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# SI TECH4IMPACT IMPACT REPORT 2020-2023



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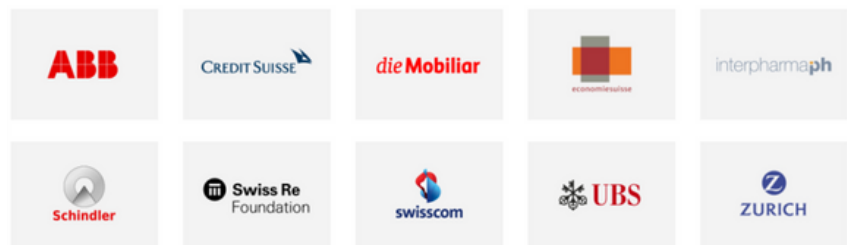
# ZERO TECH FOR GROWTH

The Sustainable Development Goals (SDGs), also known as Global Goals, are a set of 17 integrated and interrelated goals to end poverty, protect the planet and ensure that humanity enjoys peace and prosperity by 2030.

Considered a world leader in innovation, Switzerland is at the forefront of nations with a unique blend of technological know-how and innovation skills. This exceptional position provides Switzerland with an extraordinary opportunity to leverage its unique capabilities and contribute to society by fostering innovative and entrepreneurial solutions. These solutions have the potential to deliver significant sustainable progress, encompassing economic, environmental and social dimensions.

The main objective of Switzerland Innovation Tech4Impact (SI Tech4Impact) is to serve as a catalyst for the realization of science based innovation projects aligned with selected goals of the United Nations 2030 Agenda for Sustainable Development. This collaboration takes place in close partnership with Switzerland Innovation Parks, strengthening the network's ecosystem.

The initiative, led by the Switzerland Innovation Foundation in collaboration with E4S Tech4Impact, took place over a three-year period from 2020 to 2023. It was made possible by the generous sponsorship of prestigious companies acting as innovation partners, including:



We invite you to explore this report, which assesses the cumulative impact of the initiative from 2020 to 2023, covering the 18 supported projects across three calls.

# DIVERSE POOL OF APPLICANTS

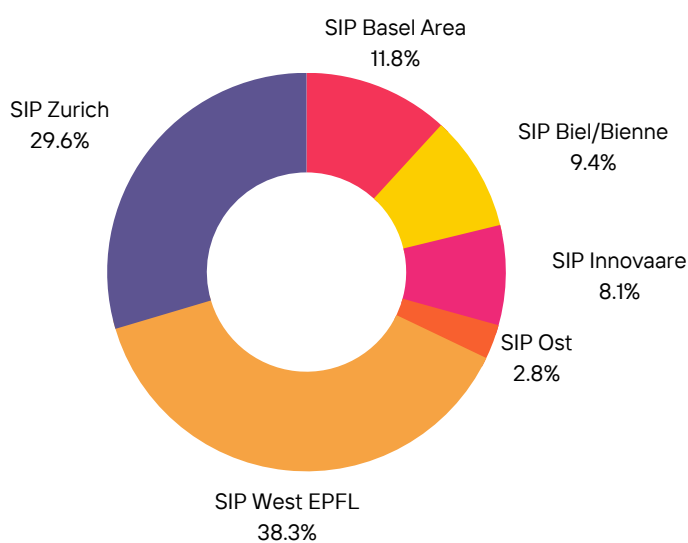
Our pool of applicants for the SI Tech4Impact initiative was remarkably diverse, representing a wide range of innovators from across Switzerland. Among the three calls, Switzerland Innovation Park West EPFL and Zurich were the most represented with 38.3% and 29.6% of the total participants, respectively. This dominance can be attributed to the large number of spinoff companies originating from the renowned universities EPFL and ETH Zurich.

Conversely, Switzerland Innovation Park Ost was the least represented with only 2.8% of the total number of participants. This figure is primarily due to the requirement that projects must be recommended by a Switzerland Innovation Park. Switzerland Innovation Park Ost was established in 2021 and joined the initiative in the 2022 call.

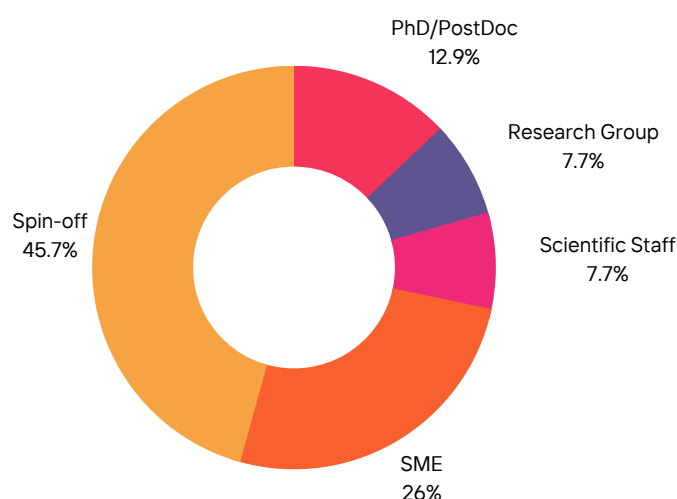
Data from the SI Tech4Impact initiative underscores the strong commitment of the academic community to advancing science for sustainability. A remarkable 28.8% of applicants are from various university departments and schools, including PhD students/postdocs, research groups, and research staff.

In addition, 26% of applicants are SMEs, while 45.7% are spin-off companies. Together, these different categories of applicants contribute to the development of breakthrough research projects that address pressing global challenges. From breakthrough technological solutions for emerging economies to addressing the energy needs of the future, these innovative projects provide transformative technological answers to the most pressing issues of our time.

## Applicants distribution across SIPs



## Applicants distribution across categories



The SI Tech4Impact initiative strategically focuses its efforts on several key Sustainable Development Goals, including:



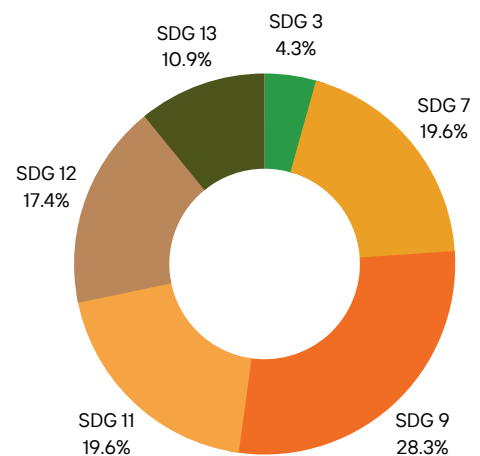
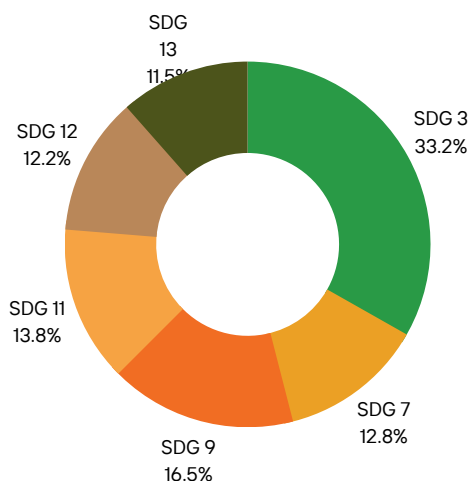
The evaluation of the SDGs addressed in all applications for the three calls revealed that 33.2% of the projects were dedicated to SDG 3 "Health and well-being". These projects focused on improving the health and well-being of people of all ages and emphasized the importance of healthcare innovation in addressing global challenges.

However, during the rigorous selection and evaluation process, overseen by a jury of experts coordinated by Collaboratio Helvetica, a notable shift in SDG representation emerged. The projects that received grants predominantly revolved around SDG 9, "Industry, Innovation and Infrastructure," which accounted for a remarkable 28.3%. This was closely followed by SDG 7, "Affordable and clean energy," and SDG 11, "Sustainable cities and communities," which each accounted for 19.6% of the selected projects.

The transition from SDG 3 to SDG 9 in project selection can be attributed to the jury's specific evaluation criteria. These criteria assigned different importance to different aspects of the projects. For example, the weighting of sustainability impact, technological innovation, team capability, marketability, and budget appropriateness played a crucial role in the selection process. Projects that focused on SDG 9 were often characterized by advanced technological innovation, strong teams, and marketability.

**SDGs addressed across applications**

**SDGs addressed across Grantees**





Cocoboard is a natural fiberboard made of coconut husks that can be used in manufacturing furniture and in housing construction. The product, designed by the company **NaturLoop**, aims to foster integration among coconut farmers and respond to the demand for affordable construction materials in developing countries.

**Plastogaz**, a spin-off of the Swiss Federal Institute of Technology Lausanne (EPFL), has developed a technology that uses powerful catalysts to selectively convert mixed plastics that cannot be recycled into methane. The Plastogaz technology has the potential to considerably reduce the greenhouse gases resulting from the disposal of plastic waste.



The composite materials currently used in marine, sports, the aerospace industry and in wind turbines are susceptible to cracking, require expensive maintenance and are difficult to recycle. The solution offered by the company **CompPair**, a spin-off of EPFL, shortens repair times from hours to minutes, extends the product service life and can help make the recycling process more efficient.



A project launched by the would be spin-off company of the Paul Scherrer Institute (PSI) named **REMRETEch**, is aimed at achieving strong municipal electronic waste disposal so as to recover valuable metals. The patented technology is designed to improve recycling, promote responsible consumption, and make towns and cities more sustainable by introducing a circular-economy approach and “urban mining”.

The technology developed by **Enerdrape**, a spin-off of EPFL, uses geothermal wall panels to harvest geothermal and excess energy within buildings for their heating and cooling needs. The patented solution helps make existing buildings more energy-efficient, cut their operational costs and reduce their greenhouse gas emissions.



The global water supply will fall short of demand. This is where the WaSTeLeSS project launched by the company **Droople** comes into play: A network of sensors delivers time-relevant data on hot- and cold-water consumption. The new findings obtained using the patented solution facilitate a better understanding of consumption behavior, allowing hot- and cold-water waste to be reduced.



COWACAPS are storage capsules, which are filled with a high energy density material utilizing liquid and solid phase transitions to store energy. This technology created by the company **COWA** in collaboration with the Innovation Park Zurich, increases the capacity of heating system thermal buffer storages by factor four. Materials used are fully recyclable salt-water mixtures based on food additives, with an extremely low carbon footprint.

**Composite Recycling** realised that 90% of all glass fibre reinforced plastic (e. g. boat hulls) ends up in landfill, with the majority of the rest either being incinerated or worse, abandoned in the environment. To solve this, they designed a reactor which can uniformly heat glass fibre reinforced plastics without grinding and destroying the valuable glass fibres in the feedstock. The outputs of the process are glass fibres and pyrolysis oil.



**Groam** is a spin-off from ETH Zurich, providing bio-based and biodegradable foaming solutions for the polymer foam industry. Their first products are rigid foams for packaging and plant substrates for indoor farming. Demand for such solutions are rising as new legislation against plastic pollution and food waste are fostering the polymer foam industry towards more sustainable solutions.



**VIVENT** delivers a cost-effective real-time sensor for a wide range of crops, with a smaller carbon footprint than the options available on the market. By using VIVENT's technology and continuously monitoring the crops, growers optimize water and fertilizer use and diagnose crop threats early enough to choose more environmentally friendly crop treatments.

**Green-Y** is a compressed air energy storage system (CAES) that can store electricity and generate renewable heat and cold with only air and water. The patented approach developed in a partnership with the FHNW significantly increases the efficiency of the complete system, enabling drastic reductions in costs and emissions for buildings.



**EIGHTINKS** is at a tipping point and the transition towards solid-state batteries is only a matter of time. To move forward, EIGHTINKS delivers a scalable manufacturing solution as they have developed a cost effective production method that enables a thin-film cell design for increased battery performance. The technology is material agnostic and compatible with every common solid-state chemistry.



Upscale22 is a project by **Gaia Technologies** to develop a novel technology to upcycle agro waste into bio-compounds and added-value resources. It tackles the ever-increasing trend to substitute synthetic compounds with natural alternatives in the cosmetics, food, and feed sectors.

**Aseptuva** builds a phototherapy device for localized deep UVC topical treatment against major skin infection vector in hospitals. This pre-clinical study will use a functional prototype of an in situ disinfection adapter, intended for catheters inserted into the human body.



**Tosa Swisstech** has been at the forefront of developing composite bipolar plates for fuel cells. The team provides a solution to substitute metal bipolar plates, an essential element of these cells - representing more than 30% of the price and more than 70% of the weight - with composite bipolar plates. The product developed is ultra-light, durable, non-corrosive, compact, and efficient.



**Openversum** has developed an inexpensive water filter that can purify river water or water from polluted groundwater wells, making it safe to drink. Because the filter can be produced by small local manufacturers it also helps create jobs in low- and middle-income countries.

**Divea** accelerates an energy-efficient and environmentally friendly process for post-combustion carbon capture using nanoporous graphene-based atom-thick membranes. This project aims to synthesize hundreds of meter squares of nanoporous graphene film by developing a low-cost process and membrane module with a high packing density.



**Rematter** main product is a hybrid earth-timber floor slab. Their novel structural system matches the performance of concrete slabs, while making use of locally sourced materials (timber and earth). It is therefore 100% recyclable and features 80% less embodied carbon. And, through advanced automation, it can be produced at a competitive cost.



Each of the 18 projects received a one-year project grant of 85,000 CHF, disbursed in installments contingent on the completion of predefined goals.

The grant disbursements followed a structured process where the second and third payments were authorized after a thorough review and approval of detailed milestone reports by the Switzerland Innovation Foundation and E4S Tech4Impact teams. These reports provided valuable insights into the progress made, accomplishments achieved, and any challenges encountered throughout the grant period.

In addition to the milestone-based approach, our comprehensive assessment of the grantees extended to a survey conducted from 2020 to 2023. This survey aimed to identify the most remarkable milestones achieved by the grantees and was based on key parameters, including the successful market launch of their products, team expansion, fundraising achievements, and significant milestones reached.

This dual evaluation process allowed us to gain a comprehensive understanding of the impact and progress of each supported project over the specified time frame.

Here are some of the standout achievements from each company:

#### COMPANY A

- Successfully raised funds.
- Redesigned the product.
- Constructed a digital platform.
- Built up the supply chain for large-scale production.
- Expanded the team to five full-time equivalents (FTEs).

#### COMPANY B

- Signed corporate investors and clients.
- Started generating revenue.

#### COMPANY C

- Installed and successfully ran a pilot.
- Obtained patents (US, EU, CA).
- Completed pre-serial production.
- Secured the first paying customers.
- Initiated the first commercial projects in the EU
- Expanded the team.

#### COMPANY D

- Serving over 100 customers on three continents.
- Established a scalable supply chain. Expanded the team with over 20 members.
- Securing strategic investors to increase market reach in the EU and US.

#### COMPANY E

- Installed a pilot system.
- Gained wider customer interest
- Expanded the market with a second product.

## Alumni Collective Achievement By The Numbers

# 18

Techologies incubated

# 20M

Raised in funding

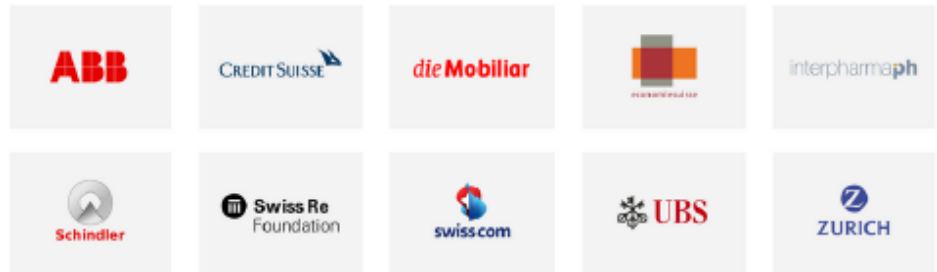
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Jobs created

# 7

Products reached the market

The companies supporting and financing Switzerland Innovation Tech4Impact as innovation partners are :



The collective dedication and hard work of the following teams were instrumental in bringing this initiative to fruition.

**Switzerland Innovation** is a network of six innovation parks across Switzerland based on a joint initiative of public institutions, academia, and the private sector with a statutory mandate from the Swiss government. Together with its partners, Switzerland Innovation forms an ecosystem accelerating the transformation of research results into marketable products and services.

**The Enterprise for Society Center (E4S)** is a joint venture by the University of Lausanne (UNIL-HEC), the Institute for Management Development (IMD) and the Ecole Polytechnique Fédérale de Lausanne (EPFL). E4S's mission is to inspire and activate the transition to a resilient and inclusive economy within planetary boundaries.

**Collaboratio Helvetica** convenes stakeholders around the complex challenges addressed in SDGs.

For inquiries related to SI Tech4Impact, please contact us at [info@e4s.center](mailto:info@e4s.center)

