gained during the current crisis, since this is the only way to permanently anchor motivation, productivity and the necessary willingness to change within the business.

## LESSONS LEARNED

During this difficult time, many companies and their staff have discovered that collaboration is also possible without face-to-face contact – and in some cases is more effective than previously assumed. Many managers have learned to trust their employees to get the job done to the requisite standards, even when working from home. Trust is quite simply everything – and without it nothing works. This

credo has now proven its worth and found its way into the corporate culture of many companies. “The manner in which we interact is the key to success of our modern way of working. For this purpose, employees need both the necessary tools and the confidence to determine for themselves where, when and how they can do their jobs most effectively. In this context, the findings and experiences gained during the current crisis provide an ideal basis for changes and improvements,” says Bösenkötter.

One major challenge, however, is to maintain communication across team and departmental boundaries and to cultivate corporate culture without – or with only a limited – physical presence on the company premises. “If people no longer meet at the water cooler or over lunch, informal communication patterns and the sense of belonging suffer,” says Bernd Bösche, referring not only to his own experiences at WTSH. “Which is why there is a need for new communication services, opportunities for informal dialogue and interpersonal tools that are also available to people working from home. Otherwise, there is a danger of things ending up like the Tower of Babel and projects failing due to a lack of communication,” says Bösche.

## REMOTE WORKING AS A PHILOSOPHY

The company mworks GmbH in Uetersen has initiated a profound process of change, which will result in the majority of its 25-strong workforce relocating to a co-working space in Elmshorn. mworks acts as a “machine finder”, i.e.

it tracks down machines, components or processes that have already been developed for individual production processes of all kinds and then makes them available to its customers. And if the requested machine or component does not yet exist, mworks will design it in-house. In addition, mworks assembles machines and components into complex production plants at its customers' sites in accordance with their requirements. "These activities at our customers' premises are indispensable and so will continue to take place," says managing director Lars Kobialka. "Everything else will be done remotely." In recent months, he adds, the firm has confirmed that its new approach is not only effective but also satisfactory for its customers. Any cancelled appointments at its customers' sites have been compensated for via digital tools, such as explanatory videos and digital whiteboards, while all other activities were predominantly carried out by mworks employees working from home. "What have we learned from the coronavirus pandemic? To apply the things that were already there and to use them to our advantage - especially our digital infrastructure. Without the coronavirus we would never have gone down this path. Now we've taken the plunge and we're going to take full advantage of our co-working space."

**"Despite all the negative effects of COVID on small businesses, we did our homework and made the most of our opportunities."**

Lars Kobialka,  
managing director of mworks GmbH

The company' internal culture, he says, has also changed over recent months - its digital meetings have become highly structured and focused, and are characterised by excellent punctuality and strict adherence to the agenda. Together with the elimination of commuting times, this has resulted in an incredible leap in efficiency. Decision-making processes have also been accelerated and the physical distances between the Uetersen and Newtown locations on the east coast of the USA are no longer a factor.

However, what is missing are the employees' informal chats around the water cooler. "These random conversations that arise in daily office life are very important because they act as an important social lubricant. Unfortunately, we've not yet managed to transfer them properly into the digital world. But we're working on it! Despite all the negative effects of COVID on small businesses, we did our homework and made the most of our opportunities," says Lars Kobialka.

## IN A NUTSHELL: SMES ARE REINVENTING THEMSELVES IN A PARADIGM SHIFT

The term "resilience" originates from the field of physics and describes the capacity of a material to regain its original shape after being subjected to an external force. In an economic context, resilience is the ability of a company to survive lean periods and crises without suffering irreparable damage. The results of a representative survey show that this is a particular strength of SMEs, which gives them a good chance to survive the crisis unscathed - or even to emerge stronger from the deepest recession in the history of the Federal Republic of Germany.

The data and analytics company GfK investigated the resilience of companies on behalf of Microsoft and the confederation of German employers' associations (Bundesvereinigung der Deutschen Arbeitgeberverbände). It was found that the majority of the companies surveyed fulfilled the criteria for resilience. According to the study, these companies demonstrated a high level of adaptability in organisational matters. Two-thirds of the respondents said that they had adopted new ways of working during the pandemic; half said their company had become more flexible. Again, around half of companies reported that they had invested in new software, and the same number mentioned investments in hardware and infrastructure, such as cloud solutions. Around 40 per cent of respondents claimed that their company was now better equipped than before the crisis. A push towards digitisation can indeed be felt throughout the economy. However, software alone cannot make a company resilient. In order to react quickly and flexibly, other, "soft" factors are also important.

And many pre-existing notions of how a company should act and be managed are already incompatible with the new and future realities. The SMEs of the future will be more digitised, more sustainable, more agile and more innovative. And more crisis-proof. This crisis is different and the resulting changes are more drastic than anything we have experienced to date. It is clear that, after the current crisis, the SME sector will remain Germany's economic engine room - in which Germany's True North's innovative SMEs will remain a key component. (lei/eli) //

Dr Bernd Buchholz  
Minister for Economic Affairs,  
Transport, Employment,  
Technology and Tourism



"Businessland"  
interview

GERMANY'S TRUE NORTH RANKS FIRST IN A NATIONAL COMPARISON

# DIGITAL POLE POSITION

*The coronavirus pandemic has made one thing clear - excellent digital infrastructure is now more important than ever, whether for digital communication in business or education, for rural areas or for startups. Schleswig-Holstein has already put itself in pole position nationwide in terms of expanding its fibre-optic networks. And there is more to come - the state government has substantially increased the available funds for fibre-optic upgrades.*



**“Businessland”:** Refrigerators that order groceries by themselves. Central heating that we can adjust before we get home. Self-driving cars. Everything is becoming smarter and therefore more data-intensive. How is the state government ensuring that there is sufficient bandwidth?

**Buchholz:** The Internet of Things is no longer a dream of the future and has long since become reality. Which is why expanding our fibre-optic network is a priority for us. Our target is and remains that, by 2025, we will have fibre-optic connections in almost every part of Schleswig-Holstein.

**“Businessland”:** An ambitious target, but is it really realistic?

**Buchholz:** When I started as a minister in 2017, the connection rate was 30 per cent. By the end of 2020, it was at least 50 per cent. The planning is already so far advanced that 96 per cent of our municipalities are now benefiting from the fibre-optic rollout. The necessary connections are either already in place or are firmly planned. So yes, it's very realistic.

**“Businessland”:** 50 per cent - could be more, right? How does Schleswig-Holstein compare? Are we really pioneers?

**Buchholz:** Compared internationally, 50 per cent is really rather poor. Countries like Latvia or Lithuania are much further ahead. This makes it all the more important not to slacken our efforts now, and instead to catch up with these countries. This attitude has put Schleswig-Holstein in pole position in Germany. We really are pioneers in this area. On average, only around twelve per cent of households throughout Germany are connected to the fibre-optic network.



**“Businessland”:** And who is paying for it all?

**Buchholz:** This is a collective effort. Priority is being given to broadband expansion in accordance with market principles. The telecommunication companies are therefore mainly involved in those areas where the rollout is economically viable. For places where this is not the case, the federal government is stepping in via its broadband funding programme. So far, almost 200 million euros have flowed into Schleswig-Holstein. This means that 50 per cent of the costs can be subsidised. The state is co-financing the whole thing, and we are providing a total of 165 million euros in funding. The rest is being provided by the municipalities. In other words, the parts of the fibre-optic rollout that are eligible for state funding are now fully financed until 2025.

**“Businessland”:** Why do we need fibre-optic networks anyway?

**Buchholz:** In March 2020, employees throughout the state were suddenly required to work from home. But this isn't possible if video conferences turn into slide shows with distorted voices and it takes several minutes just to load a website. We really saw the importance of a fast and reliable internet connection. And the same

also applies for companies. No one starts a business in a region without a decent digital infrastructure. The advanced fibre-optic rollout in our state gives us a significant advantage as a business location and is an opportunity for our rural areas! In addition - and few people know this - fibre optics are a basic prerequisite for the new mobile communications standard, 5G. The latest smartphones are already being advertised as 5G-capable. However, this is pointless if there is no 5G network. Which is exactly the case when the 5G masts are connected by means of copper cables instead of fibre optics. So there are many good reasons for switching to fibre optics.

**“Businessland”:** 5G is a good buzzword. At the moment, there are parts of Schleswig-Holstein where you can't even make a phone call, let alone surf the internet or access your e-mails. When will these “dead zones” finally be removed?

**Buchholz:** Mobile operators like to talk about coverage of 98 per cent, but that only refers to households! But mobile communications are also needed on the road, and we do indeed have some catching up to do here. At the end of 2019, we had 341 dead zones in Schleswig-Holstein, i.e. areas without a mobile data connection. The digital infrastructure is a matter for the municipalities, but radio signals don't stop at municipal boundaries. This is why cooperation among the municipalities is important, as is support from the state and federal government. To make sure that these dead zones will soon be consigned to history, the state has again substantially increased funding for the Broadband Competence Centre (BKZ) until 2023, in order to guarantee the municipalities the support they need. (lei) //



STARTUPS:

# INNOVATING

## A PATH THROUGH THE CRISIS

***In Germany's True North, we know better than to let a headwind throw us off course. True to this motto, the startup scene in Schleswig-Holstein is blazing a trail through the coronavirus pandemic, emerging stronger than ever from the crisis-hit year 2020. At least in part, this success is due to our region's wide range of advisory services and funding opportunities.***

Data from the StartUp Monitor and the government-owned development bank KfW reveals that, while startups have not been spared from the crisis, they are much more optimistic than established companies. And startup activity in Germany's True North is actually on the rise. ***"The coronavirus is evidently acting like a catalyst for entrepreneurs to actually make their startup idea happen,"*** says Schleswig-Holstein's Minister of Economic Affairs Bernd Buchholz. On average, our startups have created 14 new jobs - as opposed to responding to the crisis by cutting staff. According to the German StartUp Monitor, startups also plan to hire an average of six new employees in 2021.

In late 2020, the state's plethora of co-working spaces and hot spots for entrepreneurs was further expanded by the CrossOverLab, which offers offices, a co-working space

and a laboratory area. The state government is funding the project - in which some SMEs are also participating - to the tune of half a million euros.

To ensure that good ideas do not fail for lack of the necessary technology, our young movers and shakers now also have access to state-of-the-art digital manufacturing technology. The state of Schleswig-Holstein is funding a project by Kiel Campus Business Box e. V., which aims to provide access to high-tech production machines for companies, universities, startups and anyone interested in starting a business. The idea is that mobile manufacturing infrastructure - for example, 3D printers, laser cutters or robot arms in the form of so-called "Maker Cubes" - is brought directly to the prospective customers and can be used by them for a certain period of time. However, these Maker Cubes are

Innovative and collaborative: mobile high-tech workshops in the form of Maker Cubes are used during Cowork Nord's "Make and Work Days".



also available to SMEs and craft enterprises - in Germany's True North, support is available for anyone wanting to develop their skills and ideas. The state of Schleswig-Holstein is funding this project with around EUR one million, of which almost EUR 700,000 is being contributed by the European Regional Development Fund (ERDF).

Support is available from the state of Schleswig-Holstein for any students or graduates looking to turn their academic expertise into an innovative, technology-based business idea.

### SCHLESWIG-HOLSTEIN II SEED AND STARTUP FUND

The respondents were also very satisfied with the business and technical mentors who assisted the grant holders during the startup phase. 93 per cent of the funded startup projects continued to operate after the end of the funding phase. Innovative startup projects that are already more advanced in their development and require significantly more capital can turn to the Schleswig-Holstein II Seed and Startup Fund, which offers over EUR 16 million of investment capital.

## NETWORKS, ASSOCIATIONS AND MENTORS

Money, however, isn't everything. Anyone who sets up a business faces myriad challenges and unanswered questions.

This is where the Baltic Business Angels Schleswig-Holstein e. V. can help, i.e. by supporting startups with their expertise and experience, and also with private capital. In addition, networks such as StartUp Schleswig-Holstein and the Innovation-Oriented Startup Network Schleswig-Holstein interconnect the various institutions that support startups. Thanks to this level of support, the startup scene in Germany's True North is now embracing the idea of turning a headwind into a tailwind. // (eli)

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We foster the economy



Regional Economic Programme: Funded by the European Union - European Regional Development Fund (ERDF), the Federal Government and Land Schleswig-Holstein

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OQMENTED

# EMERGING TECHNOLOGY - MADE IN ITZEHOE

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Robotics and augmented reality - researchers and companies around the world are working to perfect these innovative technologies. OQmented GmbH from Itzehoe is one of them. Its sophisticated technology is opening up new perspectives for autonomous vehicles.

It's around 7 p.m. on a motorway in Schleswig-Holstein and the twilight is slowly dwindling. The car sluggishly pushes its way through the heavy traffic. Somewhere further back, the impatient honk of a horn can be heard. The driver barely registers it. He calmly answers the last few e-mails, his hands resting on the laptop's keyboard. The car in which he sits moves forward as if by magic, its headlights automatically adjusting to the low light conditions. While this may still sound like a dream of the future, it may soon be reality thanks to companies like OQmented. It develops so-called MEMS (Micro Electro Mechanical System) mirrors for various applications. For example, as part of a LiDAR (Light Detection and Ranging) scanner, they can

generate three-dimensional images and thus enable cars to "see". In 2018, Ulrich Hofmann and Thomas von Wantoch launched the company as a spin-off from the Fraunhofer Institute for Silicon Technology ISIT in Itzehoe, where they had already been researching the technology for some time. "Since Fraunhofer, as a non-profit organisation, isn't allowed to launch any products on the market, we finally decided to spin off the company," says Hofmann. But what exactly is the underlying concept? "We're developing mirrors that are just a few millimetres in size, encapsulated in a vacuum and micro-manufactured as silicon chips. These mirrors move back and forth up to 100,000 times per second. This allows them to deflect laser beams and, for example, transmit high-resolution images to the human eye," explains von Wantoch. In addition to autonomous driving, the mirrors are also being used in virtual reality glasses or 3D cameras, among other things. "One area of application here is facial recognition in smartphones," says Hofmann. In the automotive sector, they can also

be installed in head-up displays and in headlights, enabling the latter to automatically adapt to changing light levels. "In the consumer sector, the MEMS mirrors are interesting for drones or smart-home robots, as well as other applications," adds the entrepreneur. The unique feature of the OQmented mirrors is their particularly compact design coupled with a high resolution. "The fact that our mirrors operate in a vacuum also means they consume very little energy," adds Wantoch. Advantages that have even turned heads in the world of politics - in 2019, OQmented took first place at the StartUp Camp organised by the state of Schleswig-Holstein. The company still works closely with ISIT - the mirrors are fabricated in its clean room in accordance with the developers' specifications. Ulrich Hofmann and Thomas von Wantoch see Schleswig-Holstein as the ideal breeding ground for their idea. "Thanks to many years of collaboration with Fraunhofer, our production facility is right on the doorstep. Our dealings with our partners, such as the WTSH or the Ministry of Economics, are also extremely straightforward," say the two entrepreneurs.

## On a successful virtual mission:

Entrepreneurs Ulrich Hofmann (front, centre) and Thomas von Wantoch (3rd from right) and their team



At the moment, OQmented's products are still in the trial phase; however, the company is already working with renowned corporations all over the world. If everything goes according to plan, several hundred thousand MEMS mirrors from Itzehoe will be installed in products worldwide by the end of 2022. (ah) //

[oqmented.com](https://www.oqmented.com)



**“We offer patient-centric care within a digitised organisation.”**

*Isabel von Blomberg (left), Colin Clausen, Thomas Tucker, Marc Linnemann and Pierre Nguyen from PCT Digital GmbH*

PCT DIGITAL

## FRESH APPS INSTEAD OF DUSTY LEDGERS

PCT Digital is a Kiel-based startup that develops intuitive apps for care facilities. Despite owing its existence to a slice of good fortune, the company is now firmly on the path to success.

So there they were, standing around at this reunion, five years after leaving school, their initial rush of school-leavers' optimism having long since faded. Most of them had studied something or other and now had their first job - life was just bobbing gently along. Thomas Tucker, Isabel von Blomberg, Colin Clausen and Pierre Nguyen had studied mechanical engineering, computer science and business administration, and at some point during the evening, it occurred to them all that this mixture of expertise must be good for something. The idea that was born that night wasn't just the beer talking. It stemmed from an ardent desire to restart their careers - properly this time!

The only downside to the whole exciting enterprise was the fact that Thomas, Isabel, Colin and Pierre had absolutely no idea where to start.

Over the coming weeks, however, their idea began to crystallise. All four of them had relatives who worked in the medical profession - and who frequently told them hair-raising stories. For example, about how all documentation and accounting was still paper-based in surgeries, facilities and care homes. And how staff members who are supposed to take care of people were constantly forced to waste their time manually entering work rotas and schedules into Excel spreadsheets, over and over again. For the four young entrepreneurs, this was their clarion call! The first, logical step of their plan was to understand the complex interrelationships in the German healthcare system. “So that we could then develop software solutions to optimise these processes,” explains Thomas Tucker.

For three whole years, they sat around countless conference tables and visited numerous institutions - and simply listened, nothing more. “That was important,” says Tucker, “because we wanted to understand what the respective requirements and preferences were in this sector.” Soon, they

were hosting their first workshops, and over time their clients became more and more like partners. And it was precisely this interpersonal, direct and face-to-face dialogue that would ensure that the resulting software solutions were anything but off-the-shelf. Just under two years ago, Thomas, Isabel, Colin and Pierre founded PCT Digital - they were now ready. Ready to start revolutionising the German health care system.

In fact, they have already achieved this feat to a certain extent. PCT's software solutions now allow appointments and times to be planned, services and staff deployment to be recorded; and all of this to be billed and archived without mountains of physical paperwork. **“We offer patient-centric care within a digitised organisation,”** says Tucker.

The entrepreneurs are now also running their first larger pilot projects, for example with the AOK health insurance provider. The goal here is to link care services directly with the cost bearers.

However, despite the fact that their business is now picking up pace nationwide, there is no question that they wish to remain rooted in their native Schleswig-Holstein. Thomas Tucker says: “We feel that Kiel has become part of our brand. We bring a breath of fresh air to nursing and patient care. And that's a very fitting image for our location.” (bs) //

[pct-digital.de](https://pct-digital.de)

FLIN SOLARSEGELN

# SOLAR-POWERED SAILORS

Abundant electrical power from any socket – even far out at sea. For sailors, this is the holy grail. For the Kiel-based startup FLIN, it is a matter of cutting-edge solar solutions.

**30** Sailors are free, independent spirits. They rely on themselves, their boat, the waves and, to some extent, the heavens above. They are self-sufficient, masters of their own destiny. There is true freedom. Only when a sailor docks at the harbour does he fall prey to the rat race. With his cable



drum under his arm, he wanders across the jetty immediately after docking, hunting for what is probably the last free power socket, getting embroiled in petty squabbles with rivals along the way. This is the reality of shore power. Sailors are utterly reliant on this 230-volt “umbilical cord”. It provides desperately needed juice for their vessels’ on-board batteries – powering the fridge, microwave and lights, and even enabling them to enjoy a hot shower the next morning.

Lasse Hochfeldt is a sailor. His “Mina” is a comparatively small boat at just six and a half metres long. Like other sailors, he needs energy – especially for the electric outboard motor that propels “Mina” whenever the Baltic Sea is in the doldrums. So how could he power his boat while also breaking free from the constraints of shore power and becoming carbon-neutral?

Conventional, deck-mounted solar panels simply cannot cut it, especially on such a small boat with very limited deck space. One day while aboard “Mina”, Hochfeldt realised that lots more space was available “up top”, i.e. on the ten-metre mast, where 14 square metres of mainsail normally hang. And so the 29-year-old mechatronics engineer sat down – first at his computer, and then at his workbench. He did so in the living room of his small attic flat in Kiel. He purchased a chest-of-drawers-sized CNC milling machine, plenty of drills and lots of other stuff that makes plenty of noise. At some point, his neighbours thought they were living in a metalworking factory, but they said nothing. As he worked, metal chips from the components rained down on his girlfriend’s dressing table, yet she, too, stayed the course. And then the first prototype was ready.

Today, this prototype has become a system that is ready for series production. It can be hoisted to the mast in a few easy steps and stowed away again in space-saving transport bags just as quickly. Once up, the modules can be adjusted like the slats of a blind to ensure they always point towards the sun, generating almost more energy than the boat could possibly consume, even during a lull or when in port. Hochfeldt has not held a shore-power cable in his hands for a long time, not even on his

last holiday – two weeks in the South Funen Archipelago with total self-sufficiency. *“With optimal sunshine,”* he says, *“the modules – depending on the number and size of the yacht – can completely replace shore power.”* Just two of the solar sails can supply enough energy to power the entire electrical system of a ten-metre yacht.

Hochfeldt and his two partners are now on the road with their solar sails – visiting trade fairs, approaching sailing clubs and inviting people to events. The response has been, in a word, “enthusiastic”. Their goal now is to continue growing. With over 30,000 boat owners on the Baltic Sea alone, 200,000 throughout Germany and then of course the Mediterranean: *“The market is there, without question,”* says Hochfeldt, cautiously looking inland from the sea. He can see campsites, flagpoles, house facades ... In other words, plenty more opportunities to free ourselves from cables. (bs) //

[flin-solarsegeln.de](http://flin-solarsegeln.de)

**“We want to contribute to advancing maritime e-mobility.”**

Lasse Hochfeldt (right) and his partners  
Christina Kayma and Malte Nähtke





**“Through our app we’re convincing more young people to donate blood.”**

Jonas Reinhardt, Nikita Segal,  
Kathrin Boersch and Benno Lauther  
(left to right), the founders of Tricode

## TRICODE

# SMART APP BOOSTS BLOOD DONATIONS

Blood reserves save human lives. But at certain times, too few people donate this precious life fluid. Via an interactive blood-donation app called “Statusplus”, Kiel-based startup Tricode is trying to encourage more young people to give blood – and with success. Six months after its launch, more than 7,600 donors at the University Medical Center Schleswig-Holstein (UKSH) are using the award-winning app. Am I allowed to donate blood at all? When can I book my next appointment? How have my iron levels changed? Quick answers to these complex questions are provided by the colourful Statusplus smartphone app. **“It makes donating blood much easier thanks to numerous clear and interactive features,”** says co-founder Jonas Reinhardt, a graduate in business informatics from Kiel UAS. At the UKSH sites in Kiel and Lübeck, around 7,600 donors have already downloaded the app onto their smartphones – only six months after the app’s launch in summer 2020.

The four founders of Tricode have had reason to celebrate on several occasions, having scooped a number

of prizes for their software within a short space of time. “We developed the first elements of the software at the IBM Healthcare Hackathon in 2018 – and won third prize straight away,” says Reinhardt. They also won the state-wide 2nd Innovation Transfer Prize in 2020, as well as the national Health-i Pioneers competition and the Culture and Creative Pilots (Kultur- und Kreativpiloten) award. Quite an achievement for a startup company that is barely a year young! **“Via our app, we particularly want to appeal to young people and offer them incentives to donate blood,”** says computer science engineer Benno Lauther, who was in charge of programming the software. “At times, hospitals don’t have enough donated blood for transplants or operations, especially the rare blood types,” explains Tricode boss Reinhardt.

Reinhardt and Lauther developed their software in collaboration with medical interface designer Katrin Boersch and business informatics specialist Nikita Segal. “The donors also receive a message when their blood has been used. This is our way of sending them a virtual ‘thank-you’

from the UKSH,” emphasises Professor Siegfried Görg, head of the Institute for Transfusion Medicine at the centre. As project partners, the Tricode founders developed the software together with the UKSH. “Statusplus” offers a broad range of services. After registering online, users can take part in an interactive pre-check to find out whether they are eligible to donate blood. For example, this may not be possible if they are ill or have recently visited high-risk areas. They can also book a donation appointment online. After donating, users can view information about their blood type and the levels of its key components.

To enable other clinics in Germany to benefit from their innovation, Tricode intends to attract them as customers in the future – to ensure healthy growth for the company and to find more kind hearts to support this noble project. After all, blood saves lives. And now there’s even an app for that. (wel) //

**tricode.io**  
**blutspende.sh**



## SCREENABLE

# FROM MOBILE PHONE TO CONTROL DEVICE

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Philipp Spieck and Jens Woltering are transforming digital advertisements and information screens into game interfaces, interactive quiz shows and even portals that invite visitors to take a virtual tour of a company. They are also revolutionising this technology by enabling any bystander to have a say in what happens on the screen. **"All you need is a smartphone with internet access and the four-digit code that we display at the bottom of each screen,"** explains Spieck. In the Screenable office, located in the Fleet 7 co-working space, he grabs his mobile phone and demonstrates how easy it is. Once he has entered the code on the website [www.screenable.de](http://www.screenable.de), his smartphone becomes the controller and the figure on the screen follows his every move. Registration is not required.

They came up with idea back at the beginning of their Master's studies in media design at Kiel University of Applied Sciences. **"Digital signage, i.e. digital posters, advertising or information in public spaces already existed,"** says Woltering. **"But we wanted to exploit the interactive potential of this technology."** Both entrepreneurs are curious, enjoy thinking creatively and thus combining existing things to create something new. Their first prototype was so well received that they continued to develop their idea piece by piece throughout their studies. Even their first playful attempts were always underpinned by important conceptual considerations - they deemed the technical possibilities just as important as the theoretical foundations. **"Interacting with advertising messages transforms them into an experience, which makes them more memorable,"** says Woltering, explaining the approach that makes

this form of advertising appealing to companies. People who use the digital application can be rewarded with vouchers or discounts that can be redeemed immediately. **"We've also developed our own privacy-compliant wallet. Anyone who registers can save their vouchers in it and redeem them later,"** says Spieck. An important success factor is that the system must be understood by the users without further explanation - even those who are not very digitally literate.

**"We're still learning and solving new challenges every day,"** says Woltering in his usual calm manner. **"But since we were both already self-employed freelancers, we knew that a project like this is like a marathon."** One lesson and tip that both are happy to share is the importance of celebrating even minor successes. The fact that they were able to bring their product to market so quickly is partly thanks to the nine-month Schleswig-Holstein Startup Grant, awarded by the WTSH. **"That was a tip from the StartUp Office at Kiel UAS (FH Kiel) and was once again a real catalyst,"** says Spieck happily. **"We're benefiting**

**from the great advice, infrastructure and dialogue within the network."**

WTSH also assisted the startup with patent research and found a similar project in Israel. "That was a blow for a brief while, but fortunately our fears were unfounded. At the moment there is very little competition and we want to use this head start to go to market," says Spieck. Pilot projects with the food wholesaler Bartels-Langnes, the Kiel-based brewery Lillebräu, the Bo-Concept furniture store and the city of Kiel are already in the pipeline. Their next goal - to master the transition from startup to established company. **"We want to grow and scale our product. And to develop suitable applications for different customers, we simply need more people."** (br) //

[screenable.io](http://screenable.io)

**„We're learning and solving new challenges every day."**

Jens Woltering (left) and Philipp Spieck, the founders of Screenable







## KORBSAUNA

# ONE BECOMES TWO

It was an idea that Torsten Sauer simply could not shake – what about combining a beach chair and a sauna in a single product? **“Everyone I told about it was immediately enthusiastic about the idea,”** says the Lübeck-based graduate engineer, who describes himself as a passionate sauna-goer and equally passionate surfer. The idea has now become a startup with excellent market opportunities. From January 2021, the first examples of the “korbsauna” (wicker sauna) will be made available to exclusive B2B customers from the tourism industry, including the A-Rosa Wellness Resort in Lübeck-Travemünde. At the same time, Sauer is taking a prototype on a roadshow throughout Germany against a backdrop of huge interest in this innovative product from Schleswig-Holstein.

**“It’s the first sauna that can do more than just ‘sauna,’”** says the 45-year-old inventor proudly, pointing to what at first looks a lot like an ordinary beach chair. Unlike standard models, however, both seats can be moved independently into a sitting or reclining position. “So one person can sleep comfortably while the other reads, for example.” But the real highlight, of

course, for which a patent is pending, is the mechanism that converts the chair into a sauna cabin. This is based on an ingenious shell system and takes two people less than five minutes to operate. The wicker shell is simply lifted off, carried over to the open side and fixed in place, creating an interior with enough room for two people to enjoy the sauna. Removing the cushions reveals the typical light-coloured wood associated with saunas. The “sweat room” is entered and exited through a side door; a window provides a view outside and a permanently installed 3 Kw electric oven generates the heat. **“A temperature of 90 degrees is reached in 30 to 45 minutes, depending on the outside temperature,”** says Torsten Sauer. The power is provided via a simple external plug socket.

The man responsible for the on-board technology is his brother Thomas, a building planner and technical engineer. Together they founded korbsauna GmbH in November 2018. Torsten Sauer, a trained carpenter and furniture restorer, was a partner in an architectural firm and continues to carry out planning assignments. When he first began working for himself he

received a lot of support – from the people around him as well as from the state of Schleswig-Holstein via its funding institutions and programmes arranged through the WTSH. “The Institut für Holztechnik Dresden (IHD), represented by Lars Blüthgen, also played a major role in developing the prototype for our first presentation in January 2020,” he says.

There was and still remains a lot to be done. Besides continuously optimising the product, this includes developing a distribution system and appropriate marketing activities, as well as a thousand little things “that you won’t find in any business plan,” as the entrepreneur puts it. The current situation would certainly seem to favour products that focus on individual wellness. From healthy sweating in the sauna on colder days to a comfortable holiday feeling as you recline in the beach chair from early summer to autumn – the “wicker sauna” cleverly combines two functions in one product to save space. If everything works out, from 2022 onwards private customers will also be invited to purchase the korbsauna in addition to the B2B sector. (sas) //

[korbsauna.de](http://korbsauna.de)



**„The first presentation of the korbsauna to the public was a resounding success.”**

*Torsten Sauer, graduate engineer and founder of korbsauna GmbH*

# SMES – INNOVATION DRIVERS

## WITH SUSTAINABLE CONCEPTS


**34** *Today, sustainability is a central component of many companies' strategies. The concepts involved go far beyond purely ecological aspects. Energy efficiency, human rights, durable products and sustainable human resources management - these are all key facets of sustainable business. For small and medium-sized enterprises in particular, sustainability is often associated with major challenges, which are offset by numerous advantages and opportunities for the future.*

WTSH managing director Bernd Bösche is keenly aware of the relevance of sustainable business. "I get the impression that sustainability has become more important in the SME sector in recent years. Especially when it comes to recruiting skilled workers, it has become more important to perform meaningful work with sustainable prospects. Sustainable companies also contribute to our image as a modern, future-focused business location," he says.

Studies have also proven the importance of this topic. According to a survey conducted by the Bundesverband Unternehmensgrün e. V. in May 2020, sustainable companies are more resilient in the face of crises.

### SUSTAINABLE PRODUCTS AND LOCAL SUPPLY CHAINS

One company showing how this can be achieved in practice is Witte Pumps & Technology GmbH in Tornesch, which builds customised gear pumps. "For us, sustainability begins early on, during production," says managing director Sven Wiczorek. All the company's pumps are made from recyclable materials. Tiny gaps between the gears that operate the pumps minimise friction losses and ensure both high efficiency and low energy consumption. Witte also manufactures pumps for sustainable applications, such as hydrogen storage facilities and recycling plants. In the company building, triple-glazed windows,



Ecological, social, economic - and innovative: SMEs in Germany's True North are demonstrating sustainable innovation



Sven Wieczorek, managing director of Witte Pumps & Technology GmbH from Tornesch, attaches great importance to regional procurement and resource-saving production

external shading and underfloor heating ensure pleasant temperatures without the need for air conditioning. "We feel that sustainability also means social responsibility. Which is why we support various regional projects," adds Wieczorek. Local supply chains are also a priority - 75 per cent of Witte's required goods are sourced from the Hamburg metropolitan region.

### SOPHISTICATED ENERGY CONCEPT

Kreyenberg GmbH in Norderstedt is creating clean air thanks to a sustainable energy concept. The manufacturer of precision turned and milled parts has invested heavily to lower its carbon footprint. "We believe that sustainability means acting in a way that doesn't burden future generations. In other words, we consider the consequences of everything we do," emphasises Anne Rose, authorised company representative and head of human resources. At Kreyenberg, sustainability begins with the company building itself. Instead of air conditioning, a recirculation system ensures an optimum room temperature in the production facility, where an ingenious hose system continuously supplies fresh, cool air. The family business also uses waste heat from its machines to heat other rooms. "The air is cleaned and filtered via extraction systems. This also reduces our exposure to aerosols," says Rose. In addition, an in-house grid optimisation system regulates the company's electricity consumption to prevent overloads and saves both power and money. Kreyenberg aims to reduce its energy consumption by ten to 20 per cent via these measures - an initial evaluation will soon reveal whether this target has been reached. Furthermore, the company's fleet includes eight electric cars and two hybrid vehicles. Its employees have 30 company bicycles at their disposal,

of which 80 per cent are e-bikes. When it comes to sustainable management of its human resources, Kreyenberg relies above all on training - nine apprentices are taken on per training year, all of whom are then retained permanently if possible.

### SUSTAINABILITY AS A ROUND-THE-WORLD TRIP

*"Sustainability is a journey around the world, not just a weekend break. In our view this means taking ecological, social and economic responsibility and actively shaping the future. At our company, sustainable management therefore begins with soil cultivation and extends all the way to the supermarket shelf,"* says Rainer Carstens, managing director of Westhof Bio-Gemüse GmbH & Co. KG in Friedrichsgabekoog. The company grows a variety of organic vegetables on around 1,000 hectares of land.

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Managing directors Clemens (left) and Jöran Kreyenberg invest sustainably and with foresight in their business based in Norderstedt.

To ensure the health of the soil and plants, and to grow the best possible produce, all its vegetables are grown on the basis of a natural crop rotation system. The farm is also working to prevent food waste. "If possible, we use any damaged vegetables in the frozen products sold by our company Bio-Frost. If that's not possible, we see if we can still make juice from them. Vegetables that are no longer suitable for food production are either used as animal feed or fuel for our biogas plant," says Carstens. The farm feeds the electricity generated by the plant into its grid along with the energy from its photovoltaic systems. A contribution to the energy revolution. "We also want to set up a new processing line in our frozen food factory. We plan to reduce our energy consumption by more than 50 per cent by feeding power back into our grid, and via energy storage," explains Carstens.

### SUSTAINABLE TRAVEL AND CONFERENCE DESTINATION

Schleswig-Holstein's tourism industry is also placing a sharper focus on the megatrend of sustainability, both in the "Sustainable Tourism" holiday segment and the "Green Meetings" conference segment. "Hotel investors are increasingly approaching us with sustainable concepts, in part due to the growing demand for sustainable travel," says Birte Pusback, head of the tourism department at the Ministry of Economic Affairs, Transport, Employment, Technology and Tourism. "According to the latest analysis by the Forschungsgemeinschaft Urlaub und Reisen e. V. (a research association for holidays and travel) which was released in March 2020, 43 per cent of the German-speaking population values holidays that are as environmentally friendly as possible. For 56 per cent, being socially responsible is particularly important," says Bettina Bunge,



Rainer Carstens, managing director of the Westhof-Bio Group in Friedrichsgabekoog, has declared war on food waste

managing director of Tourismus-Agentur Schleswig-Holstein GmbH (TA.SH). In the course of the forthcoming realignment of the state's "Tourism Strategy 2025", sustainability is also set to be anchored strategically and operationally as a central guiding principle. In addition, the Schleswig-Holstein Tourism Cluster (Tourismuscluster Schleswig-Holstein) now offers comprehensive advice to SMEs as part of its sustainability initiative. "In tourism, too, we view sustainability in economic, ecological and social terms. Above all, social aspects are becoming increasingly important for the companies involved. This applies not only to the personal interactions within these firms, but also to their dealings with external partners such as banks and suppliers. In general, all tourism-related businesses that have been founded in recent years have incorporated the idea of sustainability into their core concepts," explains the Cluster's director Petra Stangenberg.

[tourismuscluster-sh.de](https://tourismuscluster-sh.de)  
[sh-business.de](https://sh-business.de)

Analyses show that consumers increasingly value eco-friendly and socially responsible holiday experiences





## FUNDING SUSTAINABLE CHARGING INFRASTRUCTURE FOR ELECTRIC VEHICLES

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Electromobility is a central component of sustainable mobility concepts. However, the switch to electric power is dependent on the construction of a nationwide charging infrastructure. The latter's rapid expansion is therefore being supported in Germany's True North by the state of Schleswig-Holstein. Its new funding programme for charging infrastructure is aimed at companies, initiatives and municipal authorities that want to install charging stations for e-vehicles.

### Which projects are eligible for funding?

The construction of

- publicly accessible charging infrastructure at one location, including one or more charging points as well as load management for at least three charging points
- private charging infrastructure at one location without public access – including one or more charging points as well as load management for at least three charging points
- charging infrastructure for the operation of electrically powered or rechargeable buses used for local public transport, including the necessary grid connection at the location and installation of the charging station itself

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In 2021, the ADAC Tourismuspreis Schleswig-Holstein will once again honour businesses that implement sustainability particularly successfully. The winner in 2019, the Arborea Marina Resort in Neustadt, is a good example of this. The establishment's interior furnishings largely consist of recyclable materials. "Short supply chains and regional value creation are also part of our sustainability strategy. Which is why we source all the food for our restaurant from within a 200-kilometre radius," says the hotel's director Walter Pint. The staff also help the hotel's guests to experience the surrounding natural beauty by organising group activities such as cycling and sailing tours.

The upshot of all this is that sustainability comes in many guises. And its advantages are obvious – both for SMEs and for society. Many companies in Schleswig-Holstein are already helping to shape our image as a modern, future-focused business location. And in the coming years, we can feel confident that even more will join them. (ah) //

Award-winning role model:  
The Arborea Marina Resort in  
Neustadt won the ADAC  
Tourism Award Schleswig-  
Holstein in 2019



We foster the economy



Regional Economic Programme: Funded by  
the European Union - European Regional  
Development Fund (ERDF), the Federal  
Government and Land Schleswig-Holstein



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At the HEROSE plant, employees continuously check and document the quality of the components.

# HEROSE GROUP IN THEIR COMFORT ZONE MINUS 270 DEGREES CELSIUS

**The special valves from HEROSE are cool customers when it comes to ensuring safety on all continents**

*When the temperature drops so low that gases become liquid, the special valves manufactured by market leader HEROSE are truly in their element. These products from Bad Oldesloe can be found in road tankers and hospitals. They also get to work when deep-frozen foods are shock-frozen or Ariane space rockets are tested.*



Location  
Bad Oldesloe



Workforce  
420 employees



Company founded  
1873

**“At the deepest sub-zero temperatures, our experience is our greatest asset.”**

Mario Esche,  
Head of marketing at HEROSE

[heroses.com](https://www.heroses.com)



First, let's get the most important question out of the way: why convert gases into liquids in the first place? “Cryogenic liquefaction is used to reduce the volume of industrial gases such as nitrogen, oxygen or argon by up to a factor of 600,” explains Mario Esche, head of marketing at HEROSE. “This makes transport in tankers and storage much more economical.” Depending on the specific requirements, the materials used in this process are often subjected to extreme temperatures. **“For example, our valves can be easily and reliably opened and closed while in contact with liquid natural gas at a temperature of minus 161 degrees Celsius. They must not freeze and must be able to withstand temperature fluctuations of several hundred degrees without leaking.”** And this is precisely what HEROSE guarantees for its customers in 80 countries – maximum safety lasting many decades.

The company has specialised in valve technology ever since foundry foreman Theodor Rose began manufacturing products for shipbuilding and domestic engineering in his fittings factory in Altona, which was founded in 1873. In partnership with the company Hero Armaturenwerk, founded in Bad Oldesloe in 1921, Rose founded the joint sales company HEROSE in 1947 – the new name being an amalgam of “Hero” and “Rose”. **“With the construction of our new plant in 1996, we started specialising in valves for cryogenic applications and have remained a global market leader to this day,”** reports Esche. For five generations, the company, which has won awards for its family-friendly ethos, has been managed by its owners, the Zschalich family – and is on the road to success in the new millennium.

“Cryogenics” is the key word here. Anyone who understands how much metal can expand and contract at extreme temperatures will appreciate the engineering achievements of the team at HEROSE. Their safety valves are made from stainless steel, brass and bronze and must function reliably amid the interplay of materials in harsh industrial applications – in a temperature range from minus 270 to plus 400 degrees Celsius and under pressures reaching 500 bar. For comparison, a car tyre is inflated to a pressure of around 2.5 bar. “In most cases, our shut-off valves and safety valves remain in service for 10 to 20 years before certain parts need to be replaced. This creates trust among our customers,” reports HR manager Helmut Lucka.

The company, he explains, lives by its good reputation and the high quality of its products: **“Our 300 Bad Oldesloe-based employees bring our company's philosophy to life: ‘We strive for perfection!’”** This begins at the heart of the company, in the modern, 11,000-square-metre factory complex in the Oldesloe industrial zone, where its employees produce around 400,000 valves every year. “We manufacture most of the individual parts ourselves using a wide variety of metals and 14 computer-controlled CNC machines,” explains Lucka. Each valve is then assembled by hand. The production quality is continuously controlled by means of material and leak tests – every step is also documented to ensure that customers can seamlessly trace the production history of every single valve.

The range of applications for these “Made in Schleswig-Holstein” valves is enormous. For example, the transport of liquefied natural gas (LNG) using special tankers. “They are subjected to immense stresses due to the frequent filling, transporting and unloading processes. We supply shut-off valves that can withstand this kind of punishment,” says Esche. The components from Oldesloe are also in demand wherever high-pressure pipelines are required; from brake systems in high-speed trains to seawater desalination plants and silo vehicles.

They are also found in hospitals – wherever liquid oxygen is used, you will often see the HEROSE logo on the tank systems. The food manufacturer Frosta, which uses nitrogen to shock-freeze food, is also a customer. Even the German Aerospace Centre (DLR) relies on technology from Bad Oldesloe when testing the latest Ariane rockets. When returning from space, their engines literally “come in from the cold” – with maximum safety thanks to HEROSE's core competence. (wel) //

**Nordic engineering:  
Herose safety valves  
can withstand extreme  
conditions – including  
temperatures from minus  
270 to plus 400 degrees  
Celsius and pressures  
up to 500 bar**



## JOB GROUP

50 YEARS OF SUCCESSFUL  
FIRE PROTECTION

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JOB delivers over 100 million glass ampoules to customers every year. A tiny bubble of air from Ahrensburg lurks inside each and every one. This trapped air serves an important purpose. It helps to burst the liquid-filled tubes at certain temperatures – and thus enables the global market leader from Schleswig-Holstein to protect people and property against fire hazards all over the world. Thanks to its many innovations, JOB has been improving fire safety for half a century. Its recent achievements include helping to ensure that large digital media walls were safely installed in busy locations such as Frankfurt Airport.



Location  
Ahrensburg



Workforce  
150 employees



Company founded  
1971

**“Standing still means going backwards,”** proclaims Bodo Müller. The managing director and co-owner of the JOB Group is aware that, while 50 successful years and a large chunk of the global market are a solid foundation, they are far from a guarantee of future success. A lot has happened since Eduard J. Job founded the company in 1971 – eighty per cent of all indoor sprinkler systems that release water in the presence of fire contain a glass ampoule from Ahrensburg. An incredible 1.5 billion “Thermo Bulbs” – their international product name – are currently installed in the systems sold by almost every leading sprinkler manufacturer on earth.

“To date, we haven’t received a single justified complaint about one of our products,” explains Müller, describing the zero-error philosophy at JOB: “Our products undergo an automated quality control process that ensures the highest standards. They are also 100 per cent ‘Made in Germany’. We guarantee the best product with the highest possible delivery reliability.” The company’s independence from sub-suppliers plays a key role here – its entire manufacturing process, and even the construction of its production equipment, is all based in-house at JOB. The medium-sized company employs 150 people, 120 of whom work at its headquarters in Schleswig-Holstein and 30 at a glass manufacturer in southern Germany, which was acquired in 2016.

One of the company’s engine rooms is its development department. **“We’ve significantly increased our innovative output for about ten years and have filed close to 30 patents during this time,”** reports Müller.

One of our innovations is called the E-Bulb – the “E” stands for “extinguishing”. “We also call the E-Bulb the world’s smallest fire extinguisher,” explains product manager Markus Fiebig. “It’s a fuse that can be installed by manufacturers in all kinds of electronic devices. The smallest version is just two centimetres long. While the standard Thermo Bulb triggers an extinguishing device, the E-Bulb can extinguish fires directly, for example if sparks are generated due to a technical defect and the power supply is interrupted. Fiebig says, “30 per cent of all fires are caused by electricity, most of them in the home.” In the worst case, a burnt-out component in an appliance can cost lives – a hazard that has made the headlines all too often. “A Forsa survey has shown that an integrated fire stop can be marketed in a similar way to the water cut-off function in a washing machine. Eighty-two per cent of consumers would be more likely to buy an electrical appliance equipped with this additional safety feature. Most customers would also be undeterred by a higher purchase price.”





JOB has developed the E-Bulb, the world's smallest fire extinguisher. As an "extinguishing fuse", it reliably detects and extinguishes fires at the point of origin, i.e. directly on the circuit board inside the device itself.

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**"Our vision is a world in which everyone is protected from the hazards of fire at all times."**

*Bodo Müller, managing director  
JOB Group*

**job-group.com  
e-bulb.com**



Other potential applications for the E-Bulbs include medical equipment and media technology; specifically, in network adapters for advertising screens. The fact that the technology manufacturer Samsung received fire-safety approval for a 43-square-metre LED media wall at Frankfurt Airport in 2019 was also due to the built-in invention from Ahrensburg.

*"Extinguishing the fire inside the device itself helps us to realise our vision even more effectively - of a world in which everyone is protected from the hazards of fire at all times,"* says Müller, summarising the motivation behind the new product. Another JOB product that is based on the principle of device-integrated fire protection is called AMFE (Automatic Mini Fire Extinguishing Device). It is designed for use in control and switch cabinets as well as mobile, self-triggering fire-extinguishing units. "AMFE can be used in every manufacturing industry and therefore has huge potential. However, we are also continuously optimising our Thermo Bulbs," says Müller, who feels that the Business Development and Technology Transfer Corporation of Schleswig-Holstein (WTSH) is the ideal companion for JOB on its innovative journey. As a premium partner in the WTSH's partner programme called "Schleswig-Holstein. Germany's True North" he also helps the WTSH to promote our state: "We're not only the leader in mudflats, but also in global markets." (sas) //



**Bodo Müller, fire protection professional and managing director of the JOB Group**

Dr Carsten Corino, founder and managing director of SunOyster GmbH based in Halstenbek

SUNOYSTER SYSTEMS GMBH

# A BUNDLE OF ENERGY FROM HALSTENBEK

**SunOyster develops highly efficient solar cogeneration systems for industry and private use**

*"We convert sunlight into both electricity and heat, and can achieve unprecedented efficiency of 75 per cent," says Dr Carsten Corino, explaining what makes the SunOyster systems so special. The founder and managing director of SunOyster GmbH from Halstenbek is actually a qualified lawyer. However, environmental protection and renewable energies have always been close to his heart. Having worked for various companies in the wind energy sector, solar power piqued his interest. He then trained as a system planner for renewable energies, and later as a specialist in solar technology.*



Location  
Halstenbek



Workforce  
9 employees



Company founded  
2011

**“Wherever heating and/or cooling is needed in sunny locations, the SunOyster is the smartest way to harness solar power.”**

*Dr Carsten Corino, managing director  
SunOyster Systems GmbH*

[sunoyster.com](http://sunoyster.com)



Corino’s home right next to the A23 motorway is also the company’s headquarters. **“There are currently nine of us in our team and we want to continue to grow. We need more space for this and are currently converting our premises,”**

he says, explaining the noisy hustle and bustle in the house while retaining his calm and relaxed manner. The source of the noise is the building’s roof, where preparations are underway for installation of the latest model of the SunOyster 8. A model of the larger SunOyster 16 stands in the adjacent garden, filling almost the entire space thanks to its two large parabolic mirrors and 50-square-metre footprint.

### 360-DEGREE SOLUTION

It was in the same garden that Corino’s initial idea for an innovative solar energy system was born, albeit with the help of his neighbour, Stephan Ulrich. The latter, an experienced automobile master technician and current workshop manager at the fledgling company, shares Corino’s love of tinkering. Together, they first built several small yet fully functional models. The principle behind the SunOyster sounds simple enough. The curved mirrors catch the sunlight and focus it onto a glass tube, the receiver, where the light is concentrated to 500 times the sun’s output and converted into electricity and heat by means of solar and photovoltaic cells. For optimal performance, however, the sunlight must strike the parabolic mirrors at the optimum angle at all times. **“The SunOyster can rotate almost 360 degrees from east to west and change the angle of its mirrors. To make this possible, we developed our own software that calculates the position of the sun based on the system’s location,”** explains Corino. Indeed, the SunOyster in the garden at the company headquarters rotates by a few degrees at regular intervals as it tracks the sun’s position. In case you were wondering, the novel system owes its name to its protective function – whenever a storm threatens, it closes its parabolic mirrors like the shells of an oyster.

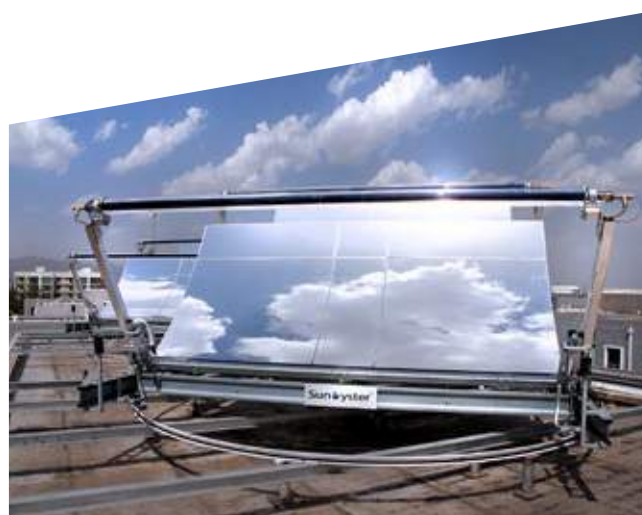
Up to 75 per cent efficiency is possible by converting sunlight into heat and electricity

### SOLAR ENERGY FOR ELECTRICITY, HEATING AND COOLING

Corino received the capital for the prototype from the coal sector, of all places – from a Chinese investor looking for new investment opportunities. Indeed, the company has great potential in solar markets and has already filed patents in China, India and Europe. Corino sees opportunities for the SunOyster’s mode of regenerative energy production wherever energy costs are high and there is a strong demand for electricity and heat. Cooling is another possibility – in combination with thermal chillers, the recovered heat can be converted directly into cold air for air-conditioning systems or cold stores. This could be an appealing solution for hotels, hospitals, office buildings and the manufacturing industry, for example.

### A SUNOYSTER FOR YOUR ROOF

In Central Europe, floor space is in short supply. To enable solar power to be used more effectively there, the company has developed the smaller and lighter SunOyster 8, thanks in part to funding from the state of Schleswig-Holstein. The new system is the first SunOyster that can be installed on sloping roofs (and therefore also on detached houses), where it can be used to generate and consume electricity and heat directly, store energy temporarily or feed it into the grid. **“One square metre of mirrored surface receives around 1,000 kWh of solar energy annually here in northern Germany. That’s equivalent to about 100 litres of crude oil. We convert about three quarters of this into useful energy,”** explains Corino. There is already a waiting list for the first SunOyster systems. During an expected service life of at least 20 years, a SunOyster 8 is expected to save around 60 tonnes of CO<sub>2</sub>. Furthermore, the system is designed to be recycling-friendly. Corino is also planning to build a fully automated production facility on the GreenTEC Campus in Enge-Sande, North Frisia, with the aim of lowering the price of a SunOyster 8 to EUR 3,000. The technically complex receivers will be produced there. The company plans to have the large, comparatively simple steel components manufactured via a joint venture in India. (br) //



TRASER SOFTWARE GMBH

# TABLET MEETS TRACTOR

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*They see themselves as a software partner for the agricultural and construction machinery trade. But Traser is actually much more than that. The young Kiel-based company offers innovative, complete solutions for all areas of its customers' IT infrastructure. And the latter are now based all over Europe.*



Location  
Kiel



Workforce  
70 employees



Company founded  
2014



The founding team:  
managing directors  
Torben Weber (left) and  
Hauke Lamb

It was one of their first really important meetings. The customer was an international agricultural machinery manufacturer – a commercial giant whose name will be familiar even to folks who have never set eyes on a tractor before. So, with more or less the entire future of their startup riding on this one meeting, the two entrepreneurs felt it appropriate to don some suitably respectable attire, including a neck tie each. The discussions did indeed prove very promising, especially when the customer's representatives said they wanted to sit down again soon. They also mentioned something else as they were leaving, this time with a smile. In good humour, they explained that there really was no need to get all dressed up in a "confirmation suit" for this type of meeting – unless you really wanted to, that was.

At that moment, the Traser team understood something important about the kind of industry they were dealing with. It dawned on them that they were sitting down with customers who place a far higher value on an authentic appearance and a trust-based relationship than on slick sales pitches and a barrage of superficiality that stifles any real warmth. And when they were invited to an exclusive Alpine cattle drive in Austria some months later, they finally understood that, albeit in the broadest sense of the term, they were now members of this "industry family".

### SOFTWARE UPDATE FOR AGRICULTURAL MACHINERY

The Traser founders had long since felt like a kind of family in their own right. As employees of a software company, they had previously worked together as a well-drilled team. Due to extensive restructuring within the business, a good opportunity to become self-employed had then presented itself. And so, together with eight shareholders, they founded Traser over six years ago. The new company's mission was nothing less than to update the entire construction and agricultural machinery industry, at least a little bit. The background to this plan was as follows. In this highly technological sector, in which the machines have long since reached a high level of automation and the cockpit of a combine harvester now resembles the bridge of the starship Enterprise, the two entrepreneurs realised that the dealers and farmers were still relying on "ancient" software that was in some cases decades old. This, according to the founders of Traser, was clearly a mismatch.

So they started developing specialised and, above all, forward-looking software solutions. A kind of toolbox that could smoothly interlink the various structures within a company – customised and expandable at any time as required. A complete solution that encompassed all business processes and was precisely tailored to the day-to-day business in the machinery trade. Their product encompassed everything from order and invoice creation through to purchasing and sales, warehousing and



A perfect fit: ensuring an optimal match between digital technology and agricultural equipment – in this case, with a VR headset

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address management, as well as financial accounting and controlling. "Our software," says Torben Weber, one of the Traser's managing directors, "grows with our customers and their requirements." What might those requirements be? As it turns out, when they first sit down with the Traser team, the customers often don't even fully understand these themselves. For example, in the event of a breakdown, they don't realise that their machines could order their own replacement parts even before anyone knows that there is a problem. Or more generally, that all the things that used to require dozens of pages of labelling and extensive coordination can now be done via an app with a few taps of a finger.

Word has long since spread that a young company from Schleswig-Holstein, which has already won several innovation awards, can create effective solutions to real-world problems. As a result, Traser is now ploughing a furrow right across Europe, its rapid growth reflecting the strong demand for its customised software solutions. For some veteran farmers, the pace of this change almost seems too rapid, and even the Traser team has begun to doubt whether they are still a startup at all. To answer this question, they need only take a stroll down the corridor in their own office building. At the far end, they will still find the true mark of every startup, the place where their very first ideas were hashed out – the obligatory room with table football and a dartboard on the wall. (bs) //

**"We founded Traser because we have our own ideas about efficient working."**

*Torben Weber, managing director, sales and marketing, Traser Software GmbH*

[traser-software.de](https://traser-software.de)



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# For visionary entrepreneurs: Schleswig-Holstein



If you're one of the many people who love to visit Schleswig-Holstein and hate to leave - why don't you just stay? Schleswig-Holstein is an excellent place to live and work and you'll find optimal conditions for your company here - not to mention a relaxed way of life. We can help you establish a branch office or startup a company.

See you soon in Schleswig-Holstein.

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