

Sustainability

Our passion: Developing sustainable solutions

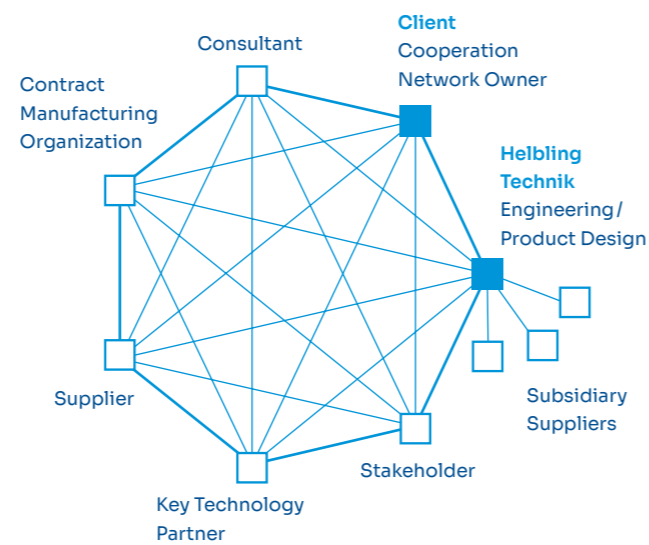


Innovation, together we do it

The world is constantly changing. New insights, and new goals demand effective solutions tailored to requirements. Long before innovation became a buzzword, we recognized its importance, and began to specialize in working alongside clients as a dynamic, reliable partner, helping them to secure competitive advantage in a changing landscape. Sustainability has become a priority socially and politically, and this trend towards sustainability will continue to intensify. This challenges companies to rethink their entire value chain systemically and sustainably. With Helbling Technik, sustainable innovations succeed.

From ideation to market launch

Helbling Technik employs over 500 professionals including engineers, computer scientists, physicists, and human factors experts who have been researching sustainability for years. Cross-functional teams develop a wide range of innovative and sustainable products for our clients. Helbling operates innovation centers in Switzerland, Germany, Poland, the USA, and Asia to support clients in the transformation towards sustainability and in developing the next generation of sustainable products from ideation to market launch.



Cooperation Network
Own illustration



Our approach to sustainable solutions

We take responsibility

“Innovation to shape a future worth living for”. In its mission statement the Helbling Group commits itself to being embedded in society and a complex environmental system. From this, we derive the responsibility to support the principles of sustainability as a company. By defining six building blocks for operationalization of the Sustainable Development Goals selected and through sustainability engineering: the development of systems and products that use both energy and resources sparingly in their life cycle from production to disposal.

We work on sustainable solutions for the future

Helbling’s vision: Successful sustainable products and systems must be an intelligent combination of available technologies, including but not only “green/clean” technologies. Using a multidisciplinary approach is a key success factor to generate smart sustainable solutions. Helbling has been doing this successfully for decades.

Together with our customers, we develop innovations that pave the way to Net Zero, support society’s social goals and at the same time ensure healthy growth for companies. This requires a systemic approach that reconciles the different objectives: we call it system engineering.

In multidisciplinary teams and with the involvement of stakeholders and external partners, innovations which enforce sustainable change succeed.



Responsible innovation – we rise to the challenge

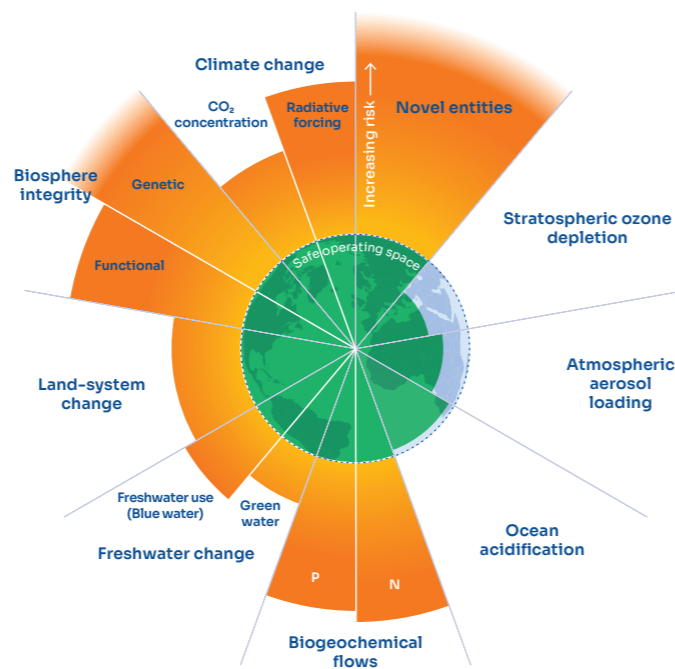
Achieving sustainability must be a primary goal of companies, all the more so as this target is also politically driven by the legal framework. ESG¹ and SDG² are not just buzzwords, goals can be achieved through targeted measures. The world is facing great challenges. We are aware of them.

Planetary boundaries

As brought to light by the Stockholm Resilience Center, humanity is with no doubt already exceeding some of the 9 planet boundaries. The Intergovernmental Panel on Climate Change has also made clear the urgency to act in order to limiting our greenhouse gas emissions and to increase our resilience regarding climate change.

The traditional economic system of using natural resources as we do today cannot be sustained. Dramatic changes need to and will happen in terms of mobility, our way of life and the consumption of products and services. The challenges to ensure humanity's long-term prosperity include the preservation of biodiversity, a fair and reasonable use of natural resources, minimizing global warming and all its consequences for the ecosystems.

Based on the 2015 Paris Agreement, most of the countries in the world have defined ambitious carbon reduction targets, the so-called nationally-determined contributions (NDCs). Actions are also taken at regional level, as for example the EU Green Deal and its "Fit for 55 package" which aims to update EU legislation to align it with climate goals.



The nine planetary boundaries

Credit: Azote for Stockholm Resilience Centre, Stockholm University. Based on Richardson et al. 2023, Steffen et al. 2015, and Rockström et al. 2009



The UN Sustainable Development Goals



The SDGs as compass for sustainability

In 2015, the same year in which the Paris Agreement was endorsed, the United Nations adopted the 17 Sustainable Development Goals and the 2030 Agenda – “plan of action for people, planet and prosperity”. The SDGs provide a framework for sustainability applicable to countries, organizations, and companies. Due to their clear and concise structure, the SDGs have become a tool which has spread very quickly globally. Helbling Technik is also guided by the SDGs and helps companies support selected SDGs.

Sustainability-related demands for businesses come from various sides

They come from consumers, who are becoming increasingly concerned about their environmental impact, from price volatility or a shortage of resources which are limited and/or not evenly distributed, from investors and financial institutions which include ESG

aspects in their investment strategies, from governments which put in place more and more regulations in order to fulfill their sustainability commitments, for example related to the Paris Agreements or the SDGs.

Corporate sustainability strategy and ESG frameworks and standards

Many businesses have already developed their specific sustainability strategy in line with the SDGs. ESG frameworks and standards such as GRI³, SASB⁴, CDP⁵, TCFD⁶, SBTi⁷ enable these strategies to be shaped and their effectiveness in delivering tangible results to be monitored. The increasing use of these frameworks greatly limits the possibilities of greenwashing and allows a better understanding and comparison of the non-financial performance of companies. To ensure longer-term competitiveness, thinking about ones business model in a sustainable way is becoming more and more important.

Carbon emissions

Scope 1

Emissions from operations under facility's control, including onsite fuel combustion

Scope 2

Emissions from usage of electricity, heat and/or cooling purchased from third parties

Scope 3

Emissions not directly under the control of the company, like for example purchased goods and services or the use of their products by the consumers.

Sources of carbon emissions

GHG (Greenhouse Gas) Protocol

1 Environmental, Social and Governance 2 Sustainable Development Goals 3 Global Reporting Initiative 4 Sustainability Accounting Standards Board 5 Carbon Disclosure Project 6 Task Force on Climate-Related Financial Disclosures 7 Science Based Targets Initiative – Net-Zero Standard

We develop sustainable solutions

Sustainability has become a pressing issue for all sectors of the economy. Some success stories along the way are encouraging: like the rise of renewable energies, the reduction of acid rain and the shrinking of the ozone hole. The creation of a legal framework has also set an important milestone on the road to sustainability. At Helbling Technik, we are one step ahead of trends and developments in the field of sustainability and take into account the latest legal frameworks. With our holistic approach based on lifecycle thinking, we work with our clients to develop solutions that continue the success stories.

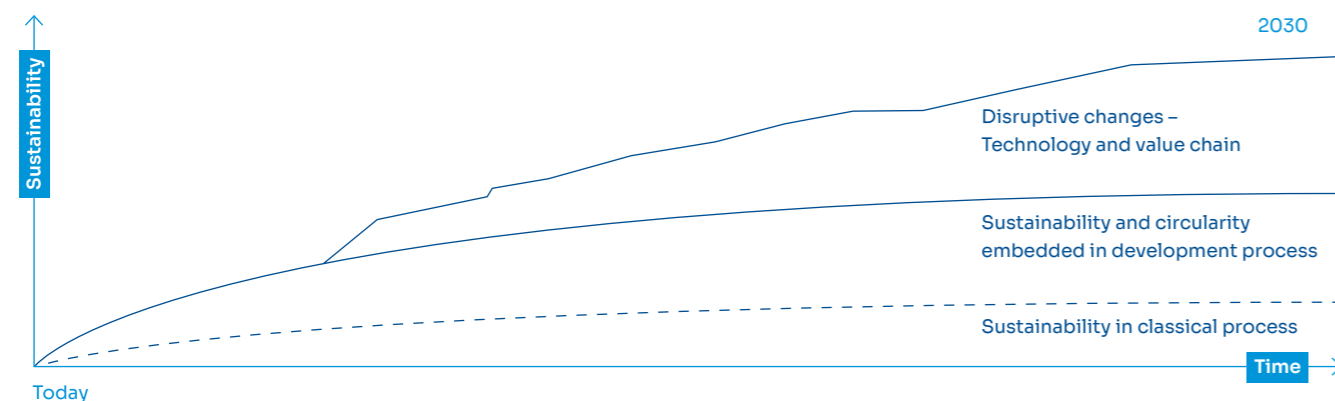
Sustainability – built into the customer strategy

For successful implementation, sustainability must already be built into the company strategy – it is too late if it is only thought of during product development. Helbling is uniquely and ideally positioned to do this.

The challenge of making everyday systems and products more sustainable must be addressed on two equally important fronts. First by innovations and breakthrough changes in technologies and the value chain, and second by the integration of sustainability aspects into the product development process. Without addressing these two components, ambitious sustainability goals cannot be achieved. At the same time, it is clear that whoever can adapt fastest to sustainability pressures, or even harness them, will gain a competitive advantage.

Take full advantage of available solutions through EcoDesign

From the development of the product concept, through the transition, on to the use phase and end of life, sustainability is taken into account consistently. The principles of EcoDesign allow rapid identification of those aspects which promise the greatest effectiveness. They bring an additional perspective throughout the process, revealing opportunities for innovation which would have remained hidden by using a traditional process. This allows new and existing products to be optimized holistically in a very effective and efficient manner. All of our recognized, highly qualified specialists avail of the necessary skills obtained from specially developed training courses, such as for EcoDesign.



On the road to sustainability through disruptive change and EcoDesign

We understand innovation risks and know how to benefit from sustainability advantages

There is strong momentum in innovations for sustainability, be it in materials with lower environmental impact, new recycling technologies, more energy-efficient technologies, or value chains and business models which are more in line with the principles of the circular economy. In addition, a number of technologies which are not explicitly labeled as “green” can be applied, such as artificial intelligence (AI), which is being used in the construction sector to optimize energy efficiency. This creates challenges in using innovation and making disruptive changes.

To exploit these innovation advantages in the highly complex and dynamic field, experts are needed who monitor trends and technologies, who maintain a wide network among researchers, regulators and the industry, and who bring their knowledge into the organization. Experts who understand and appropriately address the associated risks by drawing on strong scientific and engineering competencies. Helbling has been building up this expertise for many years. Today, we can draw on specialized teams as well as our own tools and databases to carry out sophisticated developments of sustainably designed products and to provide consulting support to project teams implementing EcoDesign.

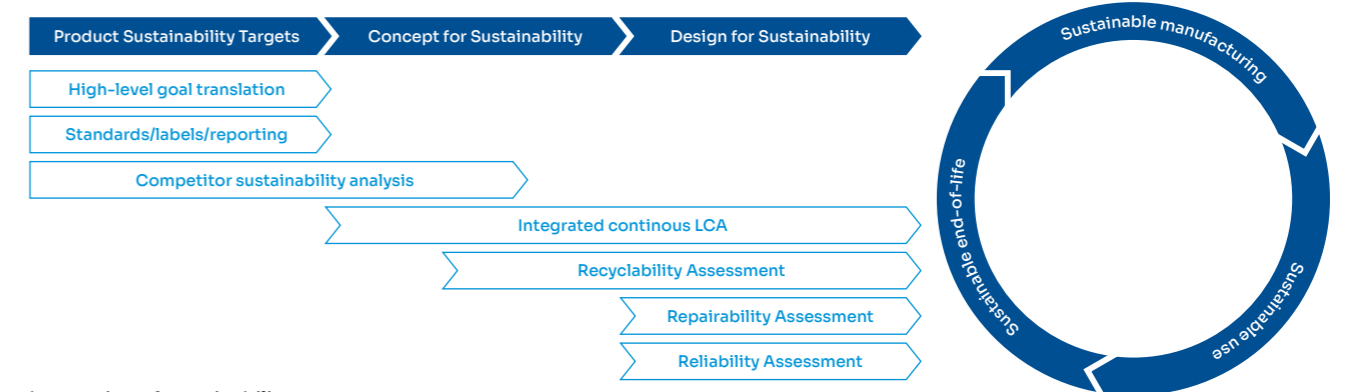


Our holistic approach combines deeply embedded basic knowledge with profound expertise

Deeply embedded basic competence, a sharpened awareness and specialized knowledge are all crucial for implementing sustainable product development holistically. Thanks to these carefully built foundations, today’s optimally-composed project teams work with our clients to identify opportunities which align with their business model and relevant market needs and translate these into concepts for new, attractive and fundamentally sustainable products, and develop them to market maturity.

Together with other companies in the Helbling Group, we are able to go well beyond actual product development and can offer well-rounded solutions and projects along the entire value chain, providing additional services such as the development and implementation of strategic plans, organizational development, marketing, and sales.

Sustainable System Development Process



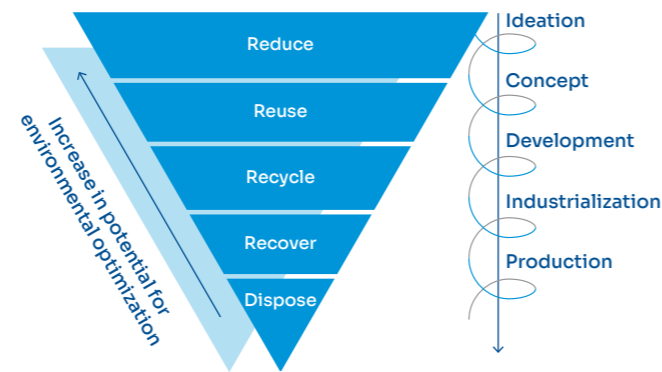
Integration of sustainability aspects into the development process

Sustainable solutions development through interdisciplinary cooperation

Holistic and systematic thinking is the central approach to designing sustainable innovations. Helbling combines many years of development experience with experts specializing in sustainability to build sustainable products and services through interdisciplinary collaboration.

Engineering the future

At Helbling, we rethink traditional, linear innovation processes in a systemic and holistic way. In addition to user benefits, the focus must be on the impact on the environment and social systems. Multi-solving principles are used to develop solutions which do justice to the complexity of the multiple dimensions of sustainability and help implement our clients' sustainability goals. In doing so, we keep a circular economy in mind as our goal and avoid greenwashing.

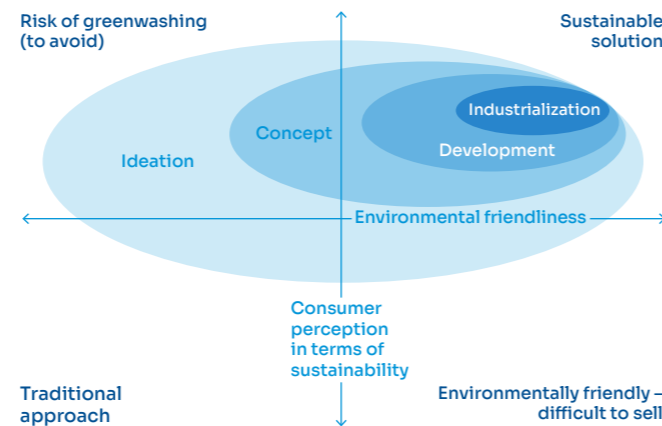


The earlier sustainability is taken into account in development, the more effective it is.

We offer two levels in our projects to achieve sustainability:

Level 1: Development of devices according to sustainability criteria

Regular sustainability reviews during important development milestones reveal weak points and enable development in the direction of greater sustainability, taking into account the criteria of energy consumption, materials used in relation to CO₂, availability of resources (e.g. rare earths), avoidance of toxic substances, and reparability.



Avoiding greenwashing in system development

Level 2: Development of devices optimized for sustainability and circularity

This approach takes hold early in the concept phase. We look for radical, disruptive innovations which incorporate the principles of the circular economy and sustainability in their concept. Traditional business models are rethought in the process. Systematic evaluation of concepts with life cycle assessment, continuous from concept to industrial implementation accompany the innovation projects.

Approach & Methods applied

Innovation

- New business models/opportunities
- Circular economy

Simulations

- Component development, e.g. use of materials
- System development, e.g. consumption optimization

Life cycle assessment

- Connection with 3D CAD
- Material and process database

Materials science

- Comprehensive in house experience

Equipment development

- Recyclable construction
- Safe materials
- Upgrade possibility
- Repairability

Sustainable packaging

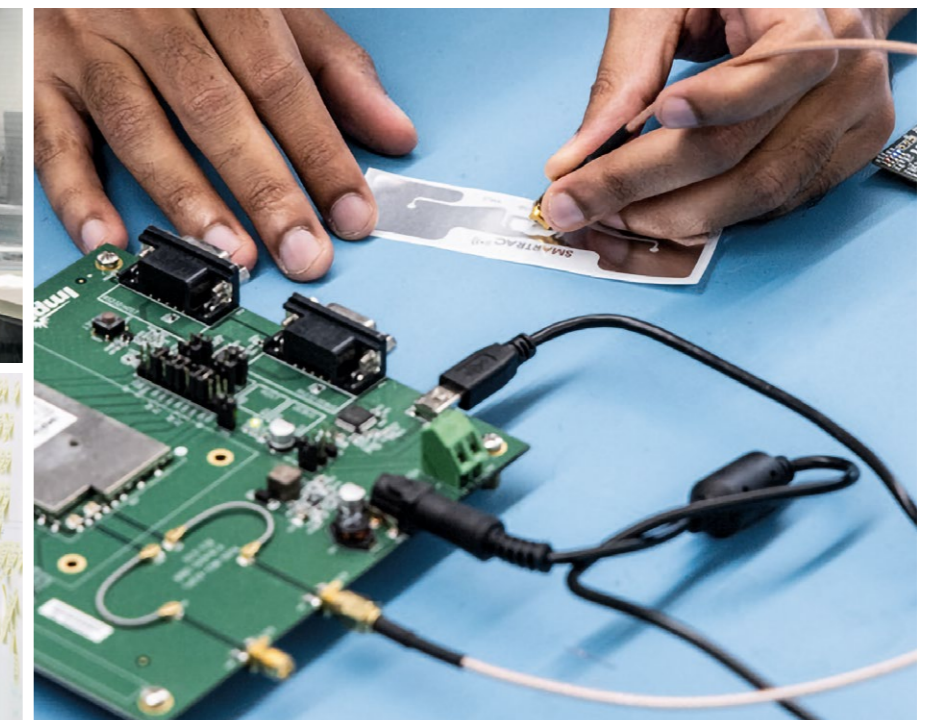
- Suppliers network

System/component durability

- Database of electronic components
- Software to model service life

Plastics engineering

- Design for low impact materials
- Use of post-consumer recycling



Benefits for our clients. Why Helbling?

Experience

Comprehensive portfolio of reference projects. Skilled professionals available for long-term collaboration and/or short-term support.

Interdisciplinarity

Holistic approach using the engineering and consulting know-how within the Helbling Group.

Resources

Ready-to-go teams who can meet challenging project goals and boost our clients' flexibility.

Independence

Lower project risks thanks to technologically neutral, independent ideas, concepts, and technology selection.

Intellectual property policy

Foreground IP is assigned to the client. Helbling holds no background IP.

Infrastructure

Professional design infrastructure. Qualified in-house lab infrastructure for feasibility demonstration, performance testing, and product design verification.

Network

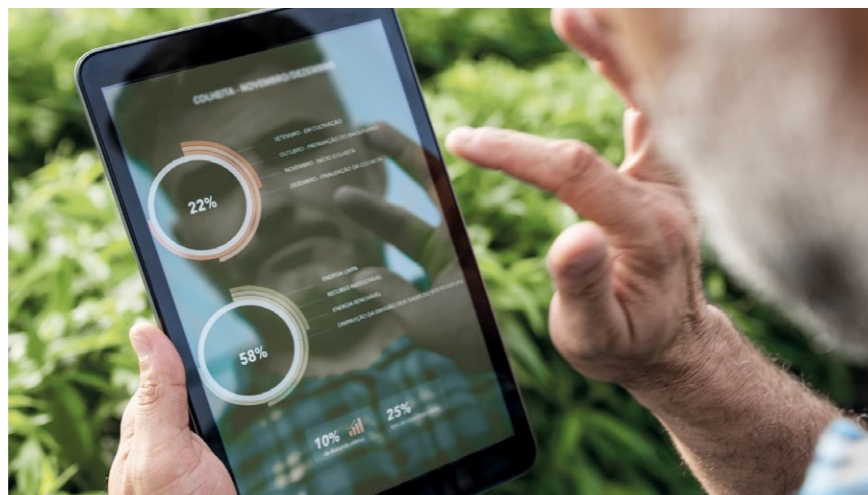
Independent network of research, vending, and manufacturing partners, providing access to expert panels for executing and reviewing usability, sustainability and manufacturability.

Methods & quality assurance

Tried and true development methodologies and processes which comply with industry standards (ISO 9001 and ISO 13485). Look beyond established structures and innovate from a neutral standpoint to reduce project risks.

Sustainability expertise

Helbling has been training its employees in ecodesign and sustainability for over 10 years and is ISO 14001 certified.



Proven quality management systems and processes for your project

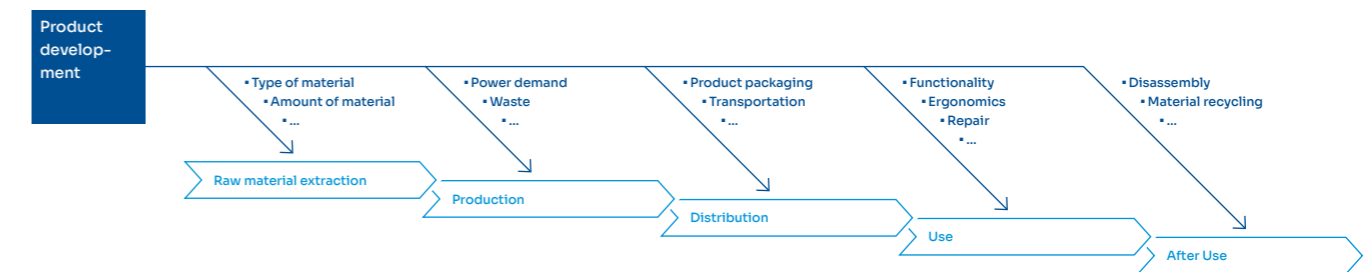
Certified quality management system

Helbling Technik is certified according to EN ISO 9001, EN ISO 13485 and EN ISO 14001. Our quality management system guides our project management and development efforts in all our engineering faculties. EcoDesign is an integral part of Helbling's EN ISO 9001 development process and is therefore mandatory in our quality process.

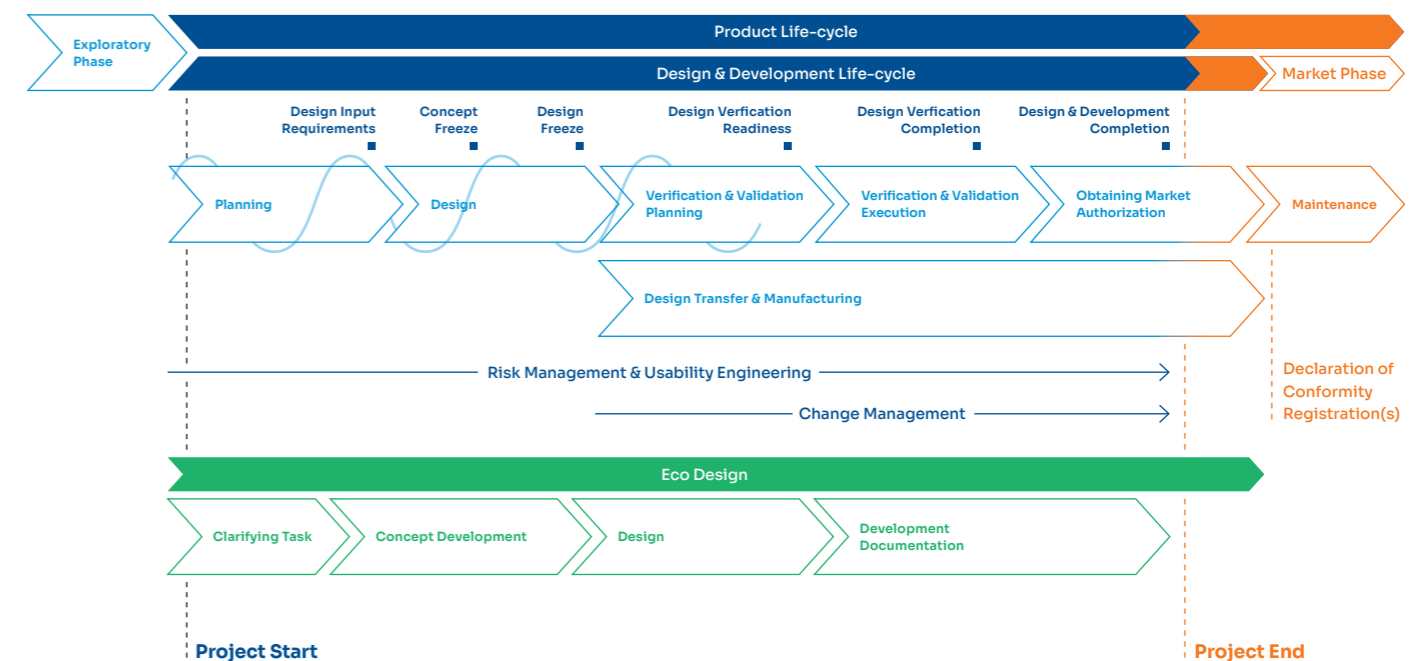
Helbling has a range of sustainability assessment tools at its disposal to support client projects.

In addition, Helbling supports clients in reporting and metrics of environmental aspects:

- **Regulatory:** ROHS, REACH, WEEE ...
- **Environmental labels and declaration (Type I, II and III):** Knowledge of requirements and consideration in development. Support in the preparation of environmental product declarations.
- **Metrics:** (CO₂ equivalent, biodiversity loss, use of non-renewable resources, material circularity indicators ...)



The development process considering sustainability



Eco Design & Development Process Overview

Environmental footprint reduction through solution mapping

To evaluate the environmental footprint of products and help reduce this, Helbling works with solution mapping, established tools such as the Material Circularity Index (MCI) and data from material suppliers and manufacturers to identify starting points.

Substantially reduce waste generation through prevention, reduction, recycling and reuse

To support Nestlé's journey toward a more sustainable business, Helbling created a mapping of possible sustainability measures for the in-home coffee machine business. This is an effective tool to enable the development of new coffee machines with a lower environmental footprint.

Around 50 ideas for improving coffee machines were collected for this purpose, including alternative water heater technologies, plastic parts production techniques, materials, an electronics concept and injection molding machine types. A holistic approach was used to evaluate these ideas in terms of sustainability (e.g., CO₂ footprint, material circularity), but also regarding desirability, technical feasibility and economic viability.

Evaluate the environmental footprint through the fitting tools

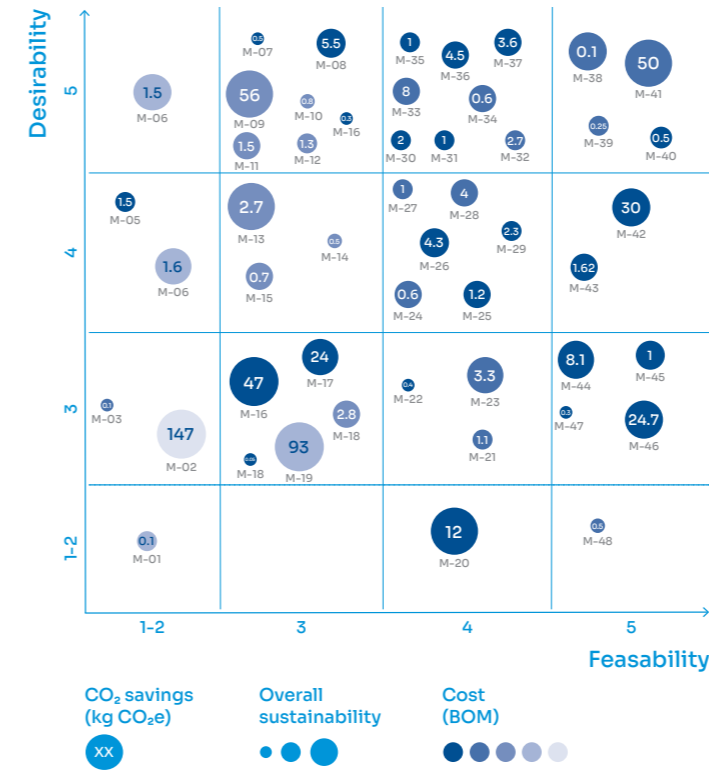
In order to quantitatively assess the environmental footprint for the Life Cycle Assessment (LCA) of products, Helbling uses data from material suppliers and manufacturers so as to obtain data which is as close as possible to the reality, but above all to identify further measures which need to be taken to reduce the environmental footprint.

Another tool to additionally assess how well solutions are suited for the circular economy is the Ellen McArthur Foundation's MCI. This measures the ratio between the consumption of virgin material and the generation of unrecoverable waste and is a good complement to the LCA results to provide a comprehensive overview of the environmental sustainability of the products which we design.

This work supports global efforts towards responsible consumption and production, through measures which use resources efficiently and which minimize non-recyclable waste, such as:

- Optimizing component topology to minimize the amount of material used.
- Using PCR (Post Consumer Recycling) material where it is possible and optimizing design for more efficient recycling: giving preference to materials that can be recovered in standard recycling streams.

The results of this project also provide a quantitative basis for informed decision-making regarding sustainability.



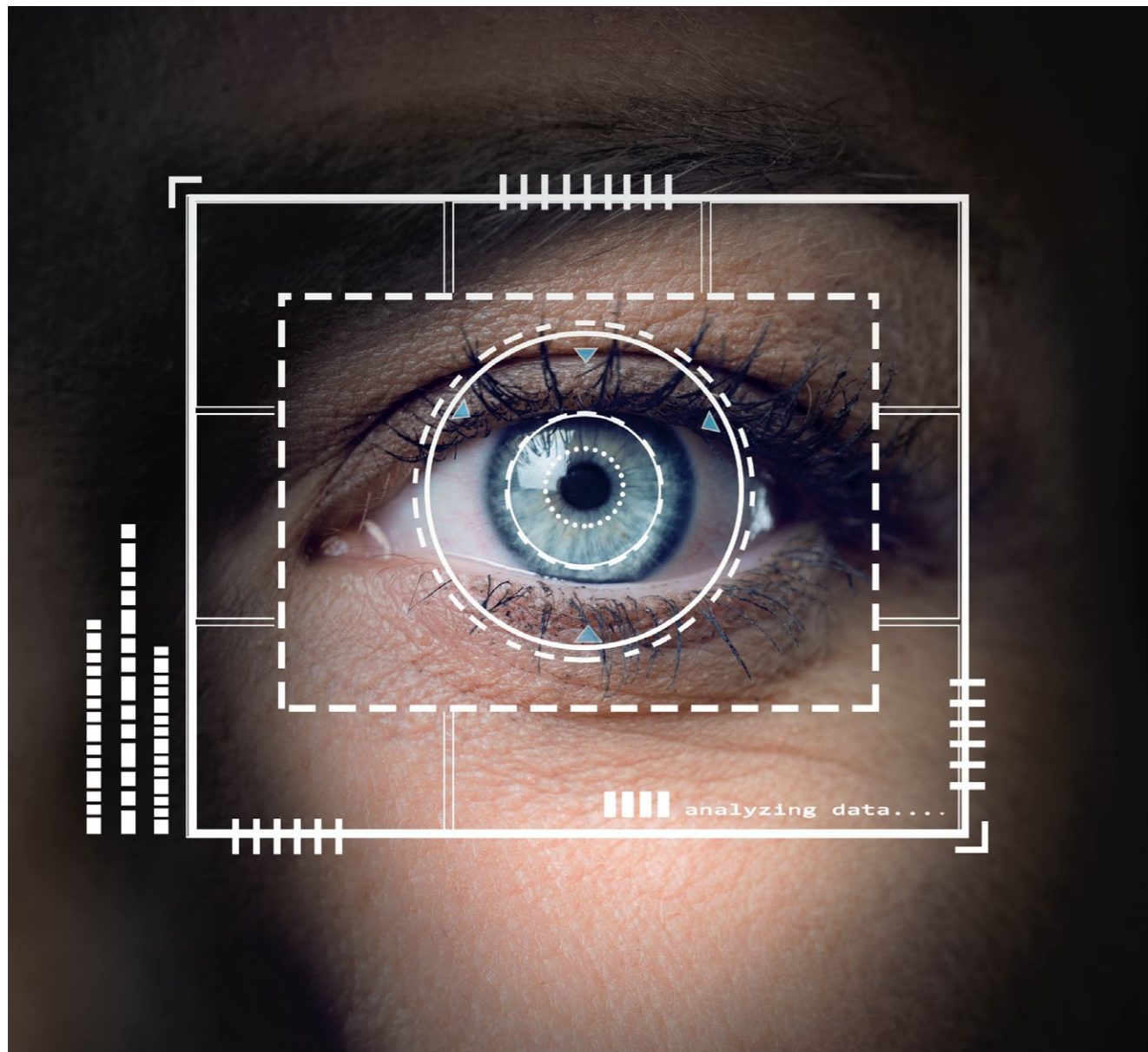
Project: nesQino
By using the device developed by Helbling for the nesQino system, a healthy drink can be prepared with minimal use of resources. The short preparation time is achieved through an optimal mixing system. The user can select the optimal temperature via the app, thus no heating energy is wasted by cooling.



Project: Qiagen
In the development of Lab Automation Systems, the improvement of sustainability is mainly achieved by reducing the electricity consumptions, avoiding travel for services by remote access and less consumption of disposables. To minimize the depletion of minerals and metals in the production of the devices is also an important driver in the design.

Advanced disease management through a digital health-platform

In order to better manage glaucoma, a disease which causes irreversible damages to the optical nerve, Helbling Technik has been requested to develop a disruptive product featuring extreme miniaturization and a previously unachieved ability to provide continuous and autonomously generated patient data to medical professionals. This will enable preventive care and remote patient monitoring, thus improving clinical outcomes and saving healthcare costs.



Focus on people – combined with state-of-the-art technology development

Helbling Technik has been developing medical and healthcare devices for more than 20 years, helping to ensure healthy lives and promote well-being for all people of all ages.

In developing medical and healthcare devices, Helbling is committed to ensuring that the medical and healthcare products developed have a high level of adherence among patients. Combined with cutting-edge technology development, solutions can be found which are technically robust as well as safe and easy to use, promoting patient confidence. They deliver the intended results for efficient therapies and diagnostic functions, creating added value for patients and society.

The scope of appliances ranges from diagnostic devices for early recognition of potential health issues (e.g. blood glucose sensors for optimized diabetes management or retina degeneracies analysis devices) to patient-centric therapeutic devices (such as hearing aids or implanted medication pumps for pain management) to digital solutions – such as an e-health platform with physiological algorithms enabling the provision of predictive and personalized medicine.



Development of a wireless implantable intraocular pressure sensor (WIPS) for glaucoma patients. Through the transmitted data, the medical team can evaluate the effectiveness of current treatments for patients in real time.

Preventing diseases instead of curing them

Our clients aim to transform the management of specific diseases, such as glaucoma, and to conquer a new frontier in eHealth through digital “disease intelligence.”

Helbling Technik developed an active and completely autonomous wireless implantable pressure sensor which enables physicians to take targeted preventive action and stratify the course of disease. The large amounts of data generated are actionable in the short term and predictive in the long term.

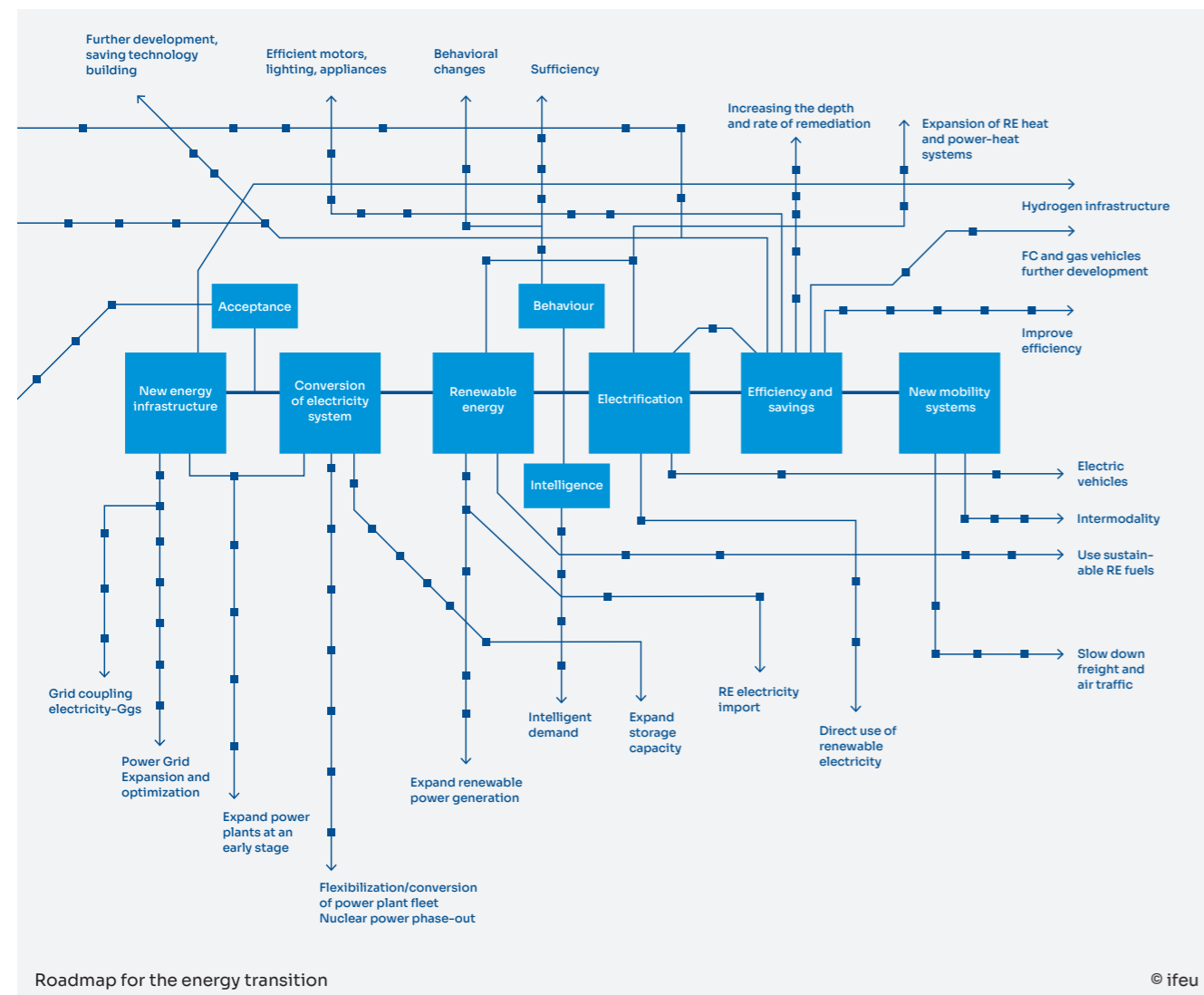
Our work included extreme miniaturization of all components of the active implant, wireless power and data transmission with significantly longer range than the state of the art, and the installation of an internal power supply with a long service life. The rich data stream is processed in a cloud data infrastructure by artificial intelligence. This enables new diagnostics and disease management insights for the delivery of better, more personalized, and cost-effective healthcare.

The interdisciplinary project team at Helbling Technik applied its expertise in the fields of project and medical quality management, systems engineering, mechanics, microtechnologies, electronics, software, embedded software, cybersecurity, physics, optics, material science, and usability engineering. The team was enriched by medical, clinical, and manufacturing specialists from our international partner network.

Within eleven months, preclinical prototypes and data infrastructure were developed and tested. The promise of this technology was successfully demonstrated in a study.

Coping with climate change: Transitioning to sustainable energy

One of the most urgent challenges of our time to counter climate change is the transformation of the energy system away from fossil fuels and towards renewable, clean forms of primary energy sources. The UN's SDG 13 makes the urgency clear and puts the responsibility on society in particular. The SDG 7 emphasises the transportation sector, only 3.4% of which uses modern, renewable energy sources and thus has an enormous amount of catching up to do. In addition, the electricity market also has a lot of room for improvement, as the share of renewable energies is only about one quarter.



Simplifying energy building renovations

Through the development of a service platform for renovators, homeowners receive support in planning, financing and implementing their sustainable energy solution.

Paving the way for ecological renovations

Today, new buildings and their energy solutions are usually planned and built according to current sustainability principles. The incentives are set in such a way that the ecological solution is also the economic one, and the execution is often the responsibility of a planner. In contrast, the challenge for existing properties remains great. Refurbishments prove to be complex technically as well as in terms of coordination and have a long payback period; at present, there are hardly any providers who can advise property owners on the numerous issues and offer them an attractive overall package from a single source. A regional energy provider is rising to the challenge and looking for ways to extend the path to ecological refurbishment from a beaten track to a convenient promenade. Together with Helbling, a service platform concept was developed to help homeowners plan, finance, and implement their sustainable energy solution.

Business model canvas

Brokerage platform for energetic building renovations

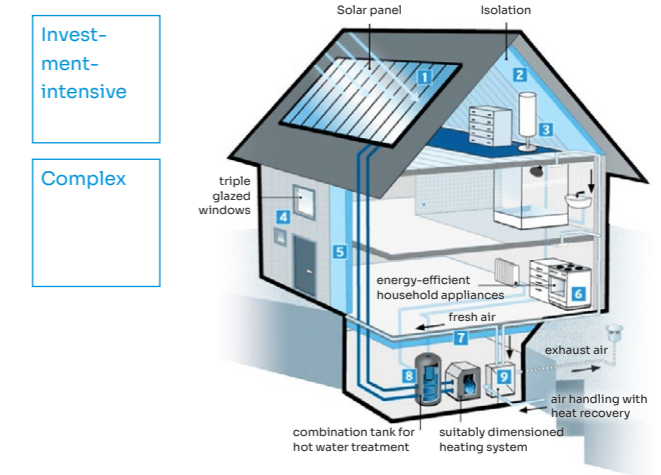


A business model canvas was used to quickly visualize, challenge and refine the business model behind the brokerage platform.

A sound concept for advancing the energy transition

Helbling supported the project from the vision to the service concept with a solution kit. Numerous interviews were used to filter out the challenges, analyze the situation on the refurbishment market, and identify possible starting points for the service platform. Together with Helbling, stakeholders from technology, politics and finance then jointly generated solution approaches and turned them into concrete concepts in several workshops. The result is a well-founded service concept for a platform that can be used to acquire, design, conceive, and project manage refurbishment projects. In the sense of a broker, the projects are bundled and passed on to service providers. And most importantly, the platform is to be implemented among energy suppliers, authorities and financiers with the shared idea of using it to advance the energy transition.

Sustainable energy solutions



Making buildings more energy-efficient involves many aspects and appliances and therefore many partners from finance to execution.

Decarbonizing vehicles in rail transport

Achieving the customer's climate targets requires the replacement of the thermal drives of existing rail vehicles in the medium term. A feasibility study showed which variants of alternative drives could be implemented for the conversion of a construction service vehicle, taking into account technical, operational and economic aspects.



Opening up opportunities through a feasibility study

In the medium term, the operator's climate targets for public transport require the replacement of combustion engines in existing vehicles, some of which have only just been procured or have not yet reached the halfway point of their service life. A complete replacement of these vehicles is out of the question for ecological and economic reasons. Therefore, the question arises under which conditions these vehicles can be retrofitted with a sustainable type of drive in order to increase their energy efficiency and reduce their CO₂ footprint by using renewable energies. Within the course of a feasibility study, the possibilities could be demonstrated by means of a concrete example.

First, it was investigated whether the realization of a battery or hydrogen-electric drive or hydrogen combustion engine is possible under the current requirements for power, range and installation space. The feasible concept designs were further analyzed in terms of their technical feasibility and examined in greater detail in specific areas. The economic viability of a vehicle conversion was investigated by means of a cost estimate for engineering, conversion and operation of a prototype and conversion of the production vehicles. Finally, the essential risks of a corresponding vehicle conversion were worked out together with a provisional registration concept for a re-registration.



Project: Synhelion
CO₂-neutral fuel from air and sunlight: In commercial aviation, there are no technologies in sight which could replace combustion engines. Synhelion's mission is to produce synthesis gas from the commodities CO₂ and water using process heat from sunlight, which can then

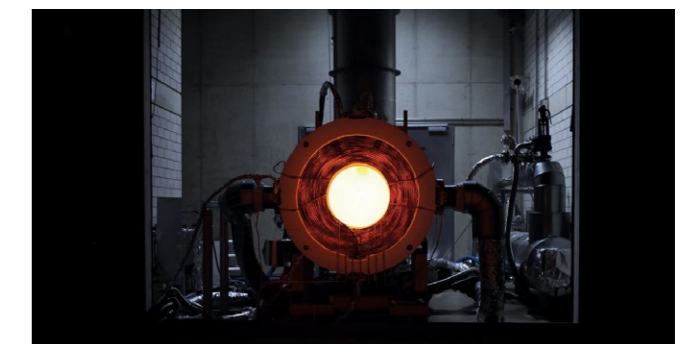
75% less energy required due to new drive

In order to reduce the energy requirements of the rail vehicle, the entire drive system was redesigned.

We were able to show that the energy requirement of the construction service vehicle could be reduced by up to 75% with a battery-electric drive. A hydrogen-electric drive with a fuel cell could reduce the energy demand by about 50%.

Fast charging or refueling of the vehicle is essential for the required two-shift operation. A hydrogen electric vehicle could be refueled in a very short time at the cost of additional refueling infrastructure. The solution is a single battery electric vehicle with overhead line access, thus bypassing additionally required charging infrastructure and comparatively long charging times.

The Swiss rail network is currently over 99% electrified and, thanks to efforts by operators, is expected to be 100% powered by renewable energy by 2030. This paves the way for CO₂-neutral and low-emission operation of the previously thermally-powered vehicles.



be processed into synthetic fuels such as kerosene, thus enabling CO₂-neutral air transport. Helbling supports Synhelion in the transition from lab to practice with know-how in system integration and scaling.

Access to clean sanitation: Reinvent the Toilet

One of the main goals of the Bill and Melinda Gates Foundation is to create sustainable installations in developing countries – for people with low income and no access to clean sanitation. Helbling Technik has met the “Reinvent the Toilet” challenge by developing a toilet system without a water connection for in-home applications.

Flushing without a water connection

The Water, Sanitation and Hygiene program of the Bill and Melinda Gates Foundation initiated the “Reinvent the Toilet” challenge to stimulate innovations to manage human waste in a sustainable way and to provide a safe and effective solution for the 3.5 billion people suffering from poor sanitation. Within the Challenge we developed a toilet system without any water connection for in-home applications. The whole system has a small footprint, which makes it suitable for use in rooms with limited space. The functional design with robust and easy-to-clean

components enable it to be used worldwide. Among other aspects, it was a great challenge to produce clean waste without using a water connection. In the implemented concept, this is achieved in a sustainable way by the use of a closed water cycle. This work supports the global effort towards SDG 6 – clean water and sanitation for all, based on a “reuse” strategy. In this toilet concept, the flushing water is continuously filtrated and reused in order to avoid consuming any fresh water and to operate without any sewage infrastructure.



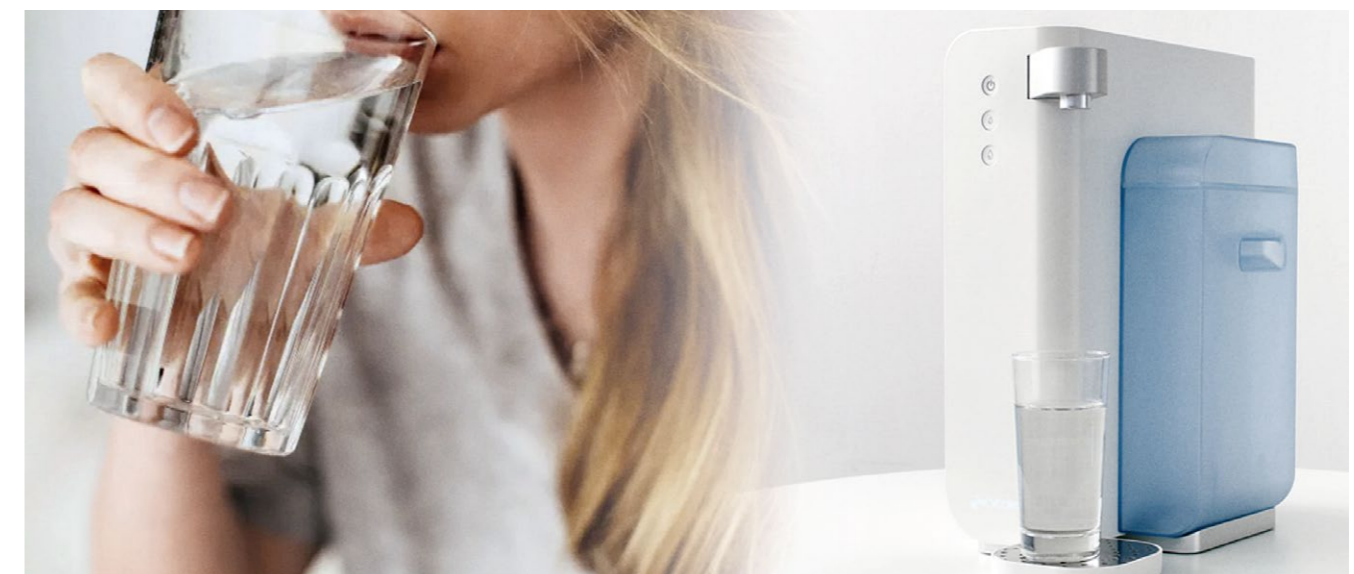
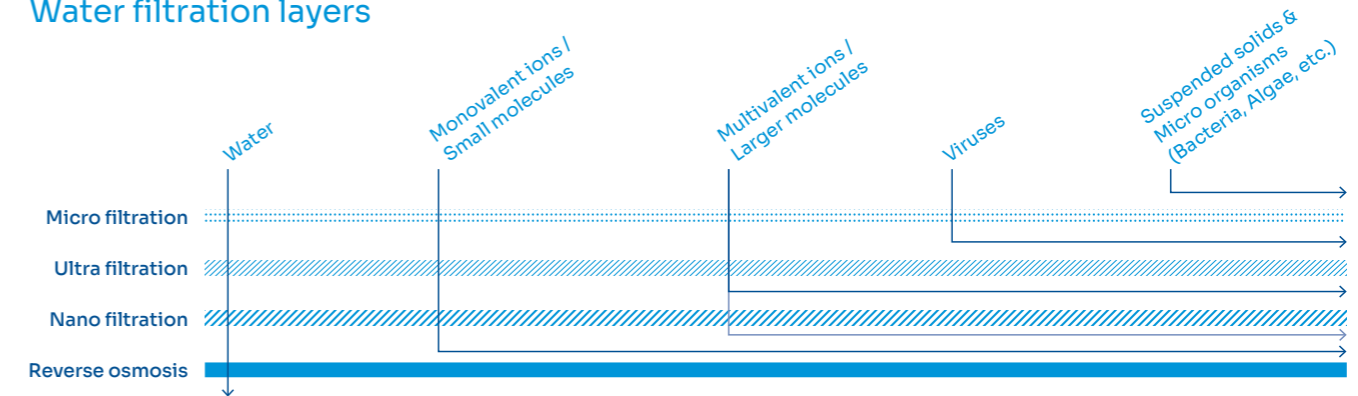
Access to safe drinking water through water filtration

Pure water without a water connection

One in three people worldwide do not have access to safe drinking water, Helbling Technik, together with the company Evodrop AG, a young Swiss start-up, has undertaken a joint effort to produce environmentally sustainable water filters for clean, naturalized water which is safe and free of microplastics and other contaminants. The system consists of a

water purifier without a water connection and in the form of a tabletop device is used in households and/or commercial premises without the need for cumbersome installation. The different filter layers of the tabletop device provide clean drinking water in environments without running water.

Water filtration layers



Boiling water is a possible way to sanitize water. Helbling has developed a flow-through-heater to reduce the energy lost in the system. The heater can heat immediately, without heat-up time,

and satisfy the highest efficiency standard (A+++). The heater has been developed to be compact and easy to integrate in most design.

Reduction of emissions in the industry

From the increasing pressure to work in a resource-saving way also in production, a market advantage can be derived through technology choices for manufacturers of production equipment. A broader perspective provides incentives to question common assumptions and leads to innovative products.

Today, sustainability criteria are very important in the development of everyday products. Increasing attention is therefore also being turned towards production equipment. Manufacturers are expected to be able to provide well-founded information on the environmental impact caused and to minimize this. SDG9 also calls on industry to improve resource efficiency and to use environmentally compatible technologies.



Osterwalder – World's first electric multi-level powder press for high pressing forces of up to 2,000 kN

Production machines are often used intensively for many years and are usually much easier to repair than consumer goods. In most cases, analysis shows that the greatest leverage lies in optimizing resource and energy efficiency during the utilization phase.

The Osterwalder company has taken up this challenge and in 2018 launched the OPP2000, the world's first electric multi-level powder press for high pressing forces of up to 2,000 kN. It is based on a completely newly developed hybrid electro-mechanical-hydraulic platform and is geared to next-generation requirements.

Helbling Technik played a leading role in the ideation phase, later became an integral part of the development team and was jointly responsible for the implementation of new and innovative concepts. In collaboration with Osterwalder, Helbling Technik thus finally solved the problem of developing a sustainable powder press.

Presses of this class were previously only feasible with hydraulic or mechanical drives, which have a significantly higher energy consumption due to the technology used. A purely electrically-driven powder press with a pressing force of 2,000 kN would be technically feasible, however it would not be economical.

With this machine, all previous benchmarks for powder press machines have been redefined – the machine achieves an operational efficiency increase which is unique. Energy consumption has been reduced by 70%, and machine availability is 98%. Machine parts such as gears or sleeves can be produced at greatly-reduced manufacturing costs. Finally, the switch to hybrid-electric drives also increases precision, repeatability and process reliability. This enables customers to produce even complex parts.

The example therefore shows impressively that ecological and economic aspects do go well together and that the willingness to take sustainability aspects into account leads to solutions which are convincing across the board.

Project: BHP – Bruggen und Partner AG

As a software provider, Helbling takes sustainability into account in the life cycle of software products as well as in hardware. This "Sustainability by Design" process aims to use energy-minimizing services. In a cloud environment, for example, the environmental footprint can be quantified and minimized.

Helbling also supports companies in becoming more sustainable with software solutions. For the company BHP – Bruggen und Partner AG, Helbling created an online platform to conduct and document sustainability analyses of companies in a fund portfolio and to simplify the subsequent investor dialogs with the companies.

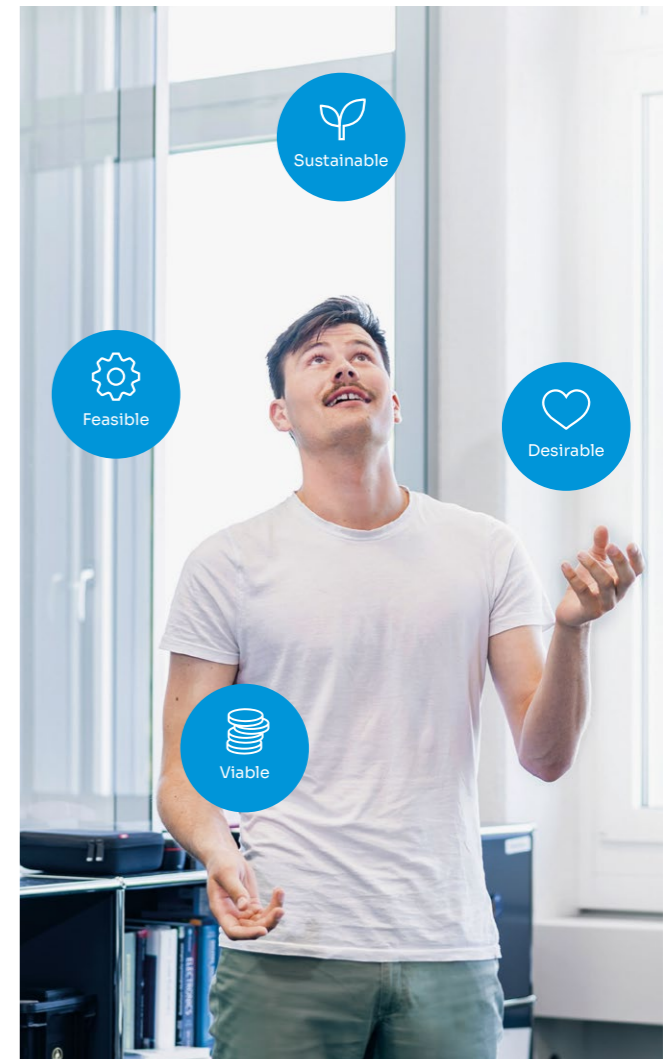
Outlook sustainability – the comprehensive challenge today and in the future

In regard to sustainability Helbling's vision is to be the leading company providing services throughout the value chain to enable our clients to master the important transformation towards a circular and sustainable business.

For Helbling this mainly means driving technology, design and innovation of systems such that they use energy and resources at a rate that does not compromise the natural environment, or the ability of future generations to meet their own needs.

In close collaboration with our clients we will continue to deliver sustainable innovative solutions in our projects from ecodesign to bio-plastics, from packaging to recycling, from life-cycle assessment to sustainable business models.

Also in our own operation we aim to reduce emissions for business trips, suppliers and infrastructure for example by installing solar panels at some of our locations. Sustainability is in our DNA, as it has been deeply embedded in our way of working for decades. Contact us – we are looking forward to collaborating with you to tackle your sustainability challenges.





Helbling Group

Established in 1963, the Helbling Group has international operations and positions itself as an interdisciplinary nexus of engineering and consulting expertise. With independent ownership, the Group is run by 36 managing partners and employs more than 620 staff at locations in Switzerland, Germany, Poland, the USA and China. The Group's main focus is on providing selected services in the fields of innovation and product development, management consulting, mergers and acquisitions, business turnarounds and financial performance management, IT, real estate, and construction planning.

helbling.ch

Helbling Technik

Helbling Technik is a division of the Helbling Group and currently employs over 500 professionals.

Our vision "Innovation, together we do it" positions Helbling Technik as a trusted long-term partner within the client's innovation network. Helbling Technik's highly trained and skilled engineers, computer scientists, physicists, and human factors experts utilize state-of-the-art development tools, processes, laboratories, and equipment to develop innovative and successful products, and support clients across the globe from ideation to market launch.

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