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#### **#cantonofbern**

Beat Brechbühl: "I'm well aware that I tend to polarize."

#### **STARTUP**

5 new, ambitious companies introduce themselves

#### **HIDDEN CHAMPION**

Photovoltaics – the perfect combination: solar systems that look good

#### **LIVING / CULTURE / TOURISM**

The Zytglogge – monumental landmark of the city of Bern

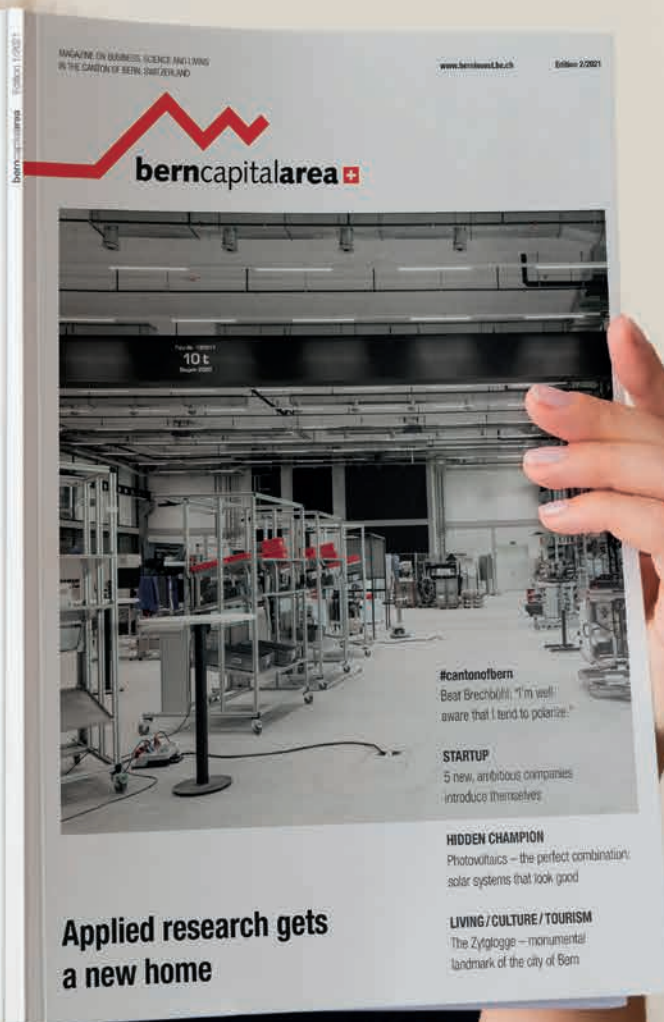
# Applied research gets a new home

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Dear reader,

It’s a wonderful feeling, stepping inside a new building for the first time. Walking into something that was conceived inside people’s heads, sketched digitally, and ultimately built out of bricks and mortar (or in this case, glass, metal, and concrete) – and soaking up the atmosphere. This summer saw the inauguration of the new Switzerland Innovation Park Biel/Bienne building – yet another milestone in innovation policy in the Canton of Bern. Read more about some of the current and planned projects and innovations taking shape in this building in our title story.

More than ever before, liveability, material flows, and re-use are at the forefront of the minds of everyone involved in new builds – themes that are at the heart of the circular economy. For SMEs in particular, this concept, often described as a mega-trend, represents a challenge and an opportunity. Read more about this and discover what is happening on this front in the Canton of Bern: in energy storage systems, in the future Swiss Battery Technology Center in Biel/Bienne, at the provider of safe alternatives to the lithium battery in Meiringen, or in photovoltaic systems in Thun.

Sometimes we can take it for granted that business leaders are committed to the Canton of Bern and our business community. But by no means always. So I am delighted that a long-standing friend and champion of business here in the canton has won the HIV (Trade and Industry Association of the Canton of Bern) Prize. Read more about the creative drive and self-perception of the Managing Partner of Switzerland’s biggest corporate law firm in this issue. And in the CEO Portrait we reveal some of the secrets of a Burgdorf-based hygiene and industrial company that is world leader in a product whose main purpose is not to be noticed.

If you often feel that time is just flying by, I recommend a visit to the timeless Zytglogge clock tower in the City of Bern. But if you don’t even have time for that, you can read all about the background and history of this city landmark in this issue of *berncapitalarea*.

Grasping the opportunities that arise in the Canton of Bern. Promoting important innovations and highlighting examples of good practice. Tackling challenges and thinking and acting with a business mindset. Taking time over things. These are just some of the tasks that my location promotion team and I work on every day. You will also find some hints on future focal themes of our work in my interview.

I hope you will find our magazine an inspiring read and wish you a successful end to the year.

Yours truly,  
Dr. Sebastian Friess  
Head of the Office of Economic Affairs  
President, Bern Economic Development Agency



# Applied research gets a new home

Innovation is one of the Canton of Bern's and Switzerland's main currencies. Research institutes such as Switzerland Innovation Park Biel/Bienne play a key role in its development. The park's new home opened in August: we take you on a tour of the new building.

Since this summer, a new building has graced the square behind Biel/Bienne train station: Switzerland Innovation Park Biel/Bienne (SIPBB). It is an impressive yet understated building with black struts and tinted glass facades. The park is a forum where researchers and specialists come together with businesses to develop innovative products and services. To achieve this, laboratories, offices, event spaces, and an industrial factory have been brought under one roof. Combining all these functions in one place was one of the biggest challenges in the design of the new building, as Felix Kunz, co-founder of SIPBB, recalls: "Laboratories, offices, a production hall – all of these spaces have different requirements in terms of cleanliness, noise levels and safety. We had to meet every one of these needs to guarantee that the spaces could coexist without disturbing one another. And that was no easy task." The electrical engineer, who has established several businesses during his career, has been involved in the SIPBB project since 2013. Together with representatives of the canton, he developed the winning concept that was awarded the contract by the Federal Council in 2015. He then took over as CEO and project manager of the new building, a role he is currently in the process of handing over. In addition to the various functional spaces, there were several other criteria the new building had to meet. Convertibility was an essential prerequisite for the interior, for example: "Innovation will look very different in ten, or twenty, years' time, and we need to be able to respond dynamically to new trends in

order to be sustainable," Kunz says. One such trend involves specialists from various research disciplines working together on innovation projects. This concept of collaboration is enshrined in SIPBB's motto, "connecting great minds". The very architecture of the building underpins this by creating spaces for collaborative work while also using glass to provide transparency and a view inside. "Thanks to the glass facade, you can see from the outside that SIPBB is an open factory, or an open test platform," says Kunz. "It's an invitation to local industry to come here for their testing and research." In addition to the infrastructure and expertise it provides, the park opens up its extensive network to its tenants, making it a one-stop shop for innovative projects. Collaborations range from individual projects to long-term partnerships.

## Four competence centers

The research at SIPBB focuses on four competence centers: the Swiss Smart Factory (SSF), the Swiss Advanced Manufacturing Center (SAMC), the Swiss Battery Technology Center (SBTC), and the Swiss Health Competence Center (SHCC). "We based our choice of focal areas on the strengths and needs of the region, while at the same time making sure we set ourselves apart from the other parks," Kunz explains. In addition, the centers have common points of contact that enable them to complement and support each other. Project acquisition also takes place jointly, with an open discussion culture nurtured at

the project implementation stage, enabling solutions to be worked out together. The large production hall plays an essential role in this. Stretching over two floors, this factory facility forms the beating heart of the new building. It is a place where test environments can be set up and tried out. SSF has set up its Industry 4.0 demo factory here, for example. The partners in SSF make their products and applications available to simulate how they can be interlinked. The insights gained from this help the partners to improve their products, while visitors get to see how they can integrate these technologies into their businesses. At the back of the hall, a door leads to another of the building's highlights: the Optical Fiber Drawing Tower, a 20-plus meter high tower where new types of optical fiber technologies are tested. A collaboration between the SAMC, the University of Bern, and Bern University of Applied Sciences (BFH), this scientific instrument will help companies to find new and better applications for laser technology.



"SIPBB is an invitation to local industry to come here for their testing and research."

Felix Kunz, co-Founder of SIPBB and Delegate of the Board of Directors



**THE REINFORCED CONCRETE SKELETON OF SIPBB**

The new building offers a total of 15,500 m<sup>2</sup> of open-plan spaces and enclosed security areas in the form of offices, workshops, and laboratories.





## “SIPBB helps startups and established businesses develop innovative products and services.”

Christian Ochsenbein, Head of the Swiss Battery Technology Center at SIPBB

To optimize product manufacturing, the SAMC can also draw on other state-of-the-art technologies at SIPBB. On the fourth floor, for example, its experts work with a modular AM research machine – the only one of its kind in Switzerland – that uses the laser powder bed fusion process. This enables prototypes to be produced faster and more efficiently, shortening project development times and benefiting all SIPBB customers.

### Collaborating in the circular economy

The first floor is home to another showcase project: the laboratory of the Swiss Battery Technology Center. This laboratory, which is a public-private partnership with the University of Bern and BFH, describes itself as the largest battery laboratory in Switzerland for applied research. “Here, we test the conditions needed to keep the batteries in various battery technologies running for as long as possible,” says Christian Ochsenbein, Head of the Competence Center. In addition to researching the optimal use of batter-

ies, the SBTC specializes in battery recycling and disassembly: “We are interested in how to prepare batteries for recycling – how to discharge them and use the residual energy to recycle them, but also what the risks are. Another research focus is battery disassembly.” This is a topical issue, given that ever more batteries are being produced and installed in ever more new applications. “Sooner or later, all these batteries will be recycled. The question as to how efficiently they can be taken apart again after use is a key one, because we want to be able to reuse the raw materials and turn them into new products.” The SBTC specialises in particular in batteries for electronic mobility. “Compared to conventional battery recycling, we’re still at a very early stage in this field,” Ochsenbein says. The competencies and insights being gained at the Swiss Smart Factory in relation to Industry 4.0 are particularly helpful for them in this process, he explains: “We combine SSF’s expertise with our knowledge to figure out how batteries should be designed with the circular economy in mind.” In contrast to the linear economy, there is no end here: everything must be able to be dismantled after use. “An interesting new market for the Swiss mechanical engineering and automation industry”

predicts Ochsenbein. The laboratory’s customers include national and international battery manufacturers in the automotive, e-bike and utility vehicle sectors as well as customers who want to install batteries in their applications and check which technology is most appropriate.

Another SBTC research area is located on the roof of the building. In addition to the solar panels that power the building, the SBTC’s photovoltaic system is also installed there. As a test facility for the long-term study of new PV technologies, it provides the basis for research into the impact of PV systems on the electricity grid. The building itself is used as a test environment. The startup Green-Y is also using it to test the compressed air unit in an energy storage system that supplies heat and cold using compressed air. Green-Y is providing the technology and SIPBB is helping them research how to integrate and use it in a building. “It’s a classic win-win situation and a prime example of how SIPBB helps startups and established businesses to develop and offer innovative products,” Ochsenbein concludes.

The fourth research area at SIPBB is the Swiss Health Competence Center (SHCC). Unlike the others, it does not need any additional infrastructure, although it does use the SAMC’s 3D printer to produce prototypes. The products and services created with the help of the SHCC are used in the healthcare sector to provide better therapeutic care for the community, with the main focus on the digital transformation of the healthcare system.

## Building with insight

The new home of the Switzerland Innovation Park Biel/Bienne was designed by the architectural firm Waldrap (Renate Walter and Sebastian Lippok). The young architects’ practice won the contract in an open competition.

### What was it that particularly attracted you to this project?

“Industrial buildings of this kind are usually built on the edge of town. Designing something like this for a busy city-center location was very exciting.”

### How did the location influence the building’s design?

“We wanted the SIPBB building to blend in visually with its neighbors, so we took cues from the grid style of nearby buildings and designed a facade that fits in with this master plan. We also wanted to create transparency so that people can see what happens on the inside. To do that we used a lot of glass, shop window-style: you can more or less see right through the building.”

### Did you make everything in the building that transparent?

“No, because innovation doesn’t only happen in open spaces. You still need quiet areas. It’s important to be able to get together to share ideas and collaborate, so we provided plenty of informal meeting places, along with an Open Innovation Space on the fourth floor. We also created some smaller-scale cell structures on the upper floors: offices you can’t see into, as places of retreat and closed areas. After all, innovation is also about patents and secrets.”

### How sustainable is the building?

“The site itself meets the demand for urban consolidation as opposed to suburban sprawl. The building is Minergie P-compliant. We also kept it very basic, particularly on the inside. The structural components are all separate; there are no internal insertions, which means they can be taken apart again very easily. Of

course, that impacts significantly on the architectural style. You can see things that are normally hidden, like all the electrical infrastructure in the stairwells. This makes the building into a real machine on the inside, with its technical functions on display.”

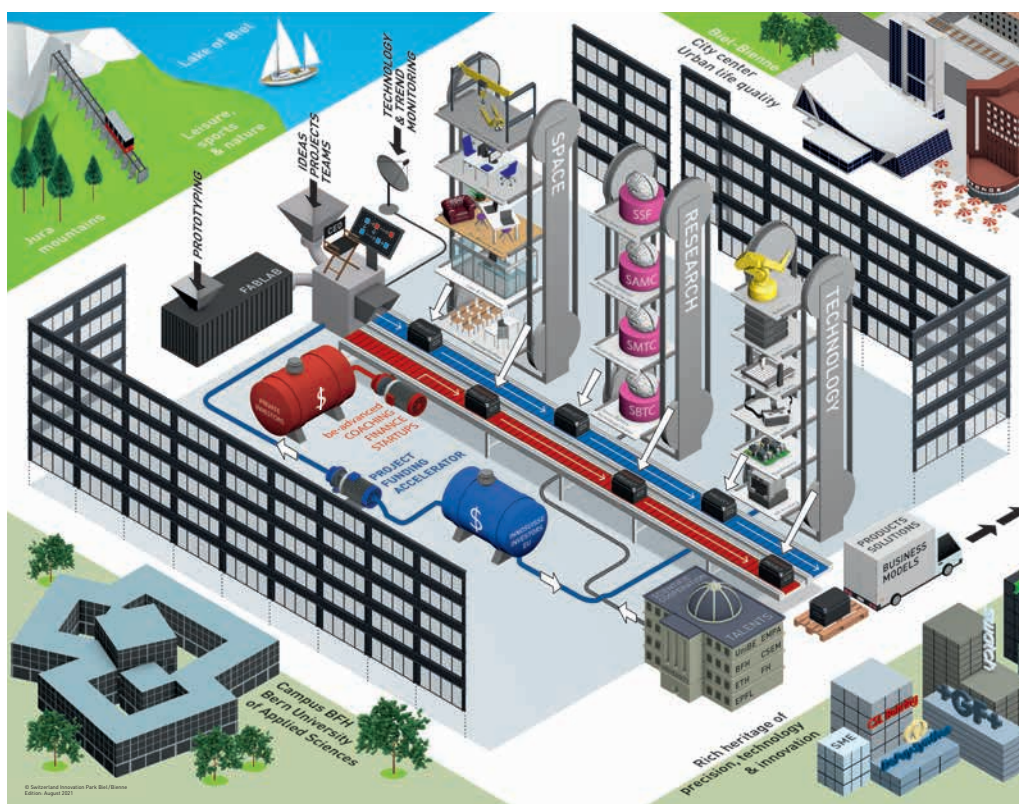
### What did you learn during the build?

“This construction method more or less turned us into building services engineers. We had to learn to tone down our architectural ambitions for the cladding and to give the users more freedom in terms of the layout. Designing and building the functional spaces in collaboration with the specialists was also a very complex learning curve.”

### Hand-over

Besides benefiting from the competencies at SIPBB, larger companies, SMEs, and startups can also rent space there. "When we built the building, we made sure there would be sufficient space for tenants. They benefit from the innovative environment at SIPBB and its city-center location," Kunz says. This rental space is proving extremely popular, with around 80 percent of its 10,000 square meters already occupied.

With this, Felix Kunz concludes his tour of the new building. He is very happy with the way things are going and is stepping down as CEO with every confidence: "I'm the setup man; I'm happy to leave the operational side of things to other people, but I will always be on hand if they need advice." Now they no longer have a CEO but a team that shares the management tasks between them: COO and CMO Anita Jörg will head up Business Support, and the four research managers will be responsible for developing the research areas. Their first task together will be to stabilize SIPBB following this intensive setup and growth phase. Felix Kunz will remain with the project as a Delegate of the Board of Directors.

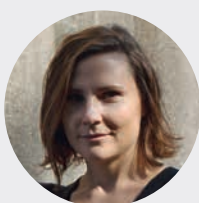


The SIPBB business model shows how businesses, research and technologies are networked to promote innovation.



“Industrial buildings of this kind are usually built on the edge of town.”

Sebastian Lippok



“Sustainability ensured by reducing interior fittings.”

Renate Walter



Spirit of innovation in the heart of Biel.



# And the award goes to...

Every year, the Bern chapter of the Trade and Industry Association of the Canton of Bern (HIV) rolls out its red carpet at the Bellevue Palace Hotel and honors a personality who has made an outstanding contribution to Bern as a business location. This year, the traditional HIV Prize goes to Beat Brechbühl, Managing Partner at Kellerhals Carrard.



Beat Brechbühl, Dr. iur., LL. M., works tirelessly for companies in the Canton of Bern.

"I'm probably not your stereotypical 'Berner' – I'm faster, more impatient, more communicative and also more outspoken than the average Bernese person," says Beat Brechbühl, who grew up in Muri. But the HIV prize is not awarded to the most typical 'Berner' but to someone who has rendered outstanding services to the Canton of Bern as a business location. And that's exactly what the 52-year-old has done over the course of his career – from his post as municipal councilor in Muri at the tender age of 23, via numerous roles in companies such as Flughafen Bern AG, the AVAG Group, and be-advanced, the Canton of Bern's innovation promotion agency, and a teaching position at the University of Bern, to the many political initiatives he has launched. So a passionate Bernese? "Absolutely – even if I sometimes find the city of Bern a little on the small side," Brechbühl says. Nevertheless, he decided to build his career here, even though all doors in Switzerland and the USA were open to him after qualifying: "On the one hand, that was a strategic decision based on my career options, but on the other hand, it came straight from the heart."

## Building a federalist law firm

Brechbühl joined the traditional Bernese law firm Kellerhals & Partner in 1999. Under his leadership, the company developed over the following years into a nationwide business with its current name, Kellerhals Carrard. "Our aim was to build a kind of federalist system by integrating law firms with strong regional roots." The first firm they started cooperating with was the former law firm Hess Dallaïor in Zurich in 2006, with others following in Basel, the Lemanic Arc, Lugano, and Geneva. The selection criteria for cooperation partners are unexpected: "Although each firm's business case must be sound, our main priority is that the partners must share our values." These values are acting in an entrepreneurial and individualistic way coupled with federalist thinking, flat hierarchies, team spirit, motivation, trust, and loyalty. "This has enabled us to create a spirit in our firm that works and keeps our culturally diverse team together." This team no longer only includes lawyers but also other experts such as economists, tax consultants, and former politicians. Kellerhals Carrard assembles the optimum team for each case. This is a development that Brechbühl co-initiated, preferring to describe the business as a platform rather than a law firm. Keeping an entity of this kind together can only suc-

ceed if you know each other well and are on friendly terms, he says. Today, Kellerhals Carrard is the second largest law firm in Switzerland, with six branches in Switzerland and representation offices in Shanghai and Tokyo. Further growth is not a top priority; instead, the emphasis is on quality assurance and consolidating customer relationships. Other focal areas are further developing their innovation and startup section, and sustainable entrepreneurship and governance. "The commercial aspect is important to us, of course, but we are also committed to working in the social sphere and for civil society – for example through pro-bono work," Brechbühl says.

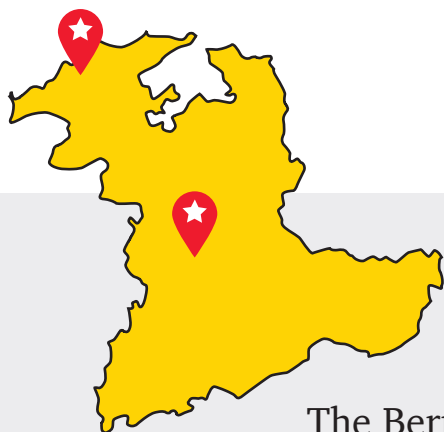
## More creative drive

The dynamism that enabled Kellerhals & Partner to grow from a regionally successful law firm to Kellerhals Carrard, a nationally important platform, is something Brechbühl would also like to see in the Canton of Bern. "I am missing a sense of creative drive in some areas. We Bernese are too often satisfied with the status quo." In particular, he is thinking of the tax burden, the complex regulatory environment and the general conditions for doing business. "I would like to see more commitment from the authorities in these areas." Typical of Brechbühl as these plain-spoken statements are, they can be divisive: "I am well aware that I tend to polarize." But he isn't the type to simply criticize: as his track record shows, he tackles issues and initiates change. "That's why I am delighted to have been awarded the HIV Prize, because it shows that my business initiatives and projects are appreciated." Entrepreneurship is particularly close to Brechbühl's heart. "That's the reason why I always find time to promote it and support startups."

## CANTON OF BERN HIV

The Trade and Industry Association of the Canton of Bern (HIV) is the mouthpiece of Bern's business community vis-à-vis policymakers, authorities, and the public. With 1,500 members, the Bern chapter of the HIV is the largest of seven regional chapters. The main objective of the HIV is to improve the economic and political conditions for private businesses located in the Canton of Bern. For more information, visit [www.bern-cci.ch](http://www.bern-cci.ch).





## New arrivals in the Canton of Bern

The Bern Economic Development Agency (BEDA) helps innovative international companies and undertakings to relocate and settle in the Canton of Bern – such as EMBALL'ISO and Derdack. BEDA works on this with an inter-cantonal partner Greater Geneva Bern area which has a network in selected target markets abroad.



### EMBALL'ISO

EMBALL'ISO develops and manufactures isothermal solutions for pharmaceutical products that help to maintain the cold chain. The French company's product range includes innovative isothermal packaging in all sizes as well as cold storage systems based on phase change material (PCM). Its main customers are pharmaceutical labs, logistics companies and last-mile specialists. EMBALL'ISO's international network allows it to recover its packaging at the destination and reuse it, thereby reducing its customers' and its own carbon footprint.

EMBALL'ISO has eight production sites, 14 service centers and over 80 collection points across four continents. Proximity to the customer is essential for legal compliance reasons as well as for the economic, logistical and environmental benefits this brings. In Biel/Bienne in the Canton of Bern, EMBALL'ISO has found the perfect place for its Swiss base, allowing it to optimally serve its Swiss customers.

[www.emballiso.com](http://www.emballiso.com)

### Derdack

The German company Derdack is a leading software specialist in automated alert and mobile incident notification. Its solutions automate and centralize alert processes in manufacturing, IT, building management, and other areas. In this way, Derdack enables its customers to communicate critical information to the right people reliably and quickly and respond promptly to critical incidents and emergencies.

Derdack is a global company with branches in Germany and the USA. In June 2021, the company opened another base in the city of Bern to bring it closer to its Swiss customers.

[www.derdack.com/de](http://www.derdack.com/de)

# STARTUP

## BREATH OF FRESH AIR



### boum

Green heart but no green thumb? Don't despair, help is at hand – in the form of a smart planting system from the startup boum. boum combines a smart irrigation system inspired by nature with coordinated plant communities and a digital gardening assistant to guarantee growing success. So now even time-poor people with no experience of gardening can create delightful green oases. In doing so, boum not only aims to increase people's quality of life but also to help improve biodiversity and the urban climate. The boum planting system is suitable for all sealed outdoor surfaces, including balconies and patios.

boum was set up by Professor Matthias Erb of the University of Bern, Dr. Ludwig Auer, and Jeremias Jurt of be-advanced. The founder team combines expertise in plant biology, technology, business, and marketing to create innovative solutions for the fast-growing urban-gardening market.

boum has been in development since December 2020 and is now in the pre-seed phase. The first planting systems have been trialed together with enthusiastic customers this summer, with tomatoes and cucumbers ripening splendidly. The market launch with a scalable product is planned for 2022.

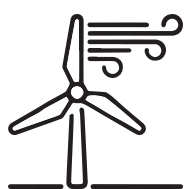


### Loggia16

Here in Switzerland we produce 700 kg waste per person – that's too much, says startup Loggia16. To help bring this figure down, they offer reusable products to replace disposable packaging in a clever and stylish way. So far, their repertoire includes beeswax wraps made with Swiss organic beeswax for use in place of cling film, and linen food bags to replace paper bags, for example for baked goods or for use in zero-waste stores.

Loggia16 products are 100% made in Switzerland using organic materials. All stages in the production process – textile design, choice of materials, processing, and packaging – are carried out with the involvement of social institutions. Loggia16 products are already available from around 70 stores across Switzerland and can be ordered with custom designs. This makes them particularly interesting for companies looking for meaningful gifts for their customers or staff.

Ideas, new technologies and inquiring minds constantly inspire new business ideas that give rise to startups. We present five examples in our startup parade.



## FACTS

### Startup stage

Pre-seed phase

### The inventors

Three plant-mad entrepreneurs who are totally committed to green growth

Bern

[www.boum.garden](http://www.boum.garden)

### Startup stage

Up and running

### The inventors

Petra Gurtner and Stefan von Arx, two plastic fighters shaken into action against waste

Bern

[www.loggia16.ch](http://www.loggia16.ch)





**Ormera – Energy Billing for Smart Buildings Made Easy**

More and more residential building owners are installing solar power systems and becoming power generators in their own right. But this electricity still has to be billed correctly. This is where the startup Ormera comes in. Its solution automates this process, with smart meters developed in conjunction with ABB that measure the building's energy consumption and the electricity generated by the photovoltaic system. The data are automatically transmitted to Ormera's blockchain app in real time via a secure data connection. The app then allocates the consumption data to the corresponding apartment. Billing is triggered automatically and users can pay their bills by their usual method.

Founded in the summer of 2019, Ormera is the result of an innovation project created by Energie Wasser Bern and PostFinance. The decisive factor for the project was the Swiss Energy Act, which came into force in 2018. This law allows building owners to form a consortium for self-consumption (*Zusammenschluss zum Eigenverbrauch*) and sell the solar power they generate to the residents of the property.



**Solarify**

Generate solar power and reap the benefits of the revenues, even if you don't own a roof yourself: investing in Solarify solar panels makes this possible. Solarify brings roof owners and small investors together to implement solar projects across Switzerland. The roof owners provide a suitable roof area, and Solarify designs the solar system and funds it via private investors who buy individual panels in the system. The company operates the system on the panel owners' behalf for around 30 years. The solar energy generated can be used on site at a discount compared to the grid electricity price, any excess is sold to the grid. Solarify shares the proceeds between the panel owners four times a year.

This creates added value for everyone involved. The roof partners get renewable solar power from their own roof at a reduced price without having to invest themselves, and private individuals can become solar power generators even without roof space of their own and can earn a small return by purchasing individual panels.



**Yuon**

Smart heating based on optimum parameters – that's what the startup Yuon promises. Their bright idea: an innovative heating control for single-family homes which automatically learns the building's features and adjusts optimally to the building and its heating system. The Yuon Controller only switches on the heating when it is really needed, based on weather data. An intuitive user interface makes it easy for users to change the settings and reduce the room temperature when they are away, allowing them to cut their heating costs by up to 20 percent and reduce emissions.

The aim of the Burgdorf-based startup is to reduce greenhouse gas emissions from private buildings.

<b>Startup stage</b> Up and running
<b>The inventors</b> Matthias Egli and Fabian Bärlocher, two people intent upon simplifying the world
<b>Bern</b>
<b>www.ormera.ch</b>

<b>Startup stage</b> Up and running
<b>The inventors</b> Aurel Schmid and his team of eight, all firmly convinced that everyone can benefit from the energy transition
<b>Hilterfingen</b>
<b>www.solarify.ch</b>

<b>Startup stage</b> Beta testing phase
<b>The inventors</b> Young engineers who are green – but not behind the ears
<b>Burgdorf</b>
<b>www.yuon.ch</b>

# “Giving responsibility and taking responsibility – that’s my motto”

“I want people who are prepared to get actively involved and take responsibility. That’s how we built our company and that’s how I intend to continue to run it,” explains Michael Lüthi, CEO of Sanitized AG, the world market leader in hygiene function and material protection in textiles, plastics and paints. The 38-year-old took over at the helm of the family business in August 2021.

## Enthusiastic

I am a very positive person. I see lots of solutions and opportunities and I grab them. I also like enthusiasm and passion in other people. In our business, for example, everyone believes that they can change things and make a difference through their work. For me, this was a strong argument for joining Sanitized AG. As CEO, I take inspiration from other entrepreneurs who see opportunities and invest in them at their own risk. I meet these people in all kinds of places – not only at networking events, but also on training courses, for example.

## Continuity

I never felt pressured to take over the family business and didn’t work for Sanitized either during or after my professional training. My father simply asked my sisters and me to decide at some point whether or not we wanted to join the business. Then one day something suddenly clicked for me, and I realized that I wanted to be an entrepreneur. To prepare for the handover, I spent three and a half years working in various departments, gradually taking on more and more responsibility. This was a very important learning experience for me personally, as I wasn’t familiar with either the industry or our products. What’s more, I am the kind of person who likes to know how the bigger picture works – and for that, you have to understand the mechanisms in the background. The first port of call in my “grand tour” of the company was Customer Support. There’s nowhere you can get to know the customers and their needs and problems more directly and from a more in-depth perspective.




On vacation, Lüthi and his partner are drawn to faraway places off the beaten tourist track: “That’s the best way to get to know a country.”



The CEO also has a quiet side: “When I’m doing DIY, gardening, or sailing, I like to be alone with my thoughts.”







“I intuitively seek to maintain my work-life balance – I’m passionate about my work, but I also have other priorities in life.”

CEO Michael Lüthi, who hails from Emmental, took over as head of Sanitized AG in August this year. Sanitized was founded in the USA in 1935. Right from its inception, its aim was to make everyday articles more hygienic. The Lüthi family joined in 1950, initially as a distributor for Europe and the Middle East. By the 1990s the products and services of the former distributor had become more dominant, which led to the Swiss Sanitized becoming the group's headquarters. Sanitized now has its own logistics and sales subsidiaries in the USA. The two founding families are still the sole shareholders of the company today.

## Family man

My family means a great deal to me. It never stops giving and has no hidden agenda. Of course, for us the business is part of the family. You'll often find me discussing business matters out of hours with my father, who chairs the Sanitized board of directors and who also embodies a certain father-figure role for our employees. In September I became a father myself for the first time and took paternity leave. We have had that at Sanitized for many years. In fact, flexibility is very important to us – after all, we are all human beings, not cogs in a machine. If an employee needs more energy for other areas of their lives, we find a way to reconcile this with their work. We look for solutions and want to work together with our people to find them.

## Sustainable

Our additives extend the life of products. In fact, these products are certified with various sustainability labels, which makes us attractive to sustainability-conscious partners and sets us apart from the competition. Sustainability is therefore part of Sanitized's success and is an innovation driver for us. I am very interested in the circular economy, both at work and at home. For me, it is imperative that we move away from the throwaway society. That's why we work with a printing company that has cradle-to-cradle certification, for example. Although we already use recycled raw materials at Sanitized, a current challenge we are facing is the lack of impetus in upstream and downstream industries to implement more elements of the circular economy.

## Socializer

I love to surround myself with people, both at home and at work. My greatest pleasure – and indeed my main motivation as an entrepreneur – is to work with our customers to find pragmatic solutions for their needs. By the way, we are very sociable at Sanitized, too. The whole company meets for coffee every morning. This fosters a sense of community that is crucial to our corporate culture. And there is a barbecue in the garden which we fire up for the occasional party, such as the annual “baptism of fire” for new employees: they have to play chef to the whole company.

# Photovoltaics – the perfect combination: solar systems that look good

Generating electricity where it's needed, right there in the building. But aesthetically integrated so they don't show. Mission impossible? Not for 3S Solar Plus AG. Their solar systems for roofs, facades and balconies are not just electricity-generating add-ons, they actually replace these components, protect the building, and comply with all relevant building standards.



The use of state-of-the-art technologies such as colored or glare-free glass surfaces boosts public acceptance of photovoltaics in the building envelope.



The frameless MegaSlate solar modules are laid just like conventional roof tiles. They are fitted by an authorized roofer or specialist installer.

“‘We have two major problems today: global warming and poverty. Renewable energy is the way to solve both problems,’ UN Secretary-General Kofi Annan said at the World Future Energy Summit 2013. He added: ‘You are the first generation that can solve them and the last that must solve them before it is too late.’ This is my mission, too, as buildings are still responsible for 40 percent of CO<sub>2</sub> emissions today. We can and must change that. When Meyer Burger wanted to move their manufacturing to China in 2017, we took over their products and factory and are continuing the building integration business, which has been going since 2001, in 3S Solar Plus AG. Establishing a strong PV industry in Europe is vital – from both an environmental and an economic point of view.”

#### How do you recruit suitable people?

“We give opportunities to people who want to make a difference. For me, the decisive factor is not what professional qualifications a person has, but

much rather what they want to do. One of our top employees is a trained chef and is now head of purchasing at 3S Solar Plus. Like the sector as a whole, we need a lot of people, but very often we have to train and develop them ourselves because the skills we need simply don't exist in the labor market. Today we employ carpenters, roofers, engineers, computer scientists, and so on. There are 20 different professions represented in our 60-strong workforce. Every day, we equip 15 buildings with solar building components in collaboration with our specialist partners.”

#### What does the average person actually know about solar power?

“A sizable proportion of our end customers don't even know what the possibilities are – that you can get such great-looking roofs, for instance. We need a functional solar system that protects the building, generates electricity and is also aesthetically pleasing. Aesthetics in building-integrated photovoltaics



“Our solar building products make buildings CO<sub>2</sub> neutral and us a niche player.”

CEO Dr. Patrick Hofer-Noser



### MegaSlate – a system of modular building components

Founded by Patrick Hofer-Noser, 3S Solar Technologies AG firmly established the MegaSlate solar roof and facade system on the market back in 2001. MegaSlate meets the stringent architectural and aesthetic requirements for listed buildings, new buildings, and building renovations. While the standard solar modules are mass-produced in Asia, 3S Solar Plus manufactures its solar roof and facade systems on its own production line in Thun, which was modernized in early 2021. The construction sector operates on a regional basis, just as 3S Solar Plus does. This also benefits our many local specialist partners. All components are produced with CO<sub>2</sub>-free electricity and in compliance with Swiss Label requirements.

#### Facts & Figures

- CEO; Dr. Patrick Hofer-Noser
- Owner-run family business
- 63 employees
- 14,000 roofs fitted (as of September 2021)
- Output: 300,000 m<sup>2</sup>/year

2001 3S Swiss Solar Technologies AG  
2010–2018 Part of Meyer Burger AG  
2018 3S Solar Plus AG

The system structure ensures optimum rear ventilation, and the frameless design gives the modules excellent self-cleaning properties. They can also be used in Alpine regions.

are here to stay. These days you can even choose a color that matches the building. Our solar modules are cut to size, which means that they integrate seamlessly into any roof structure and fit around any chimney. The solar building components are also available in a glare-free finish. Skylights are part of the overall system – in general, we even manage to meet the high standards for listed buildings.”

#### What does building-integrated photovoltaics mean?

“Building-integrated” means that the solar roof replaces the tiled roof instead of being installed on top of it. The solar modules are part of the external building envelope on the roof, in the facade or in the form of balcony railings. They must comply with the relevant building standards. For example, balcony railings are tested for breaking strength and must not break, just like safety glass. Incidentally, as we saw in the severe hail events in the summer of 2021, the 5 mm glass that is unique to the MegaSlate solar roof held up, while nearby clay tiles and car windshields shattered.”

#### How quickly does a solar roof from 3S Solar Plus pay for itself?

“Within about two years, our roof will have produced the same amount of energy as it took to make it. And that’s across the entire value chain. It is CO<sub>2</sub> neutral after four years and amortized after ten years. The components have a weather guarantee of 40 years.”

#### How does being based in the Canton of Bern benefit you?

“Bern has short lines of communication with authorities, research institutes and universities. We know the people and we appreciate pragmatic solutions. When we needed specialists from the Far East to start up the new production line, the borders were closed because of the coronavirus pandemic and visas were no longer being issued. But the fitters were ultimately able to get here with the authorities’ help, and the Bern Economic Development Agency played a key role in this. We realized then that the Canton of Bern looks for solutions for its businesses that you won’t find in the brochure. The coronavirus situation has shown us how important reliable partners and a functioning network are.”

# Storing energy – with salt instead of lithium

At the moment salt batteries are eking out a niche existence. But that looks set to change – at least, if Innovenergy in Meiringen has anything to do with it. The company wants to see them make a breakthrough, particularly in stationary energy storage. And there's every chance they will, given that salt batteries are more environmentally friendly, more robust, safer, and no more expensive than their lithium counterparts.



The salt energy storage facility at Migros in Schlieren (ZH) with a capacity of 540 kWh.

Innovenergy may be putting all its efforts into a physical product, the salt battery. But this young company, which was founded five years ago, has a more digital set-up than many a pure software company, both from an organizational and an operational point of view. The cleantech startup's management is based at the "Plattform Haslital" co-working space in Meiringen, while the rest of the workforce works from various places across Switzerland. So it goes without saying that their main channels of communication are electronic. Innovenergy specializes in building solar systems and equipping them with salt battery storage units. Digital technologies play a key role in the programming, control, and monitoring of these systems. The company has already installed more than 250 battery storage systems, which it can keep an eye on throughout their entire lifespans via a digital platform. "It's a remote monitoring system that actually

isn't even strictly necessary because these systems are maintenance-free and can run on emergency power. But naturally we're keen to evaluate the operating data with a view to future developments," says company founder and CTO Max Ursin.

## Eventful history

Before setting up his own business, Ursin, a civil engineer who graduated from EPF Lausanne, spent many years as a project manager and board member of Kraftwerke Oberhasli AG (KWO). This also helps to explain what is – for a digitally focused cleantech company – a rather surprising location in the Bernese Oberland. "We could have set up anywhere, really, but I didn't see any point in going too far afield as the quality of life and cost of living are just right here," Ursin says. In launching Innovenergy, which he achieved with no outside funding, he was making a reality an idea he had been mulling over for some time. Developed and patented by a South African research team, the salt battery has been around since 1986. But during the course of its eventful history it had never made it beyond a few industrial side tracks. Ursin came into closer contact with it when, around the turn of the millennium, a German car manufacturer tested some electric vehicles fitted with salt batteries in the Bernese Oberland. After that, he couldn't get the salt battery out of his mind – despite the fact that the lithium-ion battery ultimately took over in the automotive market, leaving the salt battery to continue to eke out a niche existence. But that could soon change.

## Alternative with plenty of benefits

Alternatives to lithium, the coveted raw material that fierce battles are already being fought over around the globe, are certainly in demand. "And that's the thought that spurs me on: an innovative salt alternative to the usual lithium-ion battery, because salt is available in virtually unlimited quantities all over the world and is much cheaper than lithium," Ursin says. The salt battery has other benefits besides: It can't catch fire or explode, so it's safer and much easier to operate. It can easily withstand temperature fluctuations between 60°C and -25°C and can cope with being fully discharged with no problems. What's



**"Salt batteries are environmentally safe."**

Max Ursin, company founder and CTO, Innovenergy GmbH



more, the salt battery is environmentally safe. Innovenergy sources the basic product for its electricity storage systems from the only European manufacturer, FZSoNick in Stabio, Ticino, a subsidiary of the Italian battery specialist Fiamm. Besides salt, the Zebra battery, as it is known, also contains nickel, iron, and ceramic – all raw materials that can be fully recycled afterwards.

Innovenergy implemented its first project on an Alpine farm near the historic Hotel Rosenlauri: a solar power system with mobile salt battery storage for a milking system. Doing away with the diesel fumes and generator noise was something the hotel guests were most appreciative of. Now, mobile salt batteries for Alpine farms are just one of Innovenergy's mainstays; their main focus has shifted to medium- and larger-scale storage systems for railroad companies such as SBB, SOB and BLS. The largest salt energy storage facility to date, a system with a capacity of 540 kWh, was installed at a Migros store in Schlieren in the Canton of Zürich. Ursin also sees a lot of growth potential for his business in the home sector. Innovenergy has developed the SaliDomo battery storage system, available with a capacity of 9.4 kWh or 18.8 kWh, specifically with this market in mind. With up to six modules connected in parallel, the SaliDomo can also be expanded into a high-performance commercial storage system.

#### Haslital Valley – mecca for salt batteries

"The salt battery comes into its own in the stationary storage sector," Ursin points out. "And when economies of scale come into play as demand increases, it could soon have all the price benefits on its side too." For now, Ursin sees the salt battery as less of an option in e-mobility. "As long as fast acceleration is the be-all and end-all, as it is with Tesla and Co., these slightly slower salt batteries won't be taking over from high-performance lithium batteries in electric vehicles any-time soon." Besides the aforementioned FZSoNick, a second company partnering Innovenergy in the project is Battery Consult (see box). "We are concentrating on developing and commercializing salt energy storage systems," the Innovenergy CTO says. Meanwhile, Battery Consult, also based in Meiringen, is working on the future of salt batteries. The Haslital valley is definitely looking to play a leading role in this market.

#### Battery Consult: Haslital goes global

The second main port of call for salt batteries in Meiringen is Battery Consult. This company is focusing on further developing the salt battery ready for commercial production in a model factory and has the ambitious objective of commercializing production lines worldwide under license. The Brazilian energy company Itaipu, operator of one of the world's largest hydroelectric power plants at the famous Iguazu Falls, has invested double-digit millions of dollars in the startup founded by Cord-Henrich Dustmann in 2008. A high-caliber development team of chemists, physicists, and engineers is working on the latest-generation energy storage technology based on table salt in an unassuming former arsenal building.

The fact that this startup also chose Meiringen as its base again leads back to Innovenergy founder Max Ursin. Battery Consult's contacts with Brazil came about through him, back when he was project manager at Kraftwerke Oberhasli AG (KWO). A few years ago, the South American energy company was looking for stationary storage options for its energy and came across KWO, which had a team working on the same issue. Battery Consult now has two prototypes of a new salt battery in its portfolio and is poised to enter the commercialization phase.



The SaliDomo battery storage system.



Energy instead of diesel fumes and generator noise – something not only humans appreciate.





# The Zytglogge – monumental landmark of the city of Bern



The Zytglogge clock tower is the landmark of the City of Bern.



The Zytglogge is Bern's beating heart. Once a city gate, then an orientation point, and now a clock tower with an original 500-year-old clock-work mechanism, it has always been the focal point of the Old City. Its huge dial, moving figurines, and astrolabe are captured on camera by hordes of tourists every day. And it never ceases to fascinate, no matter how familiar you are with it.

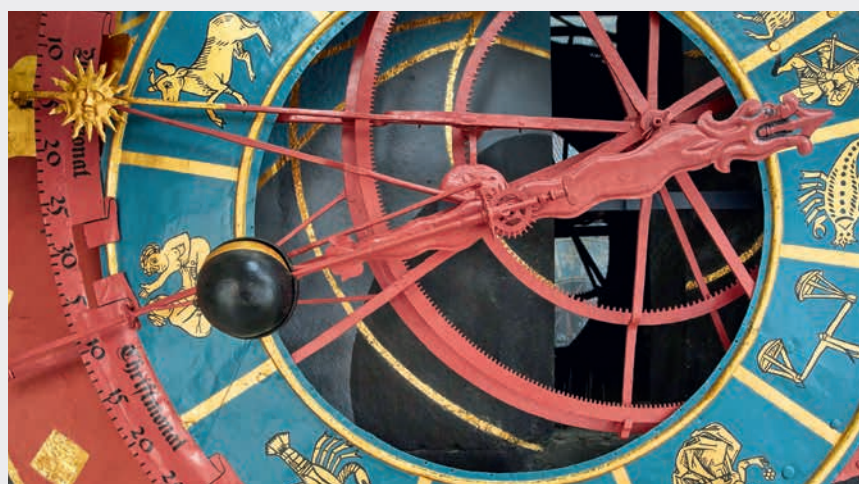
When the no. 12 bus slows down to a crawl as it passes the Zytglogge (Clock Tower) and locals head over to Kramgasse, saying "exgüse" as they weave their way through the crowds of tourists, it's probably a couple of minutes before 11 am or 12 noon. High up in the tower, the Zytglogge's "Governor of Time" looks out of the small window at the tourists below gazing up at the tower in fascination. This occasional glance rewards him for his efforts. For the Zytglogge is neither automated nor digitalized: its mechanism is wound by hand every day.

When tourists start to nudge each other and point at the moving figurines, it's more or less exactly four minutes before the hour. The spectacle on the east facade of the city of Bern's landmark is about to begin. The rooster crows, marking the passing of another hour in our lives. A carousel of bears, the burly city guards, starts to revolve, and the jester heralds the top of the hour by striking his little bells. But the hero of the hour (pun intended) is Chronos, the god of time, seated on his throne. He turns his hourglass, raises his scepter, and commands the bell striker, known locally as Hans von Thann, to strike the hour. Carved out of lime wood, the gilded figure can be seen at the very top of the tower under the lantern. And if you look closely, you can see Chronos moving his mouth and counting along. The spectacle concludes with a third crow of the rooster announcing the beginning of a new hour of life.

This playful representation of time never ceases to enchant, as it has done for hundreds of years. From 1405 onwards, this was the mighty city of Bern's way of showing the world that it could keep pace with other European cities in terms of technical innovation – and that it was wealthy enough to afford artistic facades such as these. But the actual building housing the Zytglogge dates back even further.

#### From city gate to clock tower

Nestling in a glacial moraine and enclosed on three sides by the Aare River, the location was an ideal spot for Bern's founding dynasty, the Zähringer. The city, which they founded in 1191, only had to be fortified to the west. From 1220 onwards, the only entrance to the



Sun and moon in the zodiac on the astrolabe.



Concentric date ring with old German month names. "Brachmonat" (fallow month) is June.

city was through a formidable city gate, today's Zytglogge. Every time the city was expanded, a new gate was added: first the Käfigturm and then the Christofelturm. But the first city gate retained its role as an important meeting place and was subsequently used as a prison and then a place of information. At least, that is, until 1405, when the Great Fire of Bern completely destroyed the city.

Never a city to give up, Bern used the reconstruction as an opportunity to modernize. The first city gate became a clock tower with a public mechanical clock, a large bell, and an astrolabe, making it into the Zytglogge we know today. But the movement kept breaking down and had to undergo constant patching. So a gunsmith – not a clockmaker – named Kaspar Brunner was commissioned to build a new one. In 1530 he built an ingenious, highly stable, forged masterpiece that is still operating today. And luckily for us, today we can get an up-close-and-personal view of this miracle of engineering history on guided tours of the Zytglogge.

#### Ticking away behind the tower walls

Home to a massive pendulum, mighty stone weights, a 20 m deep rope shaft, and a characteristic loud ticking sound, the inside of the tower is the world of the "Governors of Time." Cog by cog, the pendulum drives the clockwork's stone weights, which are hung from long ropes and weigh in at a total of 400 kg. After about 29 hours, the weights will reach the floor

and the Zytglogge will stop. The Governors prevent this by winding the five movements by hand every day. These movements operate the hour and the quarter hour striking mechanisms, the figurines, the hands, and the astrolabe. If the clock doesn't keep time accurately, the Governors – hence the job title – either stop the pendulum briefly or move the mechanism on slightly. With great dedication they also maintain, clean, and lubricate the old, almost 3 m high monumental mechanism. It's thanks to them that it is still telling the time reliably after 500 years. The mechanism was forged on site, with every tooth on every cog individually attached. Swiss quality for eternity.

As part of the tour that takes you up narrow staircases and under old beams, you also get a magnificent view of the Old City and an introduction to the secrets of the astrolabe. After all, it's fair to assume that the essence of this astronomical calendar is not fully understood by many these days. But this wasn't always the case.

#### The world of the astrolabe

Back in the Middle Ages, no-one had watches or apps. When they wanted to know what time of year it was, when to bring in the harvest, or when to collect wood, they looked at the sky and the stars. We can only begin to imagine how helpful the Zytglogge must have been at the time. From then on, people bringing their wares to market would always visit it, reading the information on the astrolabe and recog-

nizing the earth at the center of the universe with the sun, moon, and stars rotating around it in the form of the signs of the zodiac – just the way people saw things from the earth. They could identify the three hands: the sun hand, the moon hand, and the star hand on the zodiac disk. Today we call this the Ptolemaic world view, and this astrolabe is described as having a southern projection, to the puzzlement of the listeners. At least they too can recognize the horizon and twilight line and the night zone on the fixed part as the explanations continue. The time could actually be read on this part, although this won't be particularly helpful as the clock doesn't show what we know as Central European Time but the local time and the position of the sun.

The whole astrolabe only gives the impression of being stationary and is most certainly entirely unmoved by people who can't get their heads around its complexity. What about you – would you like to get to grips with the beating heart of the Zytglogge? Then why not join a tour or visit the tower at new moon, when you can see the sun's and the moon's paths crossing and the moon revealing its dark side.

More information on how the astrolabe works can be found in long-standing Zytglogge Governor of Time Markus Marti's book, *Das Astrolabium am Zeitglockenturm in Bern*, ISBN 978-3-7272-6005-6.



Chronos, the god of time, turning his hourglass.



The figurines delight tourists from all over the world.



# Competition: Win a group tour of the Zytglogge!



Are you looking for an idea for a team outing? Or how about enhancing a family event with a guided tour? Then our competition could be just the job. Up for grabs is a private guided tour of the Zytglogge for up to 19 people on a date of your choice.

The Old City of Bern has been a UNESCO World Cultural Heritage site since 1983. The gray-green sandstone buildings and the characteristic arcades define the look of the medieval city. The Zytglogge tower, which houses one of the oldest tower clocks in Switzerland, has been a famous landmark ever since it was built. On a tour you will discover the sim-

ple yet ingenious technology that has been operating for centuries. The tower also offers spectacular views of the lanes and over the rooftops of the old city.

Public and private tours can be booked at Bern Welcome. Contact: [citytours@bern.com](mailto:citytours@bern.com) or 031 328 12 12

1

**Competition question 1:**  
What is the name of the CEO of Sanitized AG?

☐ Beat Brechbühl

☐ Michael Lüthi

☐ Patrick Hofer-Noser

2

**Competition question 2:**  
How many battery storage system does Innoverenergy have in use?

☐ more than 150

☐ more than 250

☐ more than 350

3

**Competition question 3:**  
Which close-up shows a 3S Solar Plus AG photovoltaic system?

☐ Image A

☐ Image B


The winner will be drawn by lots and notified in writing. Employees of the Office of Economic Affairs are excluded from entering the competition. The judges' decision is final. There is no cash alternative to the prize.

Enter the draw at [www.berninvest.be.ch/chance](http://www.berninvest.be.ch/chance) or by postcard to the Bern Economic Development Agency, BCA Competition, Münsterplatz 3a, Postfach, 3000 Bern 8, Switzerland. The closing date for entries is **28 February 2022**.

**Many congratulations to the winners of our competition in berncapitalarea 1/2021:**

**1st prize:** Raymond Favre, Les Lilas 8, 2608 Courtelary / **2nd prize:** Alex Amstad, Talackerweg 4, 8156 Oberhasli / **3rd prize:** Dieter Baumann, Chemin de la Maison Blanche 2, 2533 Evilard

# Feel free to ask the Office of Economic Affairs

Businesses are keen to implement the principles of a circular economy. The Office of Economic Affairs supports them in their endeavors by developing strategies and advice services.

**Dr. Sebastian Friess, Head of the Office of Economic Affairs and President of the Bern Economic Development Agency, answers questions on the circular economy**

**Question:** Can you briefly describe what the basic idea of the circular economy is and why the topic is becoming increasingly pressing?

**Answer:** The circular economy is very different from the linear economic model that dominates today. In it, all production materials are regarded as technical or biological “nutrients,” keeping them all in continuous circulation for as long as possible. This allows material flows to circulate constantly at a high quality level in terms of their properties, functions, and range of uses (see graphic).

Besides permanently reprocessing products and components, the circular economy also involves extending their life span, for example through sharing, leasing, reuse, repair, refurbishment, and recycling. The aim is to reduce the kinds of negative effects that can be found in the linear economy, such as excessive extraction of scarce raw materials, social abuses, and environmental pollution.

**Question:** Where do you see the circular economy as having the greatest benefits?

**Answer:** Investing in the circular economy means investing in the future, in the sustainable use of raw materials and other inputs, and in safeguarding our competitiveness. The circular economy enables consumers to benefit from more durable and innovative products that take account of the finite nature of natural resources. In the long run, this can mean lower costs and an enhanced quality of life.

**Question:** In what area can the Canton of Bern, and the Office of Economic Affairs in particular, play a part in further developing the circular economy?



**Answer:** We are currently familiarizing ourselves with the opportunities offered by the circular economy and working out basic principles for it. The circular economy as a system will radically change many things. At the moment, we are focused on promoting innovation across all sectors and are working with our sister offices and partners on developing a funding program and defining a joint strategy. As we move toward a circular economy, we are sure to discover more new areas.

**Question:** Early June saw the publication of the study “Kreislaufwirtschaft. Innovationen der Berner Wirtschaft im europäischen Kontext” (The Circular Economy – Innovations of the Bernese Economy in the European Context), commissioned by the Office of Economic Affairs. What is the purpose of this study, and what results has it delivered?

**Answer:** We wanted to know how businesses are getting on with implementing circular innovation projects in the Canton of Bern. We were also keen to find out more about the conditions that exist or need to be created to enable Bernese companies with business models based on the principles of the circular economy to compete successfully at the local, national, and international levels.

**Question:** The results of the business survey in the Canton of Bern have shown that the majority of companies only use circular value creation to reduce negative environmental impacts, rather than to develop new business opportunities and gain a competitive edge. Did these findings surprise you?

**Answer:** No, not really. Today’s environment is very challenging. I can well understand that SMEs, in particular, can reach a ceiling in this area and view new business models with a critical eye to begin with. However, it is important not to miss out on the move toward a circular economy.

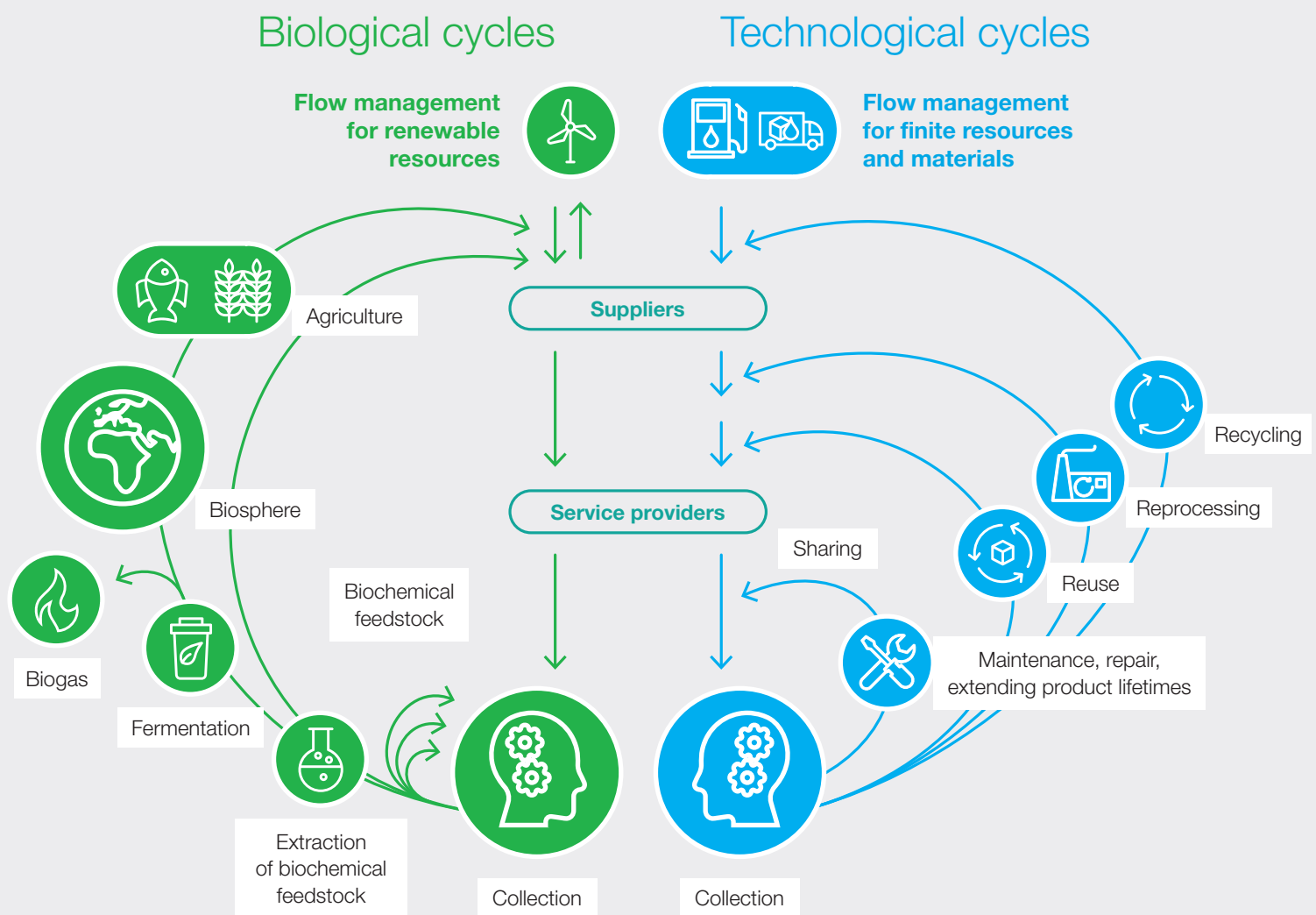
Our task now is to help businesses to recognize the opportunities this presents and to develop new strategies and projects. We are currently working on offerings that will enable us to advise businesses on how to take these steps. Any businesses wanting to discuss their issues in this area are more than welcome to get in touch with us at any time.

**Question:** What steps do we need to take to drive forward the circular economy in Switzerland?

**Answer:** I believe that building collaborations and partnerships between the various actors is essential for taking Switzerland’s transformation to a circular economy forward. Importantly, I see the need for a community in which we develop a collective understanding as well as standards that promote the circular economy.



# Requirements and operating principles of the circular economy



## Principles

Preserving and enhancing natural capital by controlling finite stocks and by replacing resources with renewable equivalents with the ReSOLVE levers Regenerate, Virtualize, Restore. Optimizing resource yields by circulating products, components, and materials in use at the highest utility at all times in both technical and biological cycles with minimized distances via the ReSOLVE levers Regenerate, Share, Optimize, Loop. Foster system effectiveness by avoiding and designing out negative externalities using all ReSOLVE levers.

Source: Own diagram based on Reuter transferpilots.ch (2021): *Kreislaufwirtschaft. Innovationen der Berner Wirtschaft im europäischen Kontext* and Ellen MacArthur Foundation (2013, 2015): *Growth Within: A Circular Economy Vision for a Competitive Europe*.

“Investing in the circular economy means investing in the future.”



# Your success is launched here!

In the Canton of Bern, innovative businesses deliver top performances, especially in medical, energy and environmental technologies, in the precision engineering industry, in ICT and in services. Our efforts to develop the Canton of Bern as a business location are also intended to pave the way to your success. If you are looking for a site or have financing questions, we are happy to help you. Are you planning a project? Contact us!

[www.berninvest.be.ch](http://www.berninvest.be.ch)



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