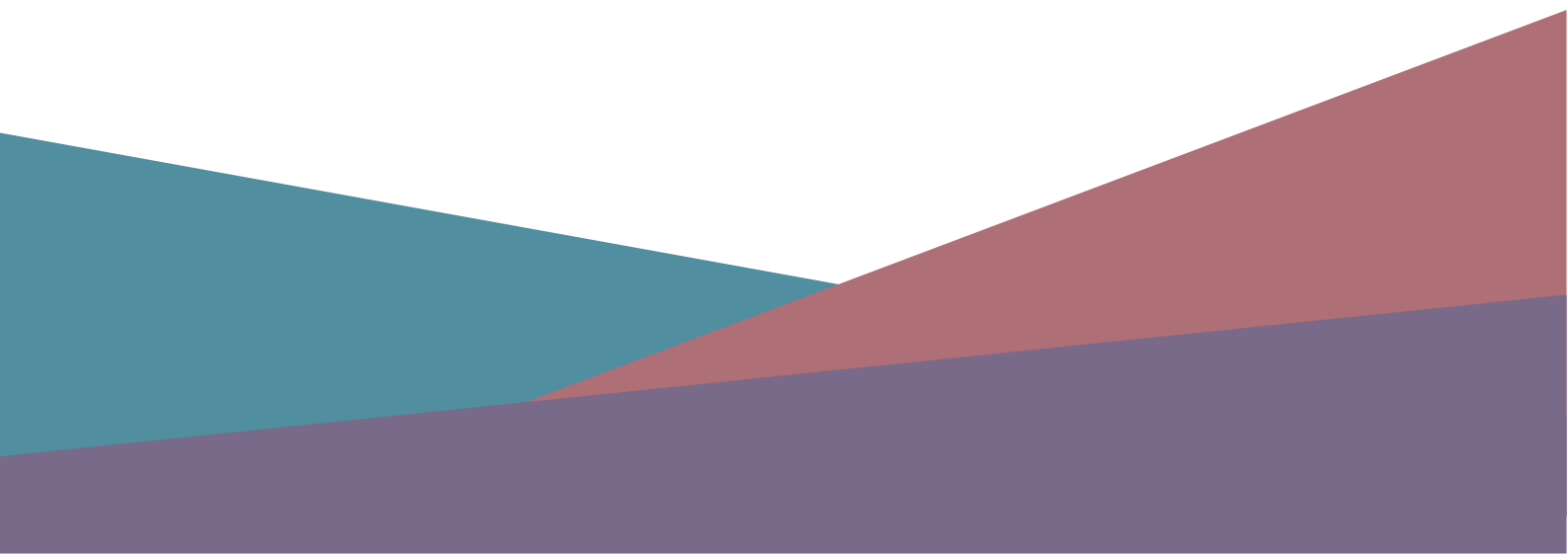


STRATEGIC PLAN 2029–2032

of the ETH Board
for the ETH Domain



Foreword by the President of the ETH Board

Dear Reader,

Education, research and innovation form the foundation of Switzerland's prosperity and competitiveness. The ETH Domain prepares the next generation of skilled professionals, generates new knowledge and develops practical solutions for the economy and society. This is made possible by its excellence in teaching, research and knowledge and technology transfer. Particularly in times of geopolitical uncertainty, technological transformation and societal challenges, the ETH Domain has a responsibility to harness its strengths for the benefit of Switzerland.



The Strategic Plan 2029–2032 sets out clear priorities. It identifies five Strategic Areas in which the ETH Domain can create significant added value for Switzerland: Human Health, Energy, Climate and Environmental Sustainability, AI and Digital Transformation and Emerging Materials and Key Technologies. The Strategic Areas build on those of the previous ERI period and are complemented by three Transversal Areas. 'Fundamental Research' creates the conditions for new scientific discoveries; 'Dialogue with Society' promotes exchange between science and society; and 'Security, Sovereignty and Resilience' helps ensure that Switzerland is prepared for new risks and can adapt to changing circumstances.

To implement the Strategic Plan 2029–2032, the ETH Board requests a funding envelope of CHF 11,761 million from the Federal Council and Parliament. This corresponds to a growth of one per cent per year in real terms and provides the ETH Domain with the necessary resources and planning certainty to fulfil its core tasks and achieve its objectives. Stable and reliable funding is one of the pillars of the ETH Domain's success. Also of key importance are Switzerland's international outlook and openness, as well as good governance and the autonomy of the ETH Domain. These form the basis for its leading international position and enable it to continue making a significant contribution to Switzerland's prosperity and competitiveness in the future.

With the Strategic Plan 2029–2032, the ETH Board is positioning the ETH Domain to meet the challenges of the coming years – with the aim to continue serving Switzerland to the best of its ability.

I would like to thank everyone who supports the ETH Domain in this endeavour.

Prof. Michael O. Hengartner, President of the ETH Board

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Overview

For the period 2029–2032, the ETH Domain aims to serve Switzerland effectively by advancing science, providing high-quality education and scientific services, and promoting innovation and knowledge and technology transfer; it also aims to remain highly competitive internationally.

Vision

The ETH Domain pursues excellence in research and education as well as in scientific knowledge and technology transfer to strengthen Switzerland's prosperity and competitiveness and to contribute to the sustainable development of society worldwide.

Mission

The ETH Domain serves society through the pursuit and dissemination of knowledge and the beneficial application of science. The ETH Domain institutions share responsibility for education and research as well as for knowledge and technology transfer. They provide graduates with strong scientific and technical expertise and the skills needed to contribute to science, industry and society in a rapidly changing world. They anticipate and support efforts to solve the most pressing national and global challenges through pioneering research and by maintaining a continuous dialogue with society. Their research activities are supported by a portfolio of research infrastructures and platforms that offer unique resources for research communities and other stakeholders in Switzerland and abroad. They also provide science-based services for the benefit of Swiss society and beyond. ETH Zurich and EPFL are renowned worldwide for their fundamental science and play a leading role in higher education, with a distinctive profile in Switzerland's educational system. PSI, WSL, Empa and Eawag pursue world-class mission-oriented research in specific thematic areas and provide education as well as continuity of expertise for the benefit of Switzerland. Together with ETH Zurich and EPFL, they promote and curate the implementation of their insights and discoveries by the public and private sectors.

Challenges and Opportunities

Geopolitical instability, technological changes, the rapid development of AI and evolving patterns of work and learning are disrupting established academic routines and incentives. In this environment, the ETH Domain must be able to set priorities in a timely manner without compromising its high standards. For the period 2029–2032, the ETH Board identifies six system-level challenges that the ETH Domain will face in the coming years, and which will have a profound impact on Switzerland and its ERI (Education, Research and innovation) system as well. These challenges highlight the systemic, societal and geopolitical conditions shaping the ETH Domain's operating environment.

- Taking Strategic Decisions in an Uncertain and Rapidly Changing World
- Preparing Future Talent: Adapting Higher Education to Societal Needs
- Ensuring Academic Freedom
- Conducting Research in a Complex Geopolitical Landscape
- Accelerating Translation of Research and Innovation towards Application
- Building Bridges and Ensuring Inclusion

Strategy 2029–2032

The strategic approach for 2029–2032 is based on the following components: (A) the specific Strategic Areas and Transversal Areas identified by the ETH Board for the period 2029–2032, (B) the tasks for which the institutions are responsible in fulfilling the mandate conferred on the ETH Domain by the ETH Act and the strategic objectives of the Federal Council, and (C) the long-term organisational development of the ETH Domain. Effectiveness and efficiency are key aspects spanning the entire Strategic Plan.

A. Strategic Areas and Transversal Areas

For 2029–2032, **the ETH Board identifies five Strategic Areas and three Transversal Areas**, where the institutions of the ETH Domain can have a strong impact individually and through collaboration.

Strategic Areas are defined as areas with a thematic focus of high societal importance in which the ETH Domain can deliver substantial scientific and technological impact. Strategic Areas aim to contribute directly to tackling major global and national challenges, through education, research and innovation efforts.

Transversal Areas are cross-cutting priorities of strategic relevance that span all Strategic Areas. They are of systemic importance, either by acting as cornerstones or enablers of the Strategic Areas or as cross-cutting responsibilities integrated within them.

The **five Strategic Areas** of the ETH Domain 2029–2032 build on the previous Strategic Areas and are:

- Human Health
- Energy
- Climate and Environmental Sustainability
- AI and Digital Transformation
- Emerging Materials and Key Technologies

The **three Transversal Areas** of the ETH Domain 2029–2032 are:

- Fundamental Science
- Dialogue with Society
- Security, Sovereignty and Resilience

Fundamental Science, grounded in academic freedom, forms the foundation of all ETH Domain activities and underpins the five Strategic Areas. Dialogue with Society is essential for achieving impact, and each Strategic Area contributes to Security, Sovereignty and Resilience.

Strategic Areas and Transversal Areas 2029–2032

Strategic Areas	Human Health	Energy	Climate and Environmental Sustainability	AI and Digital Transformation	Emerging Materials and Key Technologies
Transversal Areas					
Security, Sovereignty and Resilience					
Dialogue with Society					
Fundamental Science					

The Strategic Areas and the Transversal Areas are interconnected and synergistic, with several fields overlapping across multiple areas. They are implemented through coordinated efforts by the institutions of the ETH Domain.

B. Fulfilment of the mandate assigned to the ETH Domain

The institutions of the ETH Domain perform their manifold tasks according to the mandate conferred on them by the ETH Act and the strategic objectives of the Federal Council. For the period 2029–2032, the ETH Board sets the following objectives for each of these tasks:

High-Quality Research-Based Education. The ETH Domain strategically contributes to Switzerland's long-term competitiveness by prioritising high-quality, research-based education and by training highly qualified graduates. ETH Zurich and EPFL, with the support of the research institutes, continue to develop and implement measures to safeguard the quality of education in the long term, taking into account the projected number of students. The institutions of the ETH Domain consider advances in science and engineering, as well as the needs of society and the economy, together with the evolving expectations and motivations of future generations, when they develop their education and continuing education offers. They provide inspiring learning environments that enable students to succeed in their studies and equip them to help actively and responsibly shape the future of Switzerland and of society in general.

World-Class Research. The ETH Domain continues to conduct research at the highest, internationally competitive level, strengthening Switzerland's innovative capacity. The ETH Domain institutions aim to positively impact society through their pioneering research activities, and to contribute to resolving the most pressing local, national and global challenges. They ensure and nurture national and international collaboration and cooperation, taking into account evolving geopolitical contexts. The ETH Domain institutions actively shape and promote good practices in research, including research integrity, knowledge security and Open Science.

State-of-the-Art Research Infrastructures and Platforms. The ETH Domain conceptualises, develops and operates a portfolio of large-scale and middle-scale research infrastructures and platforms that offer unique resources and services for academic research communities and industry users. The ETH Domain's large-scale research infrastructures play a major role in the country's international reputation. The ETH Domain aims to further strengthen this role by strategically fostering investments in areas where its institutions are well positioned to make a significant contribution, and to ensure the long-term relevance of research infrastructures and benefits for Switzerland.

Impactful Knowledge and Technology Transfer. The ETH Domain institutions actively contribute to Switzerland's innovation capacity by accelerating the uptake of research results into technologies, practice and policy-making, and collaborate with industry and public partners to that end. They ensure that their students acquire the skills required to become important actors of knowledge and know-how transfer between academia and society, and foster entrepreneurship among their members. Dialogue with society continues to be central to knowledge and technology transfer activities and a key aspect for achieving a positive and broader societal impact.

Attractive Careers and Respectful Work Culture. The ETH Domain institutions strive to attract and retain talented and dedicated employees and to enable them to play a key role in the institutions' development and success. They provide an inspiring, inclusive and respectful environment for all their employees and students and recognise openness and diversity as key to excellence and creativity in education, research and all other activities. They encourage employees to embrace new forms of work and technological developments. The ETH Domain institutions continue their efforts to increase the proportion of women among their members, particularly in professorial and other leadership positions.

Real Estate Management. The ETH Domain maintains and develops its real estate portfolio in order to offer the best conditions for education, research and innovation. The institutions anticipate and plan future infrastructure demands over the long term, taking into account new forms of work and education needs and formats, as well as the projected number of students. Efforts focus on the functionality (including accessibility), cost-effectiveness and sustainability of existing and new buildings, and on maintaining their value and function. The ETH Domain aims to act as a role model in terms of sustainability, with a complete fulfilment of objectives depending on the availability of the necessary resources.

Strategic and Forward-Looking Financial Management. The ETH Domain institutions require a solid financial base and are committed to strategic, responsible and forward-looking financial management that safeguards long-term stability. Federal funding remains the backbone of financing the ETH Domain and ensures planning security. It is balanced with complementary resources while pursuing a selective and targeted funding diversification strategy and focused reserves management. When allocating federal funds, the ETH Board considers each institution's tasks, strategic requirements and performance. In view of the intensifying competition for public funds and limited resources, the ETH Board, together with the institutions, takes well-founded strategic decisions regarding prioritisation and posteriorisation, and aims to enhance effectiveness and cost efficiency in all activities.

C. Organisational Development of the ETH Domain

To respond effectively to emerging challenges such as climate change, energy, AI and cybersecurity, the ETH Domain must evolve its organisational structure to enhance agility, cooperation and resilience. Launched in summer 2022, the "FIT for the Future" project progressed through various stages, such as establishing a situation analysis and conducting a targeted portfolio analysis. The central aim of this project is to reinforce the mission-oriented approach by aligning the research institutes into a third strong strategic pillar, complementing ETH Zurich and EPFL. This structure is intended to improve joint strategic developments, among other goals.

At the beginning of 2024, the ETH Board and the institutions of the ETH Domain jointly agreed on objectives for a future-proof organisation and structure of the ETH Domain. On this basis, they developed two model variants for the implementation of these objectives. In both model variants, the research institutes acquire a new collective image under one roof, retaining their names, logos/brands and locations. The two model variants of this organisational structure were developed in 2025 and went through an internal consultation within the ETH Domain in 2026. At the time of publication of the Strategic Plan 2029–2032 of the ETH Board for the ETH Domain, no final decision had been taken regarding the chosen variant. The latest information on the project's development and related decisions is available on the ETH Board website.

Financial Requirements

The ability of the ETH Domain to sustain and further develop excellence in education, research and innovation depends strongly on the federal funding and, more broadly, on the ERI landscape funding. **A solid and stable contribution from the Swiss Confederation is essential** for allowing the ETH Domain institutions to address emerging challenges, seize new opportunities and fulfil their mandate. Only then can the ETH Domain maintain international competitiveness and continue to serve Switzerland effectively. The Strategic Plan 2029–2032 of the ETH Board for the ETH Domain is based on a +1% budget growth in real terms.

With this limited growing budget, the ETH Domain institutions would be able to launch or participate in new strategic initiatives in key areas such as AI, semiconductors, health, climate, energy or sustainability, in a timely manner, and without compromising other activities and objectives. This would also strengthen their ability to attract and recruit top talent in emerging fields, beyond what is possible through normal retirement and turnover of staff and professors. With a growing budget the ETH Domain institutions would be able to increase the number of scientific staff and professors and ensure the development of key infrastructure for research and education. Finally, the ETH Domain institutions would be able to better fulfil the federal objectives in terms of CO₂ reduction.

In a **financial situation with no real budget growth**, the ETH Domain would face constraints and operate under tension, but would strive to fulfil its core mission, provided that, at a minimum, inflation and salary adjustments were compensated. The ETH Domain institutions would prioritise their core tasks, and especially education and research. However, if such a situation were to persist, structural pressure would continue to increase, making it more difficult over time to maintain current levels of quality.

Should the financial framework become more constrained and the contribution of the Swiss Confederation decrease in real terms, the ETH Domain institutions would increasingly need to arbitrate between the maintenance of staff, the launch or continuation of strategic initiatives, and the preservation and development of infrastructure, with direct implications for their capacity to sustain excellence in education and research in the long term. The institutions would not be able to fully deliver on their mission, including training the qualified engineers needed in Switzerland or providing the services expected from them (such as policy support or health, climate and energy monitoring). Available resources would be largely concentrated on education and research, with severely limited capacity to advance other objectives such as CO₂ reduction, preserving the value and function of buildings, or the maintenance of instruments to foster spin-offs creation or to bring intellectual property to market.

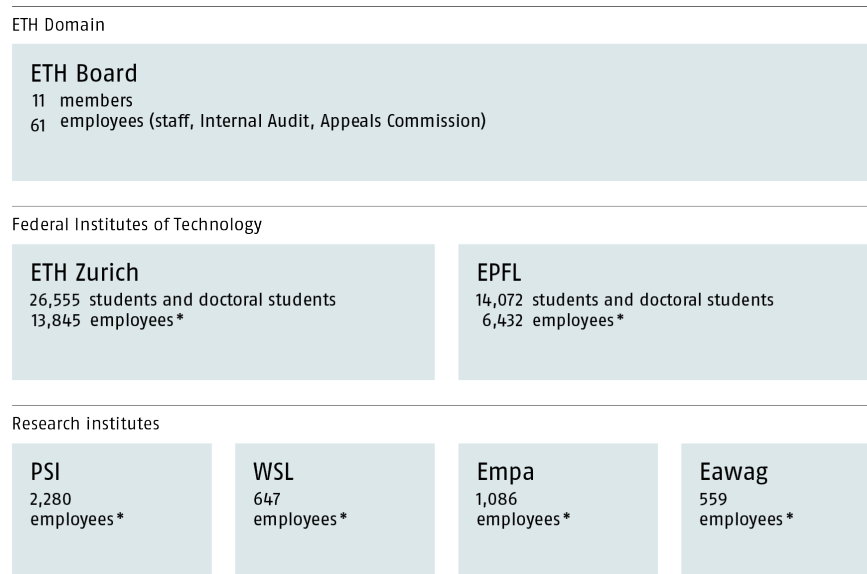
In order to preserve excellence and to address emerging priorities in areas of strategic importance for Switzerland, **the ETH Board is thus asking the Federal Council and Parliament to approve an expenditure ceiling of CHF 11,761 million for the ETH Domain for the period 2029–2032** for implementing its overall strategy with appropriate measures. Based on the financial plan for the year 2028 and adjusted for inflation, **this would represent a 1% increase per year in real terms** (+2% nominal, of which 1% to compensate for inflation).

The annual federal funding is predominantly allocated as a base budget to the institutions (approximately 95%), enabling them to fulfil their core mission. **A share of 3–5% of the Confederation's contribution is earmarked** to co-finance large-scale research infrastructures prioritised by the ETH Board, as well as other strategic initiatives and, where applicable, seed and incentive funding.

I. Context

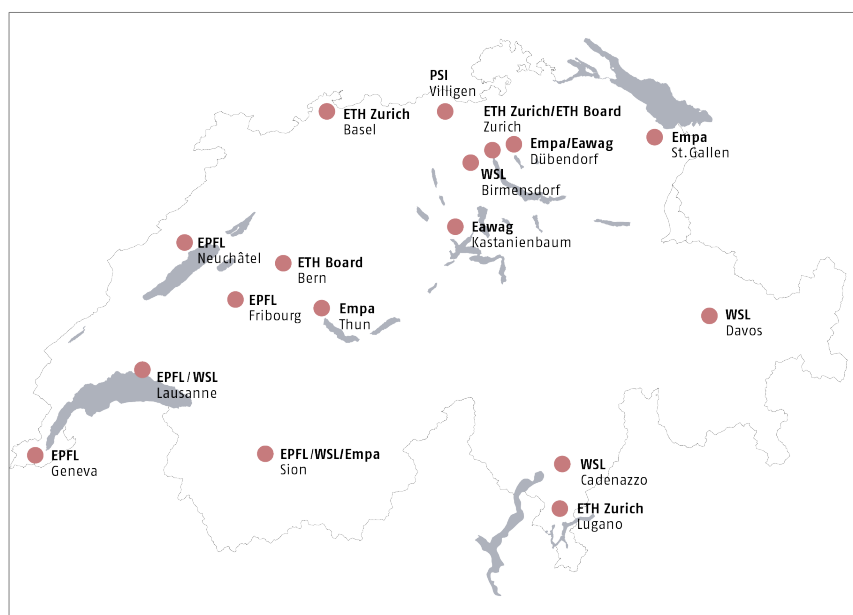
The ETH Domain comprises the Federal Institutes of Technology, ETH Zurich and EPFL, and the research institutes PSI, WSL, Empa and Eawag. The ETH Board is the strategic governing and supervisory body of the ETH Domain (see Figure 1). The ETH Domain is firmly anchored in different regions of Switzerland (see Figure 2), and its institutions are internationally renowned. The ETH Domain fulfils the mandate conferred on it by the ETH Act, based on its vision, mission and guiding principles, and through continuous investments into its unique strengths (see p.11 et sqq.).

Figure 1: The ETH Domain in numbers



*Employment contracts incl. doctoral students, as of 31 December 2025

Figure 2: The ETH Domain's locations in Switzerland



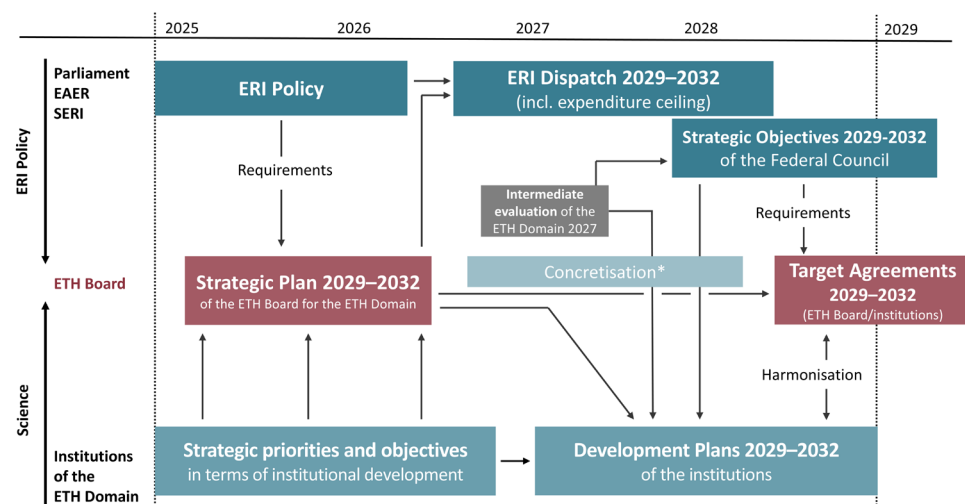
A new location of ETH Zurich is under development at Root (Canton Lucerne).

Framework of the Strategic Plan of the ETH Board for the ETH Domain

The Strategic Plan is a central tool for defining key aspects and objectives for the further strategic and organisational development of the whole ETH Domain. The document also provides information on the ETH Domain's financial requirements and is used by the ETH Domain institutions as a framework for their activities, own institutional strategies and development plans.

The State Secretariat for Education, Research and Innovation (SERI) orients itself, among other sources, on the Strategic Plan of the ETH Board for the ETH Domain to draft the corresponding chapter of the dispatch for the promotion of Education, Research and Innovation (ERI Dispatch) for the years 2029–2032 and to inform the strategic objectives of the Federal Council for the ETH Domain for the same period. The ETH Board has been mandated by SERI in this context to take into account selected elements when drafting its Strategic Plan 2029–2032 (see details on p. 73 et sqq.).

Figure 3: The Strategic Plan for the ETH Domain in the context of federal and institutional planning



* Possibly in form of sub-strategies, strategic decisions, policies, implementation plans, etc.

As the Strategic Plan 2029–2032 of the ETH Board for the ETH Domain is published in 2026, it is not possible to detail all the future actions and measures planned for the period 2029–2032. Elements that are not described in detail here will be developed in dedicated subsequent processes, such as sub-strategies, strategic decisions, policies, implementation and action plans, etc., as well as in the development plans of the institutions (see Figure 3 above).

The Federal Act on the Federal Institutes of Technology (ETH Act)

The ETH Act of 4 October 1991 defines the status, structure and mission of the ETH Domain. The ETH Act regulates the division of competencies between Parliament, the Federal Council, the ETH Board and the institutions of the ETH Domain. The ETH Domain reports to the Federal Department of Economic Affairs, Education and Research (EAER). The role of owner is performed by the EAER and the Federal Department of Finance (FDF).

The Higher Education Act (HEdA)

The HEdA establishes the basic principles for coordinating, maintaining the quality of and ensuring the competitiveness of the entire higher education sector in Switzerland. The HEdA applies to all recognised higher education institutions in Switzerland, including ETH Zurich and EPFL. It ensures the coordination of the entire Swiss higher education sector, and it obliges the higher education institutions to periodically review their instruments and processes to ensure the quality of teaching, research and services.

II. Long-Term Positioning of the ETH Domain

A. Vision

The ETH Domain pursues excellence in research and education as well as in scientific knowledge and technology transfer to strengthen Switzerland's prosperity and competitiveness and to contribute to the sustainable development of society worldwide.

B. Mission

The ETH Domain serves society through the pursuit and dissemination of knowledge and the beneficial application of science. The ETH Domain institutions share responsibility for education and research as well as for knowledge and technology transfer. They provide graduates with strong scientific and technical expertise and the skills needed to contribute to science, industry and society in a rapidly changing world. They anticipate and support efforts to solve the most pressing national and global challenges through pioneering research and by maintaining a continuous dialogue with society. Their research activities are supported by a portfolio of research infrastructures and platforms that offer unique resources for research communities and other stakeholders in Switzerland and abroad. They also provide science-based services for the benefit of Swiss society and beyond. ETH Zurich and EPFL are renowned worldwide for their fundamental science and play a leading role in higher education, with a distinctive profile in Switzerland's educational system. PSI, WSL, Empa and Eawag pursue world-class mission-oriented research in specific thematic areas and provide education as well as continuity of expertise for the benefit of Switzerland. Together with ETH Zurich and EPFL, they promote and curate the implementation of their insights and discoveries by the public and private sectors.

C. Unique Strengths

The ETH Domain accomplishes its mission based on a combination of unique strengths that act as key success factors. This allows for an excellent international positioning of the ETH Domain as a whole, and of the individual institutions with their distinct profiles.

The combination of exact, natural and engineering sciences as well as their links to social sciences, health sciences and humanities

The ETH Domain institutions are at the forefront of exact, natural and engineering sciences, driving the development of these disciplines. They are the main actors in Switzerland offering a broad range of specialisations in these areas, with respect to both research and education. This distinctive feature also allows the ETH Domain to deliver science-based services in the context of tasks assigned to it by the Federal Council. An interdisciplinary and transdisciplinary network of competencies, including social sciences and humanities, is key for the ETH Domain's capacity to provide solutions to the complex societal, political and economic challenges of our time. These cross-disciplinary linkages also contribute to the ETH Domain's educational activities, preparing students to navigate the scientific, technical and societal dimensions of complex problems. The ETH Domain institutions engage and retain the best-qualified scientists they can attract, and offer them adequate resources.

The unique education provided by the ETH Domain

ETH Zurich and EPFL, with targeted contributions by the research institutes, provide an education based largely on discovery-driven research and on interactive and project-based

teaching. Teaching at ETH Zurich and EPFL is informed by the latest breakthroughs in science and technology. The ETH Domain institutions offer students a high standard of education and continuing education, and empower them to become independent, critical thinkers who are well equipped to contribute to scientific progress, technological innovation and the responsible development of society. The ETH Domain's unique contributions to the Swiss higher education sector lie in STEM fields (Science, Technology, Engineering and Mathematics), including computer sciences. Some STEM fields that are critical to the competitiveness of Swiss industry are offered at the university level predominantly, and in certain cases exclusively, by ETH Zurich and EPFL. The research institutes complement the education mission of ETH Zurich and EPFL by offering diversified supervision and continuing education offers, as well as access to research infrastructures and platforms, and collaborations for research-based teaching. The ETH Domain also offers a unique international academic environment that is essential for excellence and for effectively preparing students for a globalised labour market.

Complementarities and synergies among ETH Zurich, EPFL and the research institutes

The complementary character of the ETH Domain institutions, combined with their academic, industrial and governmental partners, generates powerful synergies. This opens the door for comprehensive, interdisciplinary and transdisciplinary approaches in research, education and innovation. ETH Zurich and EPFL are engaged in world-class and future-oriented research and research-based education, as well as in innovation, and knowledge and technology transfer activities. PSI, WSL, Empa and Eawag focus on top-level thematic research, practical implementation and technology development. The institutions of the ETH Domain cover the entire spectrum of activities from fundamental research and education to the application of new knowledge and technologies to meet societal and economic needs. They also benefit from their locations across different regions of Switzerland, which allows them to strengthen ties with cantonal authorities, tap into local expertise, and foster closer collaboration with industry and society. With this regional embedding, the institutions of the ETH Domain also contribute significantly to regional development across Switzerland by providing knowledge, innovation and solutions tailored to local contexts. Strategic oversight and coordination of the different sites are important to fully leverage the opportunities they offer.

"FIT for the Future"

Organisational development of the ETH Domain

The ETH Board has launched "FIT for the Future", an organisational development project aimed at adapting the governance, organisation and structure of the ETH Domain to tomorrow's challenges. Its goal is to strengthen collaboration between the institutions and improve administrative efficiency. For details see online: [FIT for the Future: the organisational development of the ETH Domain](#) (see also chapter IV. C, p. 64.)

The internationally renowned large-scale and middle-scale research infrastructures and platforms

The portfolio of research infrastructures conceptualised, developed and operated by the ETH Domain is of crucial importance to the advancement of cutting-edge and innovative research. These state-of-the-art large-scale and middle-scale research infrastructures and platforms are of national and international interest and are accessible to researchers from academia and industry. They provide valuable opportunities for fostering collaborations within Switzerland and with international partners and contribute significantly to the development of the ETH Domain.

D. Guiding Principles

The ETH Domain accomplishes its mission and develops its strategy and activities based on four main guiding principles. These principles form the foundation of the ETH Domain's commitment to excellence in all its activities. The ETH Domain institutions are responsible for implementing them.

Shared values and respectful culture

The ETH Domain institutions share common values and maintain a dialogue on good practices, specifically in terms of working conditions and research integrity. The ETH Domain fosters an inspiring, creative and safe work environment in which all members can contribute and in which respect, diversity, equality, inclusion, dialogue and trust are promoted and put into practice. This culture, together with curiosity, ambition and performance, are understood in the ETH Domain as the foundation of excellence. The ETH Domain recognises that research integrity and ethics is essential to progress in science and thus offers an environment designed to teach, promote and ensure them.

Collaborative science and shared resources

The ETH Domain values collaborations, both within Switzerland and internationally. By promoting the sharing of research infrastructures and platforms, expertise and costs, as well as exploiting synergies across the ETH Domain and beyond, the ETH Domain institutions increase efficiency, impact and the reach of their research activities. Large-scale and middle-scale research infrastructures and platforms are operated as resources that benefit the scientific community, industry and society at large. The ETH Domain also fosters Open Science principles to ensure that knowledge, data and tools are made widely accessible, enabling broader participation, accelerating innovation, and amplifying the societal and economic impact of its research. This openness is carefully balanced with knowledge security in order to maintain an enriching and successful research culture.

Sustainability

The ETH Domain is committed to environmentally, socially and economically sustainable development in and through all its activities, from education to research, knowledge and technology transfer and in the construction and maintenance of its real estate portfolio and research infrastructures. The ETH Domain institutions actively support the achievement of the United Nations' sustainable development goals (SDG; Agenda 2030). In particular, the ETH Domain institutions seek to achieve a leading global position with regard to environmental sustainability by developing, providing and applying innovative solutions. They actively support the federal objectives in terms of CO₂ reduction and support the development of circular economy approaches and the sustainable management of natural resources. The ETH Domain institutions provide services in an environmentally responsible and resource-saving manner, and they act as role models and pioneers with regard to the construction and operation of their facilities.

Responsibility towards society

The ETH Domain recognises its obligation to work for the benefit and well-being of all members of society and to serve the public good. It acknowledges the freedom given to science and research and advocates a responsible and meaningful use of public funds while safeguarding the independence of curiosity-driven research. As part of its knowledge and technology transfer activities, the ETH Domain enables the uptake of research results into technologies, practice and policy-making, by providing services to the community and educating future talent to strengthen Switzerland's long-term innovation capacity. In doing so, it also acknowledges the broader impacts of science and technology, including potential unintended consequences. The ETH Domain strives to inspire society, and make science more understandable, accessible and participatory.

E. Enabling Factors

The ETH Domain relies on a set of enabling factors that are considered to be prerequisites for its long-term success and that enable its institutions to remain highly competitive internationally and to contribute to the prosperity of Switzerland.

Reliable funding from the Confederation and critical mass

Stable and reliable support from the Swiss Confederation is essential for the ETH Domain to fulfil its mandate, as it provides the necessary framework that enables the institutions to play a key role in education, research and innovation. It allows for long-term planning and the anticipation and implementation of strategic developments over multiple years. Stable, sufficient and reliable funding by the Confederation also enables the ETH Domain to fulfil the ambitious objectives set by the Confederation every four years. Third-party income can only represent a complementary funding mechanism, as it is unpredictable (and hence unstable) and is often restricted to specific endeavours. Another precondition for success is building and maintaining a critical mass of excellent students, researchers and supporting staff across the institutions and their various locations, in terms of both quantity and expertise. It increases the opportunities for internal collaborations and interaction, and makes it possible to participate in national and international networks of excellence, and allows the ETH Domain to attract different sources of funding.

Internationality and openness

Switzerland's internationality and openness are vital to the ETH Domain's ability to create benefit for the country's society and economy. In return, through its international standing the ETH Domain contributes to the recognition of Switzerland as a global centre of excellence in research and innovation. International openness gives scientists access to worldwide networking opportunities and collaborations, as well as to international large-scale infrastructures and platforms. This ensures cultural exchange and an efficient distribution of tasks with regard to infrastructures while leveraging new means of cost sharing – including the possibility of tapping into alternative sources of funding. Participation in international programmes and networks (such as the European Framework Programmes for Research and Innovation) is vital for the international recognition and competitiveness of Switzerland and its scientists. While international collaboration and cooperation in science need to take account of evolving geopolitical contexts, their benefits go beyond academia, extending into industrial agreements and the maintenance of good relations between countries in general. Attracting talent worldwide allows the ETH Domain to maintain its excellence, regardless of the candidate's country of origin. Swiss students benefit greatly from this international environment, which prepares them for a competitive and globalised labour market. International graduates and scientists bring additional knowledge and skills, as well as different perspectives, to Swiss society, and help combat the shortage of skilled employees. This highlights the importance of framework conditions that enable the retention of international talent in the Swiss workforce. Those who leave Switzerland after graduation can act as ambassadors abroad. Maintaining this international attractiveness is becoming increasingly challenging in a highly competitive global environment and within a constrained financial framework.

Good governance and responsible autonomy

The ETH Domain's autonomy is a key factor enabling its institutions to respond effectively to emerging scientific, technological and societal challenges. Within the overall strategy of the ETH Domain, the organisational and operational autonomy granted to the institutions of the ETH Domain ensures freedom to explore novel and innovative fields and to allocate resources according to scientific and strategic needs. The ETH Board is responsible for strategic decisions, fostering complementarity, cooperation and coordination between the institutions, as well as for allocating the Domain's global budget to the institutions and to

larger initiatives of strategic importance and societal relevance. The financial autonomy of the institutions allows them to invest in disruptive and long-term research, as well as in thematic and applied research. Within the scope of the legal requirements and strategic guidelines for the ETH Domain, their autonomy in terms of personnel allows them to recruit, retain and promote the most talented researchers and employees. The autonomy of the ETH Domain requires effective governance, accountability and continuous dialogue with the federal authorities. The ETH Domain reports transparently on its activities and the use of its resources, in line with international public sector accounting standards, acts within the framework of the ETH Act and aims to fulfil the strategic objectives conferred upon it by the Federal Council. The ETH Domain is a responsible employer and is accountable for its activities.

Flexibility, adaptability and resilience

Flexibility, adaptability and resilience are essential for the ETH Domain's long-term success. They strengthen the capacity of its institutions to anticipate and respond swiftly to evolving scientific, technological and societal challenges, thus ensuring that fundamental science, as a cornerstone of scientific progress, can be pursued over the longer term. Through agility in decision-making, organisational development and operations, the ETH Domain can seize emerging opportunities, mitigate risks and sustain excellence in research, education and knowledge transfer in the long term. These qualities ensure that the ETH Domain remains competitive internationally and continues to deliver at the highest level.

III. Challenges and Opportunities

Geopolitical instability, technological changes, the rapid development of AI and evolving patterns of work and learning are disrupting established academic routines and incentives. In this environment, the ETH Domain must be able to set priorities in a timely manner without compromising its high standards. For the period 2029–2032, the ETH Board identifies six system-level challenges that the ETH Domain will face in the coming years, and which will have a profound impact on Switzerland and its ERI system as well. These challenges highlight the systemic, societal and geopolitical conditions shaping the ETH Domain's operating environment. They differ from the global challenges addressed through the Strategic Areas described in chapter IV.A.1 (p. 22 et sqq.), such as climate change and biodiversity loss, the energy transition, demographic and health pressures, the rapid digital transformation and AI development, and the need to strengthen technological sovereignty.

Taking Strategic Decisions in an Uncertain and Rapidly Changing World

Geopolitical shocks and changing work patterns driven by both societal shifts and technology are challenging academia. For the ETH Domain to remain relevant and live up to its high standards, it must preserve the inherently exploratory and long-term nature of research, but also find a governance structure capable of responding quickly to changing and uncertain environments. It is also necessary to identify anticipatory factors that guide strategic decisions and consider multiple scenarios to prepare for different possible outcomes. Effectively communicating its broader contributions to Switzerland is key for the ETH Domain to maintain its strategic position in Switzerland's education, research and innovation ecosystem while at the same time fostering trust in its governance and strategic decision making.

Preparing Future Talent: Adapting Higher Education to Societal Needs

As new generations enter the workforce with evolving values, expectations and definitions of purpose, the ETH Domain institutions must continuously reassess their teaching formats and educational environments to align with the needs and motivations of new generations. At the same time, these evolving expectations must be balanced with the needs of society and the economy, including ongoing technological transformation, particularly the rapid advancement of AI, and changing labour market demands. In a context where future developments are increasingly difficult to anticipate, the ETH Domain must equip students not only with strong disciplinary foundations, but also with the adaptability, resilience and transversal competencies needed to navigate uncertainty and contribute responsibly in rapidly changing environments. Together with rising student numbers, this intensifies the demands on institutions. Innovative approaches, lifelong learning pathways, personalised learning journeys and stronger collaboration with industry and public authorities are key.

Ensuring Academic Freedom

Academic freedom refers to the ability of researchers and teachers to pursue knowledge, question established ideas and communicate their findings without undue interference or restriction. It is key to enabling breakthrough science and innovation. Research institutions need to remain autonomous in their scientific endeavours and provide spaces where diverse perspectives can be expressed and debated constructively. Academic freedom and excellence are essential to attracting leading researchers and talents to Switzerland, and they also allow students to be educated as critical thinkers and responsible citizens. While

Switzerland benefits from a supportive and science-trusting public and political environment, academic freedom is increasingly being challenged by (geo)political tensions, a merit-driven scientific environment and increased demand for more policy-driven science. The ETH Domain has the opportunity to thrive within this environment and to leverage its position to act as a global ambassador for academic freedom. To do so, it must lead by example and ensure that academic freedom is balanced with responsibility and accountability toward both the research community and society at large.

Conducting Research in a Complex Geopolitical Landscape

In the context of a changing geopolitical landscape and rapid technological developments, new risks are emerging for the misuse of research, calling for greater attention to scientific integrity and knowledge security. As technology increasingly shapes modern conflicts, the ETH Domain institutions, which develop cutting-edge technologies, are directly confronted with these challenges. A careful balance between openness, international collaboration and knowledge security is essential to sustain an enriching and successful research culture. The ETH Domain institutions can leverage their expertise and scientific excellence to support Switzerland's sovereignty and resilience within these evolving framework conditions.

Accelerating Translation of Research and Innovation towards Application

International competition in innovation and technology development is intense and likely to put Switzerland under increasing pressure in the future. To remain successful in the long term, the Swiss economy relies on a strong ERI sector that is successful along the whole value chain, from educating talented people and delivering strong fundamental and mission-oriented research to its translation into innovation, services and products, as well as adequate policies and legal frameworks. The ETH Domain can use its potential to empower Swiss industry through scientific endeavours that drive innovation by discovering new principles and expanding knowledge. Especially close collaboration with industry, along with the promotion of entrepreneurship, facilitates the rapid uptake of the ETH Domain's findings and inventions, while also offering the ETH Domain new perspectives that enhance its research and innovation. By accelerating knowledge transfer through both innovation and trained experts, the ETH Domain can deliver research results and technology to respond to key challenges for Switzerland.

Building Bridges and Ensuring Inclusion

In pluralistic or fragmented societies, fostering equality and inclusion is both a challenge and a responsibility. In this context, the ETH Domain is committed to honing and clearly communicating its equality-oriented and inclusive values and principles. Enabling a diverse and enriching research and teaching environment allows the ETH Domain to remain highly competitive at the global level and attract the best talent. Fostering inclusion remains essential as a means of generating societal impact, while actively promoting dialogue between science and society helps build bridges across social, cultural and disciplinary groups.

IV. Strategy 2029–2032

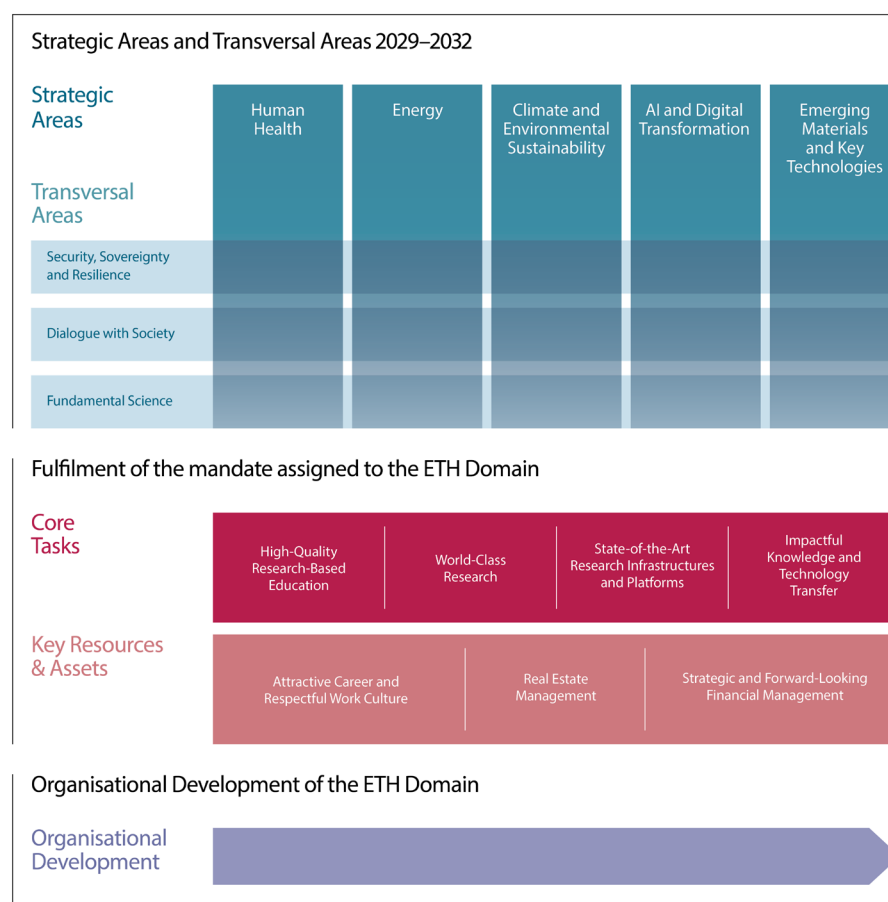
For the period 2029–2032, the ETH Domain aims to serve Switzerland effectively by advancing science, providing high-quality education and scientific services, and promoting innovation and knowledge and technology transfer; it also aims to remain highly competitive internationally.

The ETH Board defines five Strategic Areas and three Transversal Areas, in which the ETH Domain is well positioned to have a strong impact. It also identifies a set of measures to achieve excellence in all the ETH Domain's core activities and the tasks for which the institutions are responsible in fulfilling the mandate assigned to the ETH Domain. The activities of the ETH Domain are performed according to the guiding principles depicted on page 13.

The concept of effectiveness and efficiency underpins the entire Strategic Plan 2029–2032 of the ETH Board for the ETH Domain. The document also includes the transversal themes that have been defined by SERI for the ERI Dispatch 2029–2032 (“Digital Transformation”, “Sustainable Development”, “Equality” and “National and International Cooperation”; see also p. 74 et seq.). Some of these themes overlap with the Strategic Areas and Transversal Areas defined by the ETH Board for the period 2029–2032.

The Strategic Plan 2029–2032 defines the overarching goals of the ETH Domain and provides a common framework for its institutions. ETH Zurich, EPFL, PSI, WSL, Empa and Eawag are responsible for implementing it in line with their respective mandates and according to their specific contexts. To this end, they devise their own development plans, strategies and action plans. Setting priorities and posteriorities falls under the responsibility of the institutions and depends on the funds at their disposal.

STRATEGY 2029–2032



A. Strategic Areas and Transversal Areas 2029–2032

Strategic Areas and Transversal Areas 2029–2032

For 2029–2032, the ETH Board identifies five Strategic Areas and three Transversal Areas, where the institutions of the ETH Domain can have a strong impact individually and through collaboration.

Strategic Areas are defined as areas with a thematic focus of high societal importance in which the ETH Domain can deliver substantial scientific and technological impact. Strategic Areas aim to contribute directly to tackling major global and national challenges, through education, research and innovation efforts.

Transversal Areas are cross-cutting priorities of strategic relevance that span all Strategic Areas. They are of systemic importance, either by acting as cornerstones or enablers of the Strategic Areas, or as cross-cutting responsibilities integrated within them.

The **five Strategic Areas** of the ETH Domain 2029–2032 build on the previous Strategic Areas and are:

- Human Health
- Energy
- Climate and Environmental Sustainability
- AI and Digital Transformation
- Emerging Materials and Key Technologies

The **three Transversal Areas** of the ETH Domain 2029–2032 are:

- Fundamental Science
- Dialogue with Society
- Security, Sovereignty and Resilience

Fundamental Science, grounded in academic freedom, forms the foundation of all ETH Domain activities and underpins the five Strategic Areas. Dialogue with Society is essential for achieving impact, and each Strategic Area contributes to Security, Sovereignty and Resilience.

Figure 4: Representation of the five Strategic Areas and three Transversal Areas of the ETH Domain for 2029–2032

Strategic Areas and Transversal Areas 2029–2032

Strategic Areas	Human Health	Energy	Climate and Environmental Sustainability	AI and Digital Transformation	Emerging Materials and Key Technologies
Transversal Areas					
Security, Sovereignty and Resilience					
Dialogue with Society					
Fundamental Science					

The Strategic Areas and the Transversal Areas are interconnected and synergistic, with several fields overlapping across multiple areas. They are implemented through coordinated efforts by the institutions of the ETH Domain.

A.1 Strategic Areas

Human Health

Context and Rationale

Human health is both a global challenge and an opportunity for Switzerland to lead transformative change. The ETH Domain is strategically positioned to make decisive contributions to building healthier societies, strengthening healthcare systems, and advancing equitable innovations that benefit people worldwide. The ETH Domain can accomplish this by integrating world-class fundamental research with applied, translational and interdisciplinary research, supported by outstanding research infrastructures. The Strategic Area *Human Health* of the ETH Domain complements the missions of the Faculties of Medicine and hospitals by focusing on three strategic priorities for the period 2029–2032: Prevention & Monitoring, Diagnostics & Prognosis, and Therapy & Rehabilitation.

Prevention & monitoring: Major gains in human health are achieved through a spectrum of preventive measures, including medical interventions (such as medications and vaccinations), lifestyle interventions (such as improved nutrition and physical activity), and environmental interventions that identify and reduce harmful exposures in both built and natural environments (such as water and wastewater infrastructure, blue-green cities, ..., see also *Climate and Environmental Sustainability*, p. 26 et seq.). Health monitoring provides the foundation for assessing and improving prevention efforts through the systematic collection and analysis of data to quantify impact, detect patterns and anticipate emerging threats at both individual and population levels. Data science therefore plays a central role in this strategic priority (see also *AI and Digital Transformation*, p. 28 et seq.).

Diagnostics & prognosis: Early and accurate detection of disease remains one of the most powerful levers to improve outcomes, reduce costs and enable personalised interventions. While progress has been achieved in imaging, molecular profiling and data-driven diagnostics, current approaches often remain fragmented, partially invasive, or inaccessible, limiting their broader impact on health systems. The next frontier lies in (i) integrating multiple data modalities to capture the complexity of disease biology and improve diagnostic precision and prognostic accuracy while (ii) developing scalable modes of deployment with compelling accessibility and cost-benefit ratios.

Therapy & rehabilitation: Therapeutic outcomes depend strongly on individual biology, cognition, behaviour and environment. Future treatments must be personalised and accessible, integrating pharmacology, bioengineering, digital health, new approaches in radiation-based therapy, new materials and device technologies, and environmental design. Integrating multi-scale and multi-modal data with computational and physics-based models is essential for understanding the fundamentals of health and disease mechanisms, and informing targeted, personalised medicine.

A transdisciplinary and integrated vision of health requires cooperative and coordinated national efforts. By working hand in hand with industry, healthcare providers and policymakers, the ETH Domain can translate scientific excellence into measurable impact. Together with partners from the healthcare ecosystem, the ETH Domain can increase its efforts in responsible and data-driven health innovation, delivering tangible benefits to individuals, communities and society, while upholding the nation's core values of rigour, inclusiveness and trust.

Objectives and Contributions of the ETH Domain

Advances in prevention, diagnostics and therapy all rest on strong foundations in fundamental, curiosity-driven research. Progress in these areas relies on expertise that spans life and physical sciences, environmental sciences, engineering, mathematics and computer science. The ETH Domain drives medical innovation by translating advanced science and engineering into next-generation devices and therapeutic systems. The capacity to bridge fundamental research with robust, application-oriented solutions is crucial for

developing safe and effective technologies that directly benefit human health. For example, expertise in robotics and sensor development, combined with deep knowledge of air and water quality monitoring and data science, allows for the creation of advanced environmental health networks capable of detecting and predicting health-relevant changes in real time (see also *Climate and Environmental Sustainability*, p. 26 et seq.). The convergence of the investigation, design and engineering of biological systems, as well as multi-scale and multi-modal imaging and omics (multi-scale life sciences), with AI and computational modelling will have a strong impact on the entire health field. It has the potential to reveal fundamental mechanistic insights across spatial and temporal scales, opening new avenues for molecular design, protein and cell-based therapies, and the analysis of patient-derived samples. These technologies will enable health promotion and monitoring by providing critical data to support decision-making, both for individual patients and across entire populations, allowing the ETH Domain to strengthen its collaboration with public health authorities for more effective prevention and intervention.

Achieving early and accurate disease detection requires new sensing technologies, computational infrastructure and interoperable data frameworks, supported by advances in both AI- and physics-based modelling. With its inter- and transdisciplinary expertise, the ETH Domain can truly support these approaches to enable predictive, dynamic models of disease evolution, leading to earlier detection, better patient stratification, and more adaptive treatment strategies for complex conditions such as cancer, neurological and metabolic disorders. The NCCR RNA & Disease, the NCCR Microbiomes and the NCCR Molecular Systems Engineering, co-led by ETH Zurich, aim for example to make strong contributions to diagnostics and therapy with their work on RNA signatures of diseases, RNA-based treatments, microbiome-based diagnostics and interventions, synthetic biological systems and engineered therapeutics.

Advances in tissue engineering and organoid systems are accelerating drug discovery and the development of innovative treatments. Separately, they also support the creation of personalised therapeutic models. The ETH Domain can play a key role in the development of devices and digital tools for the advancement of therapy and rehabilitation as well as AI-driven analysis of omics and imaging data to support precision medicine and innovative mental health approaches. Its expertise in robotics and neurotechnology can advance prosthetics, exoskeletons and brain–computer interfaces, while its digital platforms can extend to healthcare.

In close connection with the Strategic Area *AI and Digital Transformation* (p. 28 et sqq.), institutions within the ETH Domain are developing concrete solutions for data-driven health, such as supporting the implementation of electronic patient records and enabling advanced analytics platforms, advancing the responsible development and use of secure digital health solutions. Materials and device technologies are also undergoing a major transformation (see also *Emerging Materials and Key Technologies*, p. 30 et sqq.). The ETH Domain's combined strengths in life and material sciences, micro- and bioengineering, pharmaceutical technology, chemistry, robotics and computation support the development of bio-integrated implants, adaptive rehabilitation devices, and digital health tools that dynamically respond to patient needs.

Partnerships with hospitals, research centres and industry are critical to achieving clinical validation and delivering societal impact. These collaborations provide the translational, regulatory and ethical frameworks that ensure innovations are safe, accessible and equitable, and build the trust necessary for adoption and long-term success. They should be facilitated, strengthened and supported by the technical means to handle and share sensitive data. Finally, the ETH Domain will continue to provide high-quality education in the areas of life sciences, health technologies and human medicine, with a specific focus on medical technology, ensuring that its programmes optimally complement those offered by other Swiss higher education institutions. A good example of this complementarity is the Bachelor of Human Medicine at ETH Zurich and the MD-PhD programmes at ETH Zurich and EPFL.

Energy

Context and Rationale

As global energy demand rises and climate change accelerates, building a secure, resilient and sustainable energy system has become one of the world's most pressing challenges. In Switzerland, this is guided by the Energy Strategy 2050 and the commitment to net-zero GHG emissions by 2050. Achieving these goals requires unprecedented innovation across technology, policy and society — alongside a full-scale transition to renewable energy and a determined increase in efficiency and a reduction in overall energy demand. Meeting these goals is not only a matter of climate policy but a fundamental issue of national security, enhancing Switzerland's energy sovereignty and resilience against geopolitical shocks. The relevance of the ETH Domain strategy in this area goes way beyond Switzerland and supports the Swiss innovation ecosystem on global level. The Strategic Area *Energy* addresses these multifaceted challenges with two closely linked strategic priorities: *Energy Transition* and *Net-zero GHG Emissions*. These efforts are embedded in a broader European context toward climate neutrality and energy security. Furthermore, ETH Zurich, EPFL and the research institutes substantially contribute to the education of experts through dedicated programmes and projects at doctoral and post-doctoral level.

Energy Transition refers to ensuring reliable, resilient and affordable access to energy while transitioning away from fossil fuels. It encompasses energy supply and demand, system security, affordability, decentralisation and resilience. Achieving this transition requires the accelerated exploitation of domestic renewable energy sources, the effective integration of diverse energy sources in the energy grid, unlocking the demand-side flexibility potentials and the deployment of economic storage solutions, including batteries, advanced thermal storage and Power-to-X technologies to enable sector coupling and energy availability and management associated with emerging infrastructure (e.g. data centers and AI; see also *AI and Digital Transformation*, p. 28 et sqq.). Integrating variable renewable energy at scale, alongside existing nuclear and hydropower, while maintaining grid stability, affordability and resilience remains a central challenge.

With expertise spanning the natural sciences, engineering, social sciences and humanities, the ETH Domain is uniquely positioned to develop holistic solutions and to analyse energy systems from technological, economic, ecological and societal-acceptance perspectives. It supports evidence-based decision-making and fosters open dialogue with society to enable informed public debate. Accelerating Switzerland's energy transition further depends on the rapid translation of innovations from laboratory to market, enabled through ETH Domain technology transfer platforms, demonstration projects, Living Labs, and strong partnerships with industry.

Net-zero GHG Emissions responds to the imperative to achieve carbon neutrality and, ultimately, negative emissions as quickly as possible. Sustainable energy systems play a crucial role in this transition and depend on responsible resource management, with a strong focus on the design, reuse and recycling of materials used in energy conversion and infrastructure. Prioritising responsible energy use for societal needs and scaling down wasteful production will be key components in achieving net zero. What emissions remain may be addressed with the development of CO₂-negative materials and technologies offering pathways for actively removing CO₂ from the atmosphere. Finally, integrated approaches at campus, city and regional scales can serve as Living Lab for systemic solutions, enabling real-world testing and implementing blueprints that can be scaled and replicated globally.

These strategic priorities are closely interlinked with the other Strategic Areas. For example, *Energy Transition* and *Net-zero GHG Emissions* are closely connected to *Climate and Environmental Sustainability* (see p. 26 et sqq.) as mitigation and adaptation strategies are critical for maintaining ecological integrity and biodiversity under climate change, and yet, their potential adverse effects on environmental systems require systematic evaluation. This Strategic Area also heavily benefits from advances in *Emerging Materials and Key*

Technologies (see p. 30 et sqq.) and *AI and Digital Transformation* (see p. 28 et sqq.), as they enable breakthroughs in areas such as battery chemistry and photovoltaic materials and provide the basis for optimising increasingly complex energy systems, respectively.

Objectives and Contributions of the ETH Domain

For the period 2029–2032, the ETH Domain aims to leverage its unique combination of fundamental and applied research, large-scale research infrastructures and close collaboration with industry to advance the areas of both *Energy Transition* and *Net-zero GHG Emissions*. Strong education programmes train the future leaders in energy research and development needed for the successful implementation of the Swiss energy and long-term climate strategies. Building on successful programmes like the Joint Initiatives (2023–2026) and active engagement in the SFOE SWEET/SWEETER, as well as other programmes funded by Switzerland and Europe, the institutions shall continue to drive innovation across the entire energy value chain. Technology transfer shall be accelerated through the ETH Domain's innovation ecosystem, including existing and future system-level demonstrators, energy-focused spin-offs and strategic partnerships with Swiss industries. The Coalition for Green Energy and Storage (CGES) – a public-private partnership initiated by EPFL, ETH Zurich, PSI and Empa – is a key example of ETH Domain efforts to create impact, with the goal of enabling the scaling of technologies from demonstrator to industrial levels.

The ETH Domain aims to contribute to Switzerland's energy transition by developing next-generation solar technologies and supporting their large-scale deployment while advancing existing wind and hydropower technologies, driving forward next-generation battery and power-to-X storage systems for sustainable zero-emission mobility and grid-scale storage. It also develops energy-efficient technologies and processes, performs scenario modelling and systemic optimisation, maintains expertise in nuclear energy and supports Swiss authorities with scientific advice and independent analyses. Energy storage research in the ETH Domain spans a wide range of technologies and scales, addressing electrical, thermal, chemical and mechanical storage solutions essential for a renewable-based energy system. Activities range from fundamental materials research for advanced batteries and thermal storage media to the development of catalysts and chemical conversion processes. In this context, besides other activities, NCCR Catalysis and NCCR Separation are pivotal.

The integration of different energy sources is supported by advanced energy system scenario models and control algorithms using machine learning exact grid optimisation developed at ETH Zurich, EPFL, PSI and Empa. Demonstration platforms such as PSI's Energy System Integration platform (ESI), EPFL's smart grid platform and systemic demonstrators, and Empa's ehub, NEST and move provide real-world testing environments. Eawag and WSL investigate how the expansion of renewable energy infrastructure affects landscape integrity, biodiversity and water resources, providing science-based guidance to balance ecological protection with energy transition goals. The ETH Domain's nuclear energy research and service infrastructures continue to deliver important contributions to guaranteeing the highest safety standards for the long-term operation of Switzerland's nuclear power plants and their safe decommissioning and disposal. Monitoring and research on innovative nuclear solutions are very important, and maintaining domestic nuclear competencies for the decades to come remains crucial. Swiss contributions to ITER, particularly those of the Swiss Plasma Center (SPC), position Switzerland at the forefront of fusion energy research. Across all of these research threads, ETH Domain experts are important partners of the federal, cantonal and local authorities, providing valuable knowledge and expertise on energy-related questions.

Achieving net-zero GHG emissions requires technologies and materials that are circular by design – built for reuse and recycling – and CO₂-negative solutions for active carbon removal from the atmosphere. The ETH Domain can leverage its expertise in materials science to that aim (see also *Emerging Materials and Key Technologies*, p. 30 et

sqq.). The ETH Domain institutions develop new materials, processes and circular design strategies. This also includes the scientific foundation and applied concepts regarding how to sustainably increase Swiss wood production under climate change, and how to maximise the use of wood in construction, thus boosting its long-term use for carbon storage. Complementing these management and technological solutions, the ETH Domain also continues to monitor and assess natural carbon sequestration while gaining an increased understanding of conflicting objectives and effects on nature. Initiatives such as EPFL's Net-Zero Valais showcase how industry and ETH Domain institutions can team up to achieve systemic optimisation and greenhouse gas reduction with economic benefits. Finally, the campuses of ETH Domain institutions aim to act as pioneers and role models, targeting 50% emission reductions by 2030 while serving as Living Labs for integrated solutions that combine renewable energy, efficiency measures and behavioural change (see also p. 58 et seq.).

Overall, the Strategic Area *Energy* supports the federal energy and long-term climate strategies, helps to reduce dependence on fossil fuels and supports Swiss industry in the energy transition. It also strengthens Switzerland's role within the European energy transition and climate protection landscape, ensuring alignment with EU net-zero pathways. CO₂-negative technologies can position Swiss companies in the emerging carbon removal market. Living Labs help build public trust and accelerate the adoption of sustainable energy solutions across Swiss municipalities. Finally, by training the next generation of energy professionals and fostering cleantech entrepreneurship, the ETH Domain ensures Switzerland captures long-term value from the energy transition.

Climate and Environmental Sustainability

Context and rationale

Human activity is reshaping Earth's systems at unprecedented magnitude and speed, pushing it beyond its safe operating space. The burning of fossil fuels, land-use change, intensive agriculture and non-circular resource use have significant impacts locally and globally, with, for example, accelerated climate change, biodiversity loss and environmental pollution. Addressing these challenges requires bold transformative actions and stewardship, encompassing mitigating and adapting to climate change, transitioning from a linear to a circular economy, establishing sustainable production and consumption patterns, halting and reversing the loss of biodiversity, managing changing water resources, and reducing global inequalities. Because these drivers and impacts are interconnected, solutions must be systemic and integrated.

Within the Strategic Area *Climate and Environmental Sustainability*, the ETH Domain focuses on the following strategic priorities for the period 2029–2032: Preparing for climate changes and climate extremes; Developing One Health solutions; Creating resilient communities and environments; Managing resources through sustainable and circular solutions. These priorities reflect urgent and interconnected challenges for humanity to safeguard its natural resources for current and future generations. Climate change, extreme events and their impacts directly threaten human and natural systems, requiring effective and feasible adaptation and risk management responses. One Health recognises the close links between environmental integrity, human and animal health, and well-being. Creating resilient communities and environments strengthens adaptive capacity in the face of shocks and stresses, while sustainable resource management safeguards the natural resources on which societies depend. At the same time, fostering fundamental research and exploring technological innovations, and addressing complex trade-offs between energy, climate and materials, are essential for expanding the range of sustainable and circular solutions.

Synergies with the other ETH Domain Strategic Areas create systemic impacts. *AI and Digital Transformation* (see p. 28 et sqq.) accelerates the use of data science and AI across

climate and environmental sustainability disciplines, while ensuring that usage of AI systems is robust and aligned with societal values; *Energy* (see p. 24 et sqq.) provides crucial knowledge on the energy transition aimed at mitigating climate change; *Human Health* (see p. 22 et seq.) is core to the One Health topic. *Emerging Materials and Key Technologies* (see p. 30 et sqq.) carries considerable potential for sustainable environmental solutions, such as new technologies for Earth observations.

Objectives and Contributions of the ETH Domain

Climate and environmental sustainability have been focus areas of the ETH Domain for many years, and there are numerous projects and initiatives in these areas. For example, the Joint Initiative “Speed2Zero”¹ provides invaluable insights and tools for a sustainable transformation towards net-zero greenhouse gas (GHG) emissions and positive impacts on biodiversity. The “Climate Solution Hub” combines technology development and nature-based solutions in demonstrators and Living labs that offer solutions and strategies for society, policy frameworks and industrial implementation at scale. The newly launched NCCR “Clim+ – Climate Extremes and Society: Strengthening Resilience” offers tremendous potential for further advancing inter- and transdisciplinary climate research and defining the Swiss climate landscape for years to come. These initiatives, alongside the Albert Einstein School of Public Policy at ETH Zurich, facilitate the rapid uptake of scientific advances into policy and practice. Long-term observations and monitoring of changes in the Earth System through national and international research infrastructures, such as ACTRIS², ICOS³, LWF⁴, NFI⁵, PERMOS⁶ or GLAMOS⁷, are crucial for understanding climate change and biodiversity loss, extremes and trends, and net-zero efforts, and new large initiatives are being set up, such as the Swiss GeoLab. The ETH Domain builds on its long tradition of addressing climate and environmental challenges and their solutions holistically by supporting research, teaching, and knowledge and technology transfer. The four thematic strategic priorities in this Strategic Area, as outlined above, address the following:

Preparing for Climate Change and Climate Extremes requires an integrated understanding of current and projected future climate trends, compound events, extremes and unforeseen events. The research conducted in the ETH Domain institutions shall help to connect long-term climate trends and extremes with societal dynamics and emerging natural hazards. These research directions aim not only to advance understanding of climate change impacts, disaster risk reduction and climate change adaptation, but also to enable societies to monitor, absorb and adapt to profound changes in a rapidly evolving climate.

Developing One Health Solutions is an integrated, unifying approach that seeks to sustainably balance and optimise the health of people, domestic animals and the ecosystems they share. This requires collaborative, multisectoral and transdisciplinary efforts for coordinated action. In addition to scientific inquiry, this approach emphasises early detection of current and future societal needs and providing regulatory bodies with fact-based insights to support evidence-based decision-making. Examples include the need to create more green, permeable and near-natural space in cities to increase climate resilience and optimise urban biodiversity, as well as maintaining or restoring resilient ecosystems.

Creating Resilient Communities and Environments improves the ability of urban, rural and alpine settlements and ecosystems to withstand or adapt to shocks and drastic changes as well as to gradual, less obvious changes. Examples of inter- and transdisciplinary collaborations include building energy systems (production, storage and grid) which are nature positive and resilient to a wide range of climatic conditions addressed by the first thematic priority (see also *Energy*, p. 24 et sqq.), or ownership and revenue schemes and regulations for safeguarding and empowering local populations.

¹Sustainable Pathways towards Net Zero Switzerland (Speed2Zero)

²The Aerosol, Clouds and Trace Gases Research Infrastructure, Switzerland (ACTRIS)

³Integrated Carbon Observation System Research Infrastructure (ICOS RI)

⁴Long-term Forest Ecosystem Research (Langfristige Waldökosystemforschung, LWF)

⁵Swiss National Forest Inventory (NFI)

⁶Swiss Permafrost Monitoring Network (PERMOS)

⁷Glacier Monitoring in Switzerland (GLAMOS)

Managing resources through sustainable, circular solutions aims to safeguard natural resources and increase resource efficiency by redesigning value chains to prioritise durability, reuse and material recovery. Interdisciplinary activities include monitoring resource usage, developing advanced recyclable and biodegradable materials, creating engineering processes that enable closed-loop systems, devising methods for resource-efficient production, and offering economic and policy analysis on how to govern a transition towards circularity.

The Strategic Area *Climate and Environmental Sustainability* draws on knowledge produced with scientific rigour and epistemological reflection in fundamental science and applied research. Substantial emphasis is placed on embedding fundamental research into the wider effort to make it societally impactful. Innovation driven by the Strategic Area increases economic value creation, supporting the emergence of new industries, high-quality jobs and export opportunities in climate services, health solutions, resilient infrastructure and circular technologies. The corresponding knowledge generation, education and capacity building fosters interdisciplinary expertise, skilled workforces, strong institutions and evidence-based policy frameworks that enable sustainability transitions across sectors.

With this Strategic Area, the ETH Domain contributes to the efforts to meet the targets of the Paris Agreement and the 2030 Agenda, with its 17 Sustainable Development Goals. At the national level, this Strategic Area addresses and provides science-based input not only for the Federal Council's long-term climate strategy to 2050, but also for the national objectives and legal frameworks concerning climate and environmental protection and human well-being.

AI and Digital Transformation

Context and Rationale

Switzerland faces a decisive window of opportunity to secure its position as a global innovation hub while safeguarding its democratic values, economic resilience and societal cohesion. *AI and Digital Transformation*, with a focus on digital sovereignty and proficiency, is identified as an area of strategic importance spanning education, research, and knowledge and technology transfer. Within this Strategic Area, the ETH Domain shall focus on the following priorities: *Responsible AI and Data Science*, *Quantum Computing*, *Cybersecurity*, and *Digital Literacy and Ethics*. Adjacent priorities, such as *Cyber-Physical Systems* covering drones, robotics and space technology, are described under *Emerging Materials and Key Technologies* (p. 30 et sqq.).

Open, transparent and sovereign AI should be a key driver of the digital transformation, and should become foundational to healthcare, public administration and critical infrastructure alongside data infrastructures and algorithmic systems. Without transparent, secure and human-aligned design principles, these technologies risk undermining privacy, legal certainty and institutional trust. To protect these values, Switzerland must invest in responsible AI, data science and cybersecurity, and allocate resources to developing and operating these capabilities as technically excellent public goods. The ETH Domain institutions can contribute to this aim with cutting-edge research and high-quality education programmes. Due to its transversal relevance, the topic of AI is addressed throughout the entire Strategic Plan 2029–2032 of the ETH Board for the ETH Domain (see also chapter VI, p. 74).

Switzerland's high-value industries, including pharma, medtech, robotics, aerospace, precision engineering, advanced manufacturing and energy, depend on digital systems that are trustworthy, reliable and innovative. Quantum technologies, and particularly quantum computing, are expected to transform global value chains by enabling unprecedented capabilities in simulation, optimisation and secure communication. Realising this potential

depends not only on hardware and infrastructure, but also on advances in quantum algorithms, software, compilers, verification and benchmarking tools, and application stacks. To maintain its industrial leadership and translate hardware and computational progress into scientific, industrial and societal impact, Switzerland must strengthen its domestic capacity and capability in these technologies through world-class research infrastructures, interdisciplinary collaboration, and talent development.

Digital transformation will continue to change the nature of work, education and public life. To be truly responsible, the widening skills gaps, algorithmic biases and structural digital exclusion must be addressed. Higher education institutions must integrate ethics and digital literacy into their curricula, promoting interdisciplinary learning that empowers students to shape technology in the service of society and thus support its resilience. *AI and Digital Transformation* underpins all the other Strategic Areas, as they increasingly rely on high-performance computing, data infrastructure, machine learning and AI to deliver effective and scalable impact.

Objectives and Contributions of the ETH Domain

The ETH Domain plays a central role in shaping Switzerland's digital future by advancing fundamental research, developing trustworthy technologies, fostering collaboration with government bodies and the European Union, and promoting their responsible application across society. Building on its national mandate and scientific excellence, the ETH Domain contributes to *AI and Digital Transformation* through several flagship initiatives and collaborative platforms, many of which extend beyond institutional boundaries and are closely linked to other Strategic Areas.

Responsible AI and Data Science: The ETH Domain's leadership in responsible AI builds on the Swiss National Supercomputing Centre (CSCS) and its Alps Research Infrastructure. Through coordinated efforts across all its institutions and collaborations with universities, hospitals and regulatory bodies, the ETH Domain is actively shaping the Swiss National AI Initiative (SNAI). This initiative aims to foster AI systems that are robust and aligned with societal values. As part of this effort, the Swiss LLM Apertus is fully compliant with the EU AI Act and shall continue to be developed. Its openness aims to support broad adoption and foster innovation across science, society and industry. A key driver is the Swiss Data Science Center (SDSC+), whose expansion shall accelerate the adoption of cutting-edge data science and machine learning methods across scientific disciplines and sectors. As a national infrastructure, SDSC+ promotes reproducible, transparent and high-impact curation and use of data and AI discovery, supporting, for instance, health and biomedical research, climate and ecosystem modelling, and digital society, as well as energy distribution and materials discovery – thereby directly supporting all the other Strategic Areas.

Quantum Computing: ETH Zurich, EPFL, PSI and Empa jointly contribute to the development of quantum computing, communication and sensing (cf. *Emerging Materials and Key Technologies*, p. 30 et sqq.). National and international partnerships – such as the NCCR SPIN, the Quantum Center in Zurich, the Quantum Science and Engineering Center at EPFL, and the Quantum Computing Hub at PSI – are advancing applications with significant potential for secure infrastructure, materials development and high-performance computing, creating direct synergies with the present Strategic Area.

Cybersecurity: Protecting sovereignty and trust in the digital age includes the capability to develop cybersecurity systems and solutions that safeguard critical infrastructures and democratic institutions. Via centres such as the EPFL Centre for Digital Trust (C4DT) and the Zurich Information Security & Privacy Center (ZISC), and in close collaboration with the National Cyber Security Centre (NCSC) and the Federal Department of Defence, Civil Protection and Sport (DDPS), the ETH Domain will bridge cutting-edge academic research with federal needs, strengthening applied cybersecurity research, policy development, national digital resilience and international collaborations. The ETH Domain encourages the development and deployment of open solutions for federal services to foster digital sovereignty.

Digital Literacy and Ethics: With their cutting-edge and pioneering research, expertise and education programmes, the ETH Domain institutions contribute to national digital resilience, including strengthening a sovereign digital Switzerland (e.g. by reducing dependencies, promoting open-source technologies and supporting sovereign IT infrastructures) and the responsible development and use of digital technologies. Entities and initiatives such as the Albert Einstein School of Public Policy at ETH Zurich and the International Computation & AI Network (ICAIN) contribute to national and international dialogues on digital ethics, privacy and democratic control of emerging technologies. Existing close collaborations with authorities and the public administration at both the cantonal and federal levels, particularly with the DDPS, are being further strengthened to enhance Switzerland's resilience, while continuing education programmes support inclusive digital literacy across society. The ETH Domain aims to support decision-makers in times of crisis by leveraging expertise across different clusters, such as cybersecurity and energy. Initiatives to modernise and scale up research IT infrastructure, strengthen digital skills across all academic levels, and foster inter- and transdisciplinary data and systems literacy are supported. These efforts enhance institutional readiness, ensuring that talent and infrastructure keep pace with the rapidly evolving digital landscape.

Closely linked to this Strategic Area is the challenge of increasing demand for resources such as water and energy in the coming decades, driven in part by new applications such as AI. The ETH Domain has a unique opportunity to address this challenge by combining expertise from the Strategic Areas *Energy, Climate and Environmental Sustainability* (p. 26 et sqq.) with capabilities within this Strategic Area, including ETH Zurich's and EPFL's centres for AI, Energy and EcoCloud. Additional synergies arise through collaboration with the Empa Urban Energy Systems Lab and PSI's Laboratory for Energy Systems Analysis, both of which bring long-standing expertise in energy system integration (cf. *Energy*, p. 24 et sqq.).

The Strategic Area *AI and Digital Transformation* aligns with objectives and strategic priorities of the ERI Dispatch, such as strengthening Switzerland's international competitiveness in research and innovation, promoting resilience and agility in the knowledge system, increasing digital sovereignty and proficiency through decentralisation and federation, advancing digital transformation through excellence and responsibility, and ensuring broad access to skills and lifelong learning opportunities. The ETH Domain is ready to develop and implement this agenda in close collaboration with public authorities, industry and civil society – ensuring that technological leadership and democracy advance together.

Emerging Materials and Key Technologies

Context and Rationale

Switzerland faces mounting strategic challenges that threaten not only economic competitiveness but also national security and technological sovereignty; these include dependence on scarce raw materials, vulnerabilities in international supply chains, and rapid technological shifts in areas such as quantum technologies, robotics, space systems and advanced manufacturing. By accelerating research and innovation in these areas, Switzerland can reduce dependence on imports, secure high-value jobs and strengthen the country's innovation power. Investments in shared infrastructure – cleanrooms, high-throughput labs and open data platforms – multiply the impacts across universities, SMEs and wider industry. This Strategic Area focuses on the following key topics for the period 2029–2032: Advanced manufacturing, Space technologies and cyber-physical systems, Quantum technologies & materials, Digital material design workflow & Robotics. *Advanced manufacturing* is crucial for the transfer of new materials and key technologies from laboratory research to practical applications. Following fundamental synthesis and

characterisation, a next step must follow to enable the large-scale manufacturing of new materials and devices by investigating the relevant processing technologies. Data-based monitoring, data analytics and automation are decisive parts of modern manufacturing environments. Strengthening Switzerland's capabilities and expertise in chip development is central to this strategic priority.

Space technologies and cyber-physical systems are becoming essential components of modern infrastructure, enabling secure communication, precise Earth observation, drone operations, autonomous operations and resilient monitoring of critical resources. These are also strategically important for both civilian and defence applications; Switzerland can strengthen its technological sovereignty in these areas, enhance climate and hazard monitoring, and ensure resilient infrastructure – supported by investment in research facilities, interdisciplinary collaboration and skilled talent development.

New electronics & quantum technologies and materials & manufacturing are key enablers of future sensing, communications and computing systems, and could have an impact as profound as AI (see also Strategic Area *AI and Digital Transformation*, pp. 25-26). The goal here is to cover the full value chain from fundamental material discovery and examination of underlying physics, via robust materials/device engineering and characterisation as well as first prototype systems, to quantum algorithms, software and application co-design and to commercial implementation in ETH Domain start-ups and Swiss companies, thereby contributing to a sovereign and globally competitive Swiss manufacturing paradigm.

Digitalisation is a crucial driver for both experimental and theoretical materials research. *Digital Material Design Workflow* is therefore a highly relevant topic within the Strategic Area *Emerging Materials and Key Technologies*. While the NCCR Marvel has paved the way by creating a large toolbox of simulation capabilities in the period 2021–2024, the period 2025–2028 shall be extensively used to extend the toolbox by AI-driven add-ons and by developing complementary high-throughput synthesis and characterisation techniques. In the period 2029–2032, these two approaches shall be brought together in a closed loop, which shall accelerate materials discovery by at least two orders of magnitude.

Robotics bridges AI and the physical world, enabling the transition from industrial automation to the widespread deployment of autonomous systems. As a highly interdisciplinary engineering field, robotics integrates AI and control, sensing and actuation, mechanics and materials, and can generate substantial positive impact – from more sustainable agriculture and construction to aerial and drone-based applications, improved healthcare, future-ready military capabilities, and increased effectiveness across industries. Building on Switzerland's leadership in automation and precision engineering, the ETH Domain wants to focus on large-scale, cross-institutional initiatives to translate world-leading research into start-ups and industry, attract international investment, and strengthen a globally competitive Swiss robotics economy.

Objectives and Contributions of the ETH Domain

The ETH Domain institutions have excellent knowledge across all classes of materials and characterisation methods ranging from lab scale to large-scale infrastructure. They are committed to transferring technology to industry and society while fostering world-class academic science in collaboration with Swiss and international partners.

In the domain of space technologies, the ETH Domain has established new collaborations and partnerships, notably between PSI and the European Space Deep-tech Innovation Centre (ESDI), Empa and the Center for Space and Aviation (CSA), as well as ETH Zurich's Swiss GeoLab and EPFL with Space Innovation. These efforts focus on Earth observation, orbital autonomy, and secure space-based communication infrastructure, with strong linkages to climate resilience, energy system monitoring, and early-warning capabilities for natural hazards and resources – thus connecting to the Strategic Areas *Climate and Environmental Sustainability* and *Energy* (see p. 26 et sqq.).

The resilience and competitiveness of Swiss manufacturing depend on adopting advances in AI, advanced manufacturing and robotics. Priorities include manufacturing for space, circular manufacturing via safe and sustainable by design approaches and autonomous inspection systems. Chips are also central to advanced manufacturing and Switzerland's technological sovereignty. Improvements include expanding facilities and establishing the Swiss Chip Alliance to coordinate national infrastructure. The goal is to develop Switzerland-tailored chip fabrication capabilities, support new technologies for communication, power and space, and enable start-ups as well as larger companies to remain globally competitive. The ETH Domain is uniquely positioned to lead these efforts, leveraging world-class research, interdisciplinary expertise and strong partnerships with industry and the public sector.

The ETH Domain continues to invest in the development of new electronics & quantum technologies and materials & manufacturing. Synthesis and characterisation platforms for new quantum materials are key. The goal is to improve and optimise material synthesis, processing and characterisation at the nanoscale by integrating different experimental platforms and equipment. Building on existing initiatives, joint efforts aim to maintain and expand world-class infrastructure for quantum materials research. The ETH Domain is at the forefront of both established and emerging quantum technologies, with particular strengths in quantum computing and quantum sensing (see also *AI and Digital Transformation*, p. 28 et sqq.). In the field of quantum science and technology, the Swiss Quantum Initiative (SQI), launched in 2023 and funded until the end of the ERI period 2025-2028, constitutes a strategic opportunity for Switzerland. Continued investment in this area will be required in the years to come.

In the area of computational material science, for 2029–2032, the focus is on making simulations more accessible and user-friendly, ensuring robustness and accuracy. Economically, there is an emphasis on enabling useful and quick simulation results on desktop machines to reduce reliance on expensive computing clusters, while still ensuring high performance for demanding applications. In terms of material design workflow, the combination of high-throughput synthesis, high-throughput characterisation and fast, user-friendly simulations into a closed-loop automated system is key for materials discovery. The ETH Domain provides the experimental validation and application depth that AI-driven materials research requires.

A central consideration in developing key materials and technologies is ensuring their circularity. Circular material use in energy systems, buildings and industrial production is essential to reduce pressure on planetary resources while maintaining current standards of living (see also Strategic Areas *Climate and Sustainable Environment* and *Energy*, p. 26 et sqq.). Strengthening circularity also reduces Switzerland's dependence on imported raw materials.

The ETH Domain – through its world-class research infrastructures, interdisciplinary expertise, and active collaborations with the DDPS, armasuisse and other federal authorities – is uniquely positioned to accelerate the development of advanced materials, quantum devices, robotics, sensing technologies and secure space-based systems that are relevant for both civilian and defence applications. Joint investments in shared platforms such as cleanrooms, chip facilities, high-throughput labs, and digital materials design workflows would reinforce Switzerland's technological autonomy, support resilient supply chains and create high-value industrial opportunities. With coordinated action, Switzerland can transform scientific excellence into societal resilience, secure infrastructure and long-term strategic autonomy.

A.2 Transversal Areas

Fundamental Science

Context and Rationale

Fundamental Science is the foundation of scientific and technological progress. It spans all disciplines of the ETH Domain – from the natural, social and management sciences to engineering. Curiosity-driven research and education underlie all the activities of the ETH Domain. Fundamental research allows the institutions of the ETH Domain to create new knowledge, advance scientific understanding, lay the groundwork for tomorrow's innovations and educate the next generation of critical and creative thinkers. Participation in fundamental research is a defining element of education at the ETH Domain institutions, enabling students to develop creativity, critical thinking and scientific independence.

Curiosity-driven research uncovers new knowledge and fundamental processes that generate ideas, methods and insights which may ultimately enable transformative innovations and significant impact. Such breakthroughs are often unpredictable and emerge from open-ended inquiry beyond what can be justified by immediate societal needs. Also, *Fundamental Science* thrives when the most talented researchers are given the freedom and resources to explore bold ideas.

Another essential component of *Fundamental Science* is the education and training of future experts across core scientific disciplines. This ensures that Switzerland sustains the knowledge capacity needed to address complex societal, technological and environmental challenges in the long term.

Thus, investment in fundamental research reinforces Switzerland's long-term innovation and competitiveness. Fundamental discoveries often emerge over long time horizons and cannot be planned according to short policy cycles. Sustained institutional support and stable funding are therefore essential to enable long-term scientific exploration. By supporting excellence in curiosity-driven research and education and allocating a significant proportion of its research funding to fundamental research that is independent of predetermined goals, the ETH Domain ensures that its institutions can continue to contribute world-leading knowledge, cutting-edge technologies and highly trained professionals across all the Strategic Areas. Initiatives such as the newly launched NCCR Genesis, NCCR Precision or NCCR Muoniverse are also key for promoting Fundamental Science in the ETH Domain.

Contributions Across the Strategic Areas

Fundamental Science underlies and overlaps with all the Strategic Areas and is central to their success. Below are illustrative examples of Fundamental Science's contributions to the various Strategic Areas:

Human Health. Prevention, monitoring, diagnosis and therapy all rely on strong foundations in fundamental research. For example, advances in molecular biology, genomics and biomedical data research, including single-cell analysis, gene editing technologies such as CRISPR, and AI-enabled drug discovery, are opening up new ways to understand disease and develop targeted therapies. Another striking example is how fundamental physics research and radiochemistry enabled the development of proton therapy and other, novel forms of precise cancer treatment.

Energy. Advances in materials science, physics, chemistry and engineering are critical for the development of energy technologies and systems. For example, basic studies of novel photovoltaic materials and battery chemistry have led to high-efficiency solar cells and longer-lasting energy storage solutions, while advanced control algorithms allow high shares of renewable electricity production in the grid. Strong education programmes in mathematics, physics, chemistry and engineering equip future leaders in energy research to develop innovative solutions and advance sustainable technologies.

Climate and Environmental Sustainability. Discovery-driven research in earth system science, physics, ecology and chemistry provides the foundation for addressing climate and environmental challenges. For example, fundamental studies of atmosphere, ocean and agro-ecosystem dynamics have improved climate models and informed sustainable forest and water management. Early discoveries in the context of space science also laid the foundation for satellite technologies used in climate monitoring, communication and navigation. Fundamental research on biodiversity and the factors shaping biodiversity in aquatic and other ecosystems can provide fundamental insights that inform technology development and policy approaches. Education and research in the areas of agricultural and environmental systems sciences, ecology and data-driven modelling ensure future specialists can tackle complex sustainability challenges at local, national and global scales.

AI and Digital Transformation. Fundamental research in computer science, mathematics, AI, cybersecurity and quantum computing is at the basis of the digital transformation. Foundational work in machine learning and neural network architectures has made it possible to develop the AI systems used today, which can analyse complex data and recognise patterns. Quantum computing research is likewise rooted in fundamental physics and is expected to drive the next generation of computing and communication technologies. The ETH Domain institutions are also key players in translating fundamental computer science across education programmes to train the next generation of experts.

Emerging Materials and Key Technologies. Curiosity-driven studies in materials physics, chemistry, quantum mechanics and space science underpin the discovery and development of advanced materials and technologies. For example, fundamental discoveries in materials physics and semiconductor science laid the groundwork for modern chip technologies, enabling faster, smaller and more energy-efficient electronics. Education in physics, chemistry, mathematics, engineering and astrophysics equips students to understand matter, energy and complex systems, enabling them to develop advanced technologies such as next-generation chips, sustainable materials and space-based observation systems.

Dialogue with Society

Context and Rationale

Advances in science and technology are essential, but not sufficient, to meet today's complex, interconnected and rapidly evolving environments. Societal and cultural embedding and acceptance, legal and regulatory frameworks, financing, and broad stakeholder coordination and support are also necessary if the ETH Domain is to fulfil its mission. The close interaction of researchers with society includes identifying relevant research questions, placing societal perspectives into research approaches, and disseminating and implementing research results. Multilingualism, as a specific aspect of the Swiss context, also needs to be considered for an effective dialogue with society across all regions of the country.

A proactive, mutual and open dialogue between the scientific community and society provides the basis for guiding scientific inquiry toward urgent societal challenges and for co-developing solutions with relevant stakeholders, and for ensuring that research is informed by practice. It also facilitates the translation of research findings into concrete solutions and strategies, promotes public support for science and research, helps strengthen trust in science and counter misinformation, and inspires the next generation to pursue higher education by highlighting the societal relevance of STEM (including computer sciences) subjects. Openness must be carefully balanced with knowledge security in order to safeguard sensitive scientific and technological knowledge.

While *Dialogue with Society* is an integral part of the ETH Domain's core tasks (see KTT, p. 53 et seq.), it is highlighted here as a Transversal Area to reflect its specific strategic importance and its cross-cutting relevance across all Strategic Areas. Through this Transversal Area the ETH Domain aims to i) strengthen public understanding, interest, engagement and trust in science, ii) contribute to evidence-informed decision making, and iii) build capacity within the ETH Domain for stakeholder inclusion in solution-oriented research. The institutions of the ETH Domain contribute to this Transversal Area through a wide range of activities. Some of them span all the Strategic Areas. These contributions take many forms, including large public-facing events and science festivals that enhance public understanding of science; open days and visitor centres that provide insight into research environments, laboratories and infrastructures; and accessible communication that translates complex topics into formats suitable for broad audiences. The ETH Domain also supports evidence-informed policymaking by providing expertise to federal and cantonal authorities, developing policy briefs and decision-support tools, offering continuing education programmes for the public administration, and creating dedicated spaces for dialogue. The ETH Domain also actively participates in the mechanism defined by the Federal Council to include scientists in crisis management and preparation. Furthermore, the institutions build capacity for stakeholder inclusion in solution-oriented research – for example through cross-institutional training platforms, programmes in science communication, and new educational formats that equip students and researchers with the skills to engage with diverse societal actors. Besides more institutionalised and broad-based activities, many researchers in the six institutions have personal contacts with industry, government and practice, especially through research collaborations, which is equally crucial for achieving the above-mentioned goals. Dedicated support structures and staff, such as those at the Albert Einstein School of Public Policy, also play an important role in enabling and strengthening the engagement of scientists with societal actors.

The role of social sciences in this Transversal Area is key. They support dialogue processes and contribute to independent, curiosity-driven research on societal dynamics. Strengthening social sciences across the ETH Domain would enhance its capacity to engage with society and address complex societal challenges more effectively. Finally, ensuring successful dialogue with society requires appropriate institutional conditions, including recognition, incentives and resources for researchers engaging in such activities (see also p. 53). Incorporating aspects of policy engagement and decision-making processes into

training would also help better prepare researchers, particularly early-career scientists, for interaction with policymakers.

Contributions Across the Strategic Areas

Dialogue with Society is transversal to all Strategic Areas, whose challenges can only be fully answered if scientific communities and the public, industry and public authorities work together to find and apply appropriate solutions. Below are some illustrative examples:

Human Health. Engagement with patients, healthcare providers and policymakers is critical for the development, implementation and acceptance of new medical technologies and treatments. Clear, responsible communication and the management of expectations are essential for maintaining public trust in this area. The ETH Domain institutions also play a prominent role in data monitoring for public health, providing authorities with the information needed for decision-making and action.

Energy. The ETH Domain institutions are recognised partners in informing energy-related decision making. *Dialogue with society* is essential for promoting public acceptance of energy infrastructures, strengthening evidence-informed energy policies, and supporting informed discussions on energy related questions.

Climate and Environmental Sustainability. Effective dialogue enables the co-design of sustainable practices, helps to promote environmental awareness, and ensures that research outputs are societally relevant and actionable. Engagement with policymakers and public authorities can support evidence-informed decision-making and contribute to the development of policies and regulatory frameworks. Knowledge exchange with local communities, practitioners and authorities strengthens coordinated responses to climate risks and biodiversity loss.

AI and Digital Transformation. Digital innovation must not only be excellent but also accountable and inclusive. Initiatives proposed in the Strategic Area *AI and Digital Transformation* aim to contribute to the national and international dialogue on digital ethics, privacy and democratic control of emerging technologies.

Emerging Materials and Key Technologies. The development and deployment of advanced technologies require public trust and a clear understanding of their benefits and risks, and a related societal discussion. Through proactive dialogue and awareness-raising, the ETH Domain supports informed acceptance and encourages the uptake of key technologies by start-ups, industry, the public sector and society at large.

Security, Sovereignty and Resilience

Context and Rationale

In an increasingly complex and uncertain environment, Switzerland needs to anticipate and manage potential challenges, including those related to public health, democratic shifts, climate change, biosecurity, supply-chain vulnerabilities (e.g. energy carrier imports), misinformation or geopolitical tensions. Such challenges can affect not only public safety and economic stability, but also the functioning of critical infrastructures, access to essential resources and services, public trust and social cohesion. To safeguard its long-term stability and prosperity, the country must prepare for emerging risks, manage them effectively, and adapt to changing circumstances. Strengthening *Security, Sovereignty and Resilience* therefore encompasses not only national security and the protection of critical infrastructures, but also areas such as public health, climate change and natural hazards, energy sovereignty and security, digital systems and cybersecurity, as well as the resilience of Swiss society, its institutions and its economy. In this context, education, research, technology development and access to evidence-based knowledge constitute strategic assets for Switzerland.

The ETH Domain can contribute to these efforts by generating knowledge, developing technologies, training highly qualified experts and sharing expertise to help Switzerland address challenges in areas critical for Security, Sovereignty and Resilience. It can also make a valuable contribution by providing research-based guidance to public authorities and decision-makers. In addition, the creation of spin-offs and collaboration with industry is key to building a locally based technological ecosystem that contributes to Switzerland and, more broadly, Europe's technological sovereignty.

In the domain of national defence, the Federal Council approved a new strategy regarding armament policy⁸ in June 2025 in response to the changing security environment and its first Security Policy Strategy in 2026⁹. Both documents place particular emphasis on research, development and innovation, and outline new possibilities for cooperation with Swiss universities, research institutions, start-ups and industry. On this basis, the ETH Domain and the DDPS/armasuisse intensify their collaboration. Funding for these research and innovation activities should be made available through additional resources and remain outside the Confederation's global budget for the ETH Domain. These developments require a critical understanding of the ethical, societal and security-related implications, along with effective risk management. ETH Domain institutions should therefore address the challenges and opportunities of defence-related research and technologies, including their international dimensions.

In line with the growing awareness of unwanted transfer, foreign interference or misuse of sensitive information and technology, an additional very important aspect for the ETH Domain is the management and protection of knowledge security and its coordination at national level. The aim is to safeguard sensitive scientific and technological knowledge while ensuring that the Swiss research and innovation system remains open to the world and that international collaboration and recruitment are not unnecessarily hindered. Finally, with its recognised expertise in digital transformation and cybersecurity, the ETH Domain can support federal authorities in implementing the *National Cybersecurity Strategy*¹⁰.

Contributions Across the Strategic Areas

Below are some examples to illustrate how each Strategic Area contributes to Switzerland's security and sovereignty and strengthens its resilience in dynamic and challenging environments.

⁸ [Federal Council's defence policy strategy \(Rüstungspolitische Strategie des Bundesrates, Stratégie en matière de politique d'armement du Conseil fédéral\)](#)

⁹ [The Security Policy Strategy 2026](#)

¹⁰ [National Cyberstrategy NCS](#)

Human Health. The ETH Domain can support the country in the prevention, detection and response to health-related issues such as pandemics, environmental health risks, and changes in demographics, through research and teaching in areas like life sciences, health technologies, engineering, environmental and agricultural sciences. With their expertise in data-based health and environmental monitoring, the ETH Domain institutions support public health authorities in detecting trends and help predict health risks, thereby contributing to more effective prevention and intervention strategies, for example in case of pandemics.

Energy. The Strategic Area *Energy* also focuses on the security, sovereignty and resilience of the country and society at large, in terms of energy supply, transport and accessibility. Through targeted research and innovation, the ETH Domain institutions advance critical capabilities: expanding domestic energy sources, integrating diverse energy carriers into the grid, developing effective storage solutions, and making the energy system resilient. Their work extends to ensuring long-term nuclear safety while providing decision-makers with essential scenario models, risk analyses, and strategies for diversified, sustainable energy systems.

Climate and Environmental Sustainability. Enhancing adaptive capacity is essential to prepare for climate-related hazards and environmental shocks and stresses. Strengthening the resilience of communities and improving ecosystem management, alongside effective and feasible adaptation to a changing climate, is therefore one of the priorities in the Strategic Area *Climate and Environmental Sustainability*. The ETH Domain institutions develop tools and contribute to strategies for climate-resilient infrastructures, urban planning and ecosystem-based approaches to mitigate and adapt to climate and ecological changes. Research outputs support authorities and communities in designing adaptive responses and increasing resilience.

AI and Digital Transformation. Secure, trustworthy and resilient digital infrastructures underpin national sovereignty and security. ETH Domain research in cybersecurity and quantum-secure communication can support critical digital services, from healthcare to the public administration and industry context, and mitigate risks linked to AI (e.g. voter manipulation). In addition, by training the next generation of experts in computer sciences, advancing digital literacy and fostering responsible digital development and use, the ETH Domain helps ensure that Switzerland retains core domestic expertise and strategic autonomy in digital technologies and strengthens its long-term national resilience.

Emerging Materials and Key Technologies. Rapid technological shifts, reliance on scarce materials and vulnerabilities in global supply chains pose risks to Switzerland's resilience, competitiveness and technological sovereignty. The ETH Domain can leverage its research infrastructures and scientific expertise to advance key technologies such as advanced materials, quantum technologies, sensing systems and space systems. Strengthening collaboration with federal authorities can further accelerate research and technology development in support of national security.

B. Fulfilment of the mandate assigned
to the ETH Domain

B.1 Core Tasks

The ETH Domain institutions perform their manifold tasks in line with the mandate conferred on them by the ETH Act and the strategic objectives of the Federal Council. The core tasks of the ETH Domain include education, research, research infrastructures, and knowledge and technology transfer (KTT).

High-Quality Research-Based Education

The ETH Domain strategically contributes to Switzerland's long-term competitiveness by prioritising high-quality, research-based education and by training highly qualified graduates. ETH Zurich and EPFL, with the support of the research institutes, continue to develop and implement measures to safeguard the quality of education in the long term, taking into account the projected number of students. The institutions of the ETH Domain consider advances in science and engineering, as well as the needs of society and the economy, together with the evolving expectations and motivations of future generations, when they develop their education and continuing education offers. They provide inspiring learning environments that enable students to succeed in their studies and equip them to help actively and responsibly shape the future of Switzerland and of society in general.

Prioritising research-based and high-quality education

Context

The long-term priority of the ETH Domain remains delivering high-quality and research-based education in the exact and natural sciences, engineering sciences (including digital sciences), architecture and management sciences, with links to social sciences and the humanities. In this context, innovative approaches to teaching are continuously being developed by the ETH Domain institutions to maintain education quality and at the same time increase the capacity of study programmes wherever possible. The quality management of teaching has been developed further by the institutions, making full use of digital technologies in the evaluation of courses and examinations, of institutional accreditation procedures and of student surveys. Results flow into curricula development. The emergence of AI is fundamentally reshaping higher education, offering the ETH Domain the opportunity to lead this transformation by leveraging its scientific and technological expertise and its close link between research and teaching.

Although the increasing number of students is in line with the strong demand in Switzerland for professionals in scientific, engineering and technical fields, this growth, combined with ongoing budgetary constraints, poses a risk to the long-term quality of education and impacts all the ETH Domain institutions. In line with the overarching Strategy of the ETH Board regarding the development of student numbers in the ETH Domain, ETH Zurich and EPFL have developed and implemented measures to manage the number of students and to ensure a high quality of education in the long term. The impacts of these measures are carefully observed and inform future decisions.

Given the projected growth in its student population and the resulting challenges to delivering high-quality education, EPFL had, as last resort, to introduce a cap on the number of admissions for foreign-educated foreign students during the period 2025–2028. This measure is being carefully assessed and the results monitored. For the period 2029–2032, ETH Zurich and EPFL estimate that their combined student population will grow by slightly less than 3% per year.

Prerequisites

- The growth of the ETH Domain student population is to a certain extent the result of, and a precondition for, meeting Switzerland's high demand for professionals and experts in STEM (science, technology, engineering and mathematics) fields, including computer sciences. It requires favourable framework conditions, including sufficient financial and human resources and infrastructure. Digital technologies that support scalable innovative teaching and learning concepts also require significant investment.
- Innovation in education includes the use of digital tools, but also more interdisciplinary, hands-on and interactive approaches to teaching, project-based learning, peer teaching and flipped classrooms. This requires more time investment from supervisors as well as flexibility in the use of real estate and workspace. The successful use of these new teaching technologies requires that lecturers receive sufficient training and support. Innovative education also increasingly requires the integration of AI, both as a teaching and learning tool.

Measures 2029–2032

- While developing their curricula, the ETH Domain institutions take into account the aspects of critical thinking, interdisciplinarity and transdisciplinarity, sustainability, ethical principles, Open Science and digitalisation. Scientific, technological and societal trends also play a key role in informing curricula development.
- The ETH Domain institutions are at the forefront of the development of AI-related competencies among students, support the responsible use of AI in teaching and learning, and adapt curricula and teaching approaches to reflect advances in this field.
- The ETH Domain institutions recognise the importance of in-person contact between students and supervisors and promote active learning, interactive teaching and project-based education as valuable assets.
- In order to ensure the long-term quality of education, the ETH Domain institutions continue to evaluate the quality of education and ensure that the indicators and criteria used for this assessment are pertinent and comprehensive.
- ETH Zurich and EPFL continue to develop solutions and implement measures in line with the overarching Strategy of the ETH Board regarding the development of student numbers in the ETH Domain, with the aim of maintaining high-quality education in the long term. They expand infrastructure capacity where possible, allocate sufficient resources to teaching, leverage synergies, and adjust the distribution and diversification of teaching responsibilities across units and staff. An introduction or extension of the cap on student admissions can be considered if capacity limits continue to be reached and if it is necessary to ensure long-term quality, and if all alternative measures have been exhausted.
- PSI, WSL, Empa and Eawag support the ETH Domain's educational mission by providing high-quality and diversified teaching and supervision opportunities. Researchers holding positions both at the research institutes and at ETH Zurich or EPFL are recognised as key contributions to teaching in the ETH Domain and to ensuring adequate student supervision.
- The ETH Domain institutions continue to nurture cooperation with other Swiss higher education institutions, leveraging complementary expertise and synergies to strengthen their education and continuing education offers.
- The ETH Domain institutions promote the international mobility of their students, so that they are exposed to global perspectives. Moreover, the mobility of students is also promoted on a national level, especially between ETH Zurich, EPFL and the research institutes.

Anticipating and meeting the needs of society, the economy and industry

Context

Education delivered by the ETH Domain needs to be aligned with the current and future needs of the labour market in order to have an impact on practice and stakeholders and to fulfil the mandate granted by the ETH Act – i.e. to enable students to become the experts needed by the economy, industry, research and the public sector. The professional prospects for ETH Zurich and EPFL graduates have remained high over the years, reflecting sustained demand in the labour market. However, labour market conditions are evolving rapidly. In this context, it is important to ensure graduates are well prepared for the future.

The ETH Domain institutions promote lifelong learning and, in this way, contribute to the development of society and the economy and to the strengthening of Switzerland's competitiveness. They offer a wide range of practice-oriented continuing education courses, many of them combining technology with management and social sciences. Digital skills and digital transformation, as well as ethics and sustainability, have received special attention in the development of new courses.

Prerequisites

- Fostering dialogue and cooperation between universities, research institutes, industry, policy makers and society helps to efficiently shape offers according to their needs. It also ensures the effective use of existing complementarities and synergies.
- Only by continuing to attract talented students from here and abroad will Switzerland be able to effectively counteract the shortage of skilled employees. Thus, access to international students is necessary to satisfy the expected demand for the specialists needed in technical and engineering fields, as well as in academia. Facilitating the prospective professional integration of these graduates in Switzerland is an important condition for achieving this goal.
- Addressing the challenges of labour market transformation driven by digitalisation, automation and AI requires continuing education programmes that help individuals (including alumni) and industrial partners to acquire the skills needed to thrive in evolving work environments.

Measures 2029–2032

- The ETH Domain institutions develop their education and continuing education programmes while keeping in mind the present and future demands of the economy, industry, research and the public sector. They maintain an active dialogue and engage in collaboration with the private and public sectors in order to anticipate and meet their needs for specialists on the Swiss labour market.
- The integration of practical experience into academic programmes, such as internships and research collaboration with external partners, is supported in order to enhance employability and ensure that education remains aligned with evolving technologies.
- The ETH Domain institutions further develop their offers in continuing education according to their respective thematic areas of activity and with a view to the needs of society and industry. A wide range of unique research-based courses, as well as practice-oriented and applied courses, are offered on topics relevant for the private and public sector. This includes programmes linked to AI and the digital transformation of society.
- The ETH Domain institutions pave the way for lifelong learning by providing continuing education opportunities, especially for their graduates who have entered the workforce, enabling them to update their skills and remain productive in a rapidly evolving economy.

Creating and maintaining inspiring learning conditions

Context

The ETH Domain institutions strive to create a challenging and inspiring academic environment, while supporting students' well-being and mental health. ETH Zurich and EPFL have introduced measures to improve student well-being and assess student satisfaction. In doing so, they respond to societal expectations towards higher education and the evolving needs and motivations of future generations of students. Feedback is actively used to support continuous improvement. In terms of diversity, a particular challenge that remains is the significant under-representation of women in the natural and engineering sciences in Switzerland, a phenomenon that also affects the ETH Domain.

Prerequisites

- Addressing the evolving expectations and motivation of students requires a careful balance between flexibility and well-being on the one hand, and maintaining academic rigour, appropriate workload and the pursuit of excellence on the other.
- Openness and an international environment are central to diversity, creativity and competitiveness and are hence vital for institutions that strive for excellence. In that regard, the ETH Domain must be able to retain the ability to attract the most talented students, staff and researchers from Switzerland and globally. Supporting the mobility of students is also key.
- Access to Swiss universities for all holders of the Swiss Matura is a basic principle for accessible higher education in Switzerland. The high-quality Swiss Matura ensures that prospective students the tools to start their studies under the best possible conditions.

Measures 2029–2032

- The ETH Domain institutions create an inspiring and inclusive culture to attract a diverse range of talented students and provide the conditions enabling them to thrive and excel in their studies.
- The institutions act in the interest of students' well-being and mental health, and foster student self-motivation, flexibility and the pursuit of excellence, while carefully balancing study pace and workload, and taking into account the diversity and evolving expectations of their student population.
- ETH Zurich and EPFL consolidate and improve the outreach activities that have proven to be effective and impactful, aiming to motivate more members of under-represented groups, especially women, to enrol in their Bachelor's and Master's programmes. To that end, they strengthen cooperation with schoolteachers and other stakeholders active in promoting science and education.

World-Class Research

The ETH Domain continues to conduct research at the highest, internationally competitive level, strengthening Switzerland's innovative capacity. The ETH Domain institutions aim to positively impact society through their pioneering research activities, and to contribute to resolving the most pressing local, national and global challenges. They ensure and nurture national and international collaboration and cooperation, taking into account evolving geopolitical contexts. The ETH Domain institutions actively shape and promote good practices in research, including research integrity, knowledge security and Open Science.

Conducting research at the highest, internationally competitive level

Context

The ETH Domain's research is recognised worldwide, with its institutions valued as top research institutions, and contributes to Switzerland's innovative potential and long-term economic competitiveness. Curiosity-driven research remains a central pillar of all ETH Domain activities and is essential for generating new knowledge and as a starting point for innovation. The ETH Domain institutions often carry out research in collaboration with national and international academic partners or with partners from industry and the public sector. Researchers participate in international research projects, which are often funded by international competitive grants. In addition to their research activities, they are active and valued members of the international scientific community and of many research and academic alliances and networks.

In order to respond to some of the most pressing global challenges faced by society, the ETH Domain focuses on specific Strategic Areas where its institutions are well positioned to have a strong impact (see p. 22 et sqq.). Depending on the funding available, the number of professorships is expected to remain stable or increase a little between 2029 and 2032. In that context, the institutions aim to retain the agility to engage in emerging fields of research and internationally relevant topics where their expertise can help position Switzerland globally. They actively recruit top researchers from around the world to support this goal.

Prerequisites

- Access to international networks and international competitive funding such as the European Framework Programmes for Research and Innovation beyond 2027 is essential to ensure the competitiveness of the ETH Domain's research and to attract global talents.
- Long-term professorship planning must be designed to support the strategic development of the ETH Domain institutions, educational needs and the emergence of new fields of research, within the constraints of available resources.
- The overriding importance of fundamental research must be continuously communicated to the public and political authorities, highlighting its essential contribution to the generation of knowledge and to long-term innovation.

Measures 2029–2032

- The ETH Domain institutions provide their researchers with the resources, autonomy and support necessary to pursue high-quality research over the long term and drive innovation. Particular attention is paid to fundamental research as the foundation of all scientific activities and innovation.
- The ETH Domain institutions intensify interdisciplinary and transdisciplinary approaches. Through collaborations, both within Switzerland and internationally, the institutions promote fundamental and applied research, the sharing of infrastructures, expertise and resources. They exploit the complementary profiles of the institutions within the ETH Domain and with other institutions in Switzerland. They encourage the mobility of their researchers and students.
- The institutions, together with the ETH Board, continue to foster strong engagement with international partners, especially in Europe, and to secure opportunities for researchers based in Switzerland to participate in the European Framework Programmes for Research and Innovation.
- To remain at the forefront of science and innovation, ETH Zurich, EPFL and the research institutes remain agile, adapt their research portfolios where relevant and engage in emerging fields of research and education, taking into account the scope of their respective thematic areas of activity.
- The ETH Domain emphasises research activities and ambitious initiatives within the Strategic Areas 2029–2032 selected by the ETH Board, namely “Human Health”, “Energy”, “Climate and Environmental Sustainability”, “AI and Digital Transformation” and “Emerging Materials and Key Technologies”. These Strategic Areas are complemented by the Transversal Areas defined for the same period “Fundamental Science”, “Dialogue with Society” and “Security, Sovereignty and Resilience”.
- The ETH Domain institutions engage in large cross-institutional initiatives, both within the ETH Domain and with external partners, to leverage synergies, complement each other, foster cohesion and strengthen Switzerland’s position in specific areas (such as AI). They also lead and participate in national initiatives, such as the National Centres of Competence in Research (NCCR), National Research Programmes (NRP) or SWISS Energy research for the Energy Transition (SWEET).

Fostering good practices in research**Context**

Academic freedom ensures the right to research, teach, express ideas and communicate facts freely, without undue interference, while upholding academic standards and integrity. Academic freedom goes hand-in-hand with individual and institutional responsibilities and accountability. The freedom and trust granted to science and research by society and legislation calls for researchers to accept and implement the fundamental principles of scientific integrity (i.e. reliability, honesty, respect and accountability). Academic freedom, research integrity and knowledge security are of particular importance in the context of collaborations with international and industrial partners. The ETH Domain institutions adhere to common principles on research integrity and knowledge security and have internal guidelines and dedicated support services in place to support their implementation.

Open Science is also recognised as good practice in research. The ETH Domain has already assumed a leading role in adopting the emerging Open Science and Open Research Data (ORD) practices that allow scientific research outputs – including publications, data and software – to be findable and made accessible whenever possible, as well as interoperable and reusable (FAIR principles).

Prerequisites

- Academic freedom is fundamental to advancing knowledge and innovation by enabling independent and unbiased research free from external influence.
- Trust in science requires active dialogue and transparent communication and involvement of society, encompassing not only research outcomes, but also the underlying processes and potential limitations (see also p. 53). This also entails the responsible use of public funds.
- Research integrity must be supported and practised by the entire research community and is seen as a prerequisite for excellence in research. The institutional environment in which science is carried out plays an important role in ensuring research integrity.
- In particularly sensitive fields, it is essential to implement robust mechanisms to safeguard knowledge and innovation. Research must navigate the issues of security and democratic values. Intellectual property, data security and research with potential security and defence relevance require additional attention.

Measures 2029–2032

- The ETH Domain institutions comply with Swiss and international standards for research integrity and perpetuate their efforts to sustain a research environment designed to promote respect for, and compliance with, research integrity.
- The ETH Domain continues to promote Open Science and to assume a leading role in implementing responsible ORD practices in the Swiss and international research landscape. It aims to ensure continued access to and influence on European Open Science infrastructures.
- The ETH Domain ensures that access to research data, intellectual property and sensitive knowledge is appropriately protected, balancing openness with knowledge security and compliance with legal and institutional standards (“as open as possible, as closed as necessary”). Researchers are provided with adequate training and support to meet these requirements.
- Ethical considerations, including potential societal, environmental and security implications of research and technologies, are integrated into research training and practice, as part of research quality.
- The institutions address the evaluation of researcher performance and research quality in a manner that is fair, transparent and aligned with national and international standards.

State-of-the-Art Research Infrastructures and Platforms

The ETH Domain conceptualises, develops and operates a portfolio of large-scale and middle-scale research infrastructures and platforms that offer unique resources and services for academic research communities and industry users. The ETH Domain's large-scale research infrastructures play a major role in the country's international reputation. The ETH Domain aims to further strengthen this role by strategically fostering investments in areas where its institutions are well positioned to make a significant contribution, and to ensure the long-term relevance of research infrastructures and benefits for Switzerland.

Conceptualisation, development and operation of research infrastructures and platforms

Context

The ETH Domain owns and operates a unique portfolio of research infrastructures and platforms. These offer exceptional opportunities for academia and industry, boost innovation and provide solutions for the advancement of cutting-edge and applied research. The ETH Domain's **large-scale research infrastructures** of national relevance give scientists from Switzerland and abroad access to unique research opportunities and training, foster skills development and promote technology transfer through numerous collaborations with industry. The institutions of the ETH Domain play a leading role internationally with regard to the conceptualisation, development and operation of world-class large-scale research infrastructures. They also ensure their open access for research communities, based on scientific excellence and transparent selection processes. The coordination regarding new or substantial upgrades of large-scale national infrastructures and the contribution to international research infrastructures is part of the Swiss Roadmap for Research Infrastructures process. **Middle-scale research infrastructures and platforms** of interinstitutional importance coordinated by the responsible institutions are complementary to the large-scale research infrastructures and equally contribute to the attractiveness of Switzerland's research and innovation landscape. The ETH Domain portfolio of research infrastructures and platforms strengthens Switzerland's connections to global research networks and helps maintain the country's capacity to respond to scientific and technological challenges over the long term.

Prerequisites

- Stable and reliable funding of the ETH Domain by the Swiss Confederation is essential to allow the ETH Domain to plan, operate and ensure the timely upgrade or the development of new large-scale and middle-scale research infrastructures, which ultimately benefit the entire Swiss higher education and research landscape, as well as industrial partners. Only funding continuity and stability can allow the institutions of the ETH Domain to maintain the high standards required to perform world-class research and to remain competitive internationally in the long term.
- Internationality and academic openness are core prerequisites for the development and operation of the ETH Domain's large-scale research infrastructures. Open access for researchers from around the world must continue to be granted, as it strengthens scientific excellence, promotes exchange of expertise and positions Switzerland as a trusted partner in global research networks. Reciprocally, this international openness enables Swiss researchers to benefit from access to complementary facilities abroad.
- Coordination of large-scale research infrastructures of national relevance is necessary to set the right strategic priorities, exploit synergies and use resources efficiently. On the national level, this coordination takes place through the Swiss Roadmap for Research

Infrastructures process led by SERI, and on the European level through the ESFRI (European Strategy Forum on Research Infrastructures) Roadmap.

Measures 2029–2032

- The ETH Domain continues to allocate adequate resources to the conceptualisation, continuous development and long-term operation of large-scale and middle-scale research infrastructures and platforms of interinstitutional, national and international importance, based on the needs of the scientific community. Long-term, stable funding is ensured through strategic decisions and prioritisation.
- The ETH Domain institutions guarantee the availability of their large-scale research infrastructures to the scientific community based on scientific excellence, and – subject to the charging-on of costs – to industry as well. They ensure that appropriate governance is applied, based on good practice.
- The ETH Board accords strategic priority to large-scale research infrastructures that are submitted to the Swiss Roadmap 2027 process, with a focus on areas of strategic relevance, where the institutions of the ETH Domain are strongly positioned to make significant contributions. Decisions regarding the implementation of these projects are to be taken in 2028, after completion of the scientific review conducted by the Swiss National Science Foundation (SNSF) and the evaluation by the ETH Board of the feasibility and financing scheme, as well as once the budget allocated to the ETH Domain for the period 2029–2032 is known. The possible embedding of large-scale research infrastructures in the future organisational structure of the ETH Domain is also being considered. The infrastructures described in the following section therefore serve as an indication only.
- The ETH Domain institutions contribute to international, especially European, research infrastructures and networks (including contributions to future CERN facilities) with the goal of leveraging possible synergies and strengthening the positions of the ETH Domain and Switzerland as important partners in global research networks.
- In domains where the scale and cost of research infrastructures exceed the capacity of individual institutions or nations, the ETH Domain seeks to establish durable international partnerships and where appropriate public-private funding models to ensure long-term sustainability, shared access and the continued international competitiveness of Switzerland.

Large-scale research infrastructures of strategic relevance submitted to the Swiss Roadmap 2027 process

Two substantial upgrades of existing large-scale research infrastructures and five new projects were prioritised by the ETH Board for submission to the Roadmap 2027 process. This prioritisation takes account of the eligibility criteria defined by SERI for the Swiss Roadmap process as well as guiding principles for the ETH Domain (such as relevance for Switzerland and the ETH Domain, high degree of coordination (more than one institution); embedding in strategy and Strategic Areas, high priority to upgrades of existing research infrastructures).

Substantial upgrades of large-scale research infrastructures

- **HPCN-32:** In a rapidly evolving research landscape, the *Sustained Scientific User Laboratory for AI, Simulation- and Data-based Science* at the CSCS of ETH Zurich has positioned Switzerland as a global leader in high-performance computing. The “Alps” infrastructure upgrade in 2024 enabled a suite of strategic platforms addressing climate science and sustainability, materials research, sensitive data handling and AI foundation models among others. Planned investments through the HPCN-32 initiative during the 2029–2032 period aim at sustaining the computing capabilities and engineering investments necessary to maintain crucial expertise in Switzerland.

HPCN-32 International: To complement the national investments and efforts, it is important to invest in international consortia of high-performance computing and AI to ensure long-term international competitiveness. Scenarios are currently being developed for possible future international embedding of HPC capabilities, in order to ensure access to large-scale computing resources for AI research beyond national capacities. Such an extension requires partnerships and appropriate funding models and specific additional resources.

- **SwissFELplus:** The project proposes a holistic upgrade of the SwissFEL facility at PSI. The planned upgrades of the accelerator and experimental infrastructure of SwissFEL aim at overcoming current bottlenecks in the rapidly developing X-ray free-electron laser (XFEL) technologies and bring immediate enhancements and new scientific capabilities to the existing Aramis and Athos undulator lines. The upgraded SwissFELplus facility would enable novel and enhance existing science, such as the study of ultrafast molecular transformations in biology and chemistry, dynamical processes in materials science and the characterisation of underlying nonlinear light-matter interactions in advanced manufacturing processes. The higher X-ray energies combined with reduced radiation damage due to even shorter pulses will further increase the capabilities for structural biology applications.

New large-scale research infrastructures

- **BedrettoLab:** This facility of ETH Zurich, located in Ticino, is used by more than 20 research institutions and industry partners from Switzerland and around the world. It allows unique in-situ experiments in fractured, crystalline rock with over a kilometre overburden, making it a state-of-the-art underground facility for geoscience research worldwide. The new frontiers of the BedrettoLab engage in two fronts of critical societal relevance: earthquake predictability and hazard reduction, and the extraction of deep geothermal energy. To tackle these new fronts, it is proposed to expand the BedrettoLab into a new spatial dimension, assessing the volume deeper beneath the current tunnel to build a truly unique observation system by creating the Deep Bedretto testbed.
- **Swiss Infrastructure for Autonomous Synthesis (SIAS):** In the contemporary digital revolution in chemistry and materials science, the capacity to navigate chemical space and to produce high-quality datasets is paramount and extremely costly. Capitalising on the success of the automated data-driven infrastructure Swiss Cat+ of ETH Zurich and EPFL, the creation of SIAS in order to produce new materials and therapeutic molecules is proposed. The infrastructure, a collaboration of EPFL and ETH Zurich with PSI and Empa, aims to develop practical and scalable solutions to the most pertinent challenges,

consisting of piloting and scheduling complex automated and interconnected scientific equipment, fully integrating next-generation AI algorithms and robotics, and systematically aligning the overall architecture with the good practices in terms of data stewardship and data sciences.

- **Watershed-scale integrAted observaTories for sustainable water management (WATER):** Climate change, population growth and urbanisation result in the occurrence of water-related emergencies at an increasing frequency in Switzerland (and around the world). There is a crucial need for the concerted integration of natural sciences, social sciences and engineering to achieve progress towards adaptive and sustainable water resources management. This integration can be accelerated through the establishment of watershed (or catchment) observatories that capture the geographic, morphological and land-use diversity of the Swiss landscape, and of a data infrastructure to disseminate the data collected. EPFL, in collaboration with Eawag, Empa, ETH Zurich and WSL, as well as other Swiss higher-education and research institutions, propose to create the “Watershed-scale integrAted observaTories for sustainable water management” to equip three catchments with digital infrastructure and Sustainability Robotics platforms (one each in Jura, Valais and Zurich) to serve as hubs of activity where researchers, policymakers and stakeholders converge to generate the necessary datasets to build predictive water quality and quantity algorithms and to generate fundamental understanding of the impact of climate change on water quality (particularly groundwater).
- **Swiss Quantum Computing Facility (SwissQCF):** The SwissQCF aims to serve as the focal point for quantum computing research in Switzerland, with the goal of establishing a world-class user facility that serves primarily Swiss-based researchers and companies. Such a facility would bring together the science and engineering capacity of PSI with the state-of-the-art quantum computing expertise within ETH Zurich and EPFL. With EPFL leading the design of a virtual cloud platform during the preparation phase, the SwissQCF can – even during its construction phase – provide an immediate competitive advantage in terms of innovation as well as a unique framework for the education and training of quantum scientists and engineers in all Swiss universities.
- **Wastewater Monitoring Laboratory (WML):** Wastewater-based epidemiology offers an unbiased, consistent and cost-efficient method for monitoring the health of the Swiss population. Driven by the collaborative efforts of a large consortium of researchers across the ETH Domain and Switzerland with funding by the Federal Office of Public Health and the Swiss National Science Foundation, Switzerland has emerged as a global leader in the innovation and application of wastewater analyses. The data derived can help to identify the dynamics of respiratory pathogens, antibiotic resistance, pharmaceuticals and illicit drugs, providing novel insights into Swiss health at population-scale. Rapid advances in wastewater analyses offer opportunities to protect Swiss health. The WML at Eawag is proposed for centralising and coordinating wastewater-based activities in Switzerland through targeted investments in infrastructure and personnel support.

Impactful Knowledge and Technology Transfer

The ETH Domain institutions actively contribute to Switzerland's innovation capacity by accelerating the uptake of research results into technologies, practice and policy-making, and collaborate with industry and public partners to that end. They ensure that their students acquire the skills required to become important actors of knowledge and know-how transfer between academia and society, and foster entrepreneurship among their members. Dialogue with society continues to be central to knowledge and technology transfer activities and a key aspect for achieving a positive and broader societal impact.

Significantly contributing to Switzerland's innovative capacity

Context

Knowledge and technology transfer (KTT) serves the core educational and research tasks of the ETH Domain institutions by ensuring that the scientific results, know-how, software and technologies translate into societal and economic benefits and inform policy and practice. Discoveries and technological developments contribute to public goods and the Swiss economy when they find their way into industrial applications, start-ups and policy-relevant solutions. In addition, the KTT activities of the ETH Domain strengthen Switzerland's innovative capacity and global competitiveness. The institutions actively collaborate with industry, as well as public partners, on research and innovation projects with that aim, leveraging synergies, complementarities and specialised expertise. Technology transfer is particularly strengthened through long-lasting collaborations between ETH Domain research institutes and Swiss industry, a large majority of which involve small and medium-sized enterprises. These partnerships foster innovations that lead to new intellectual property and global market advantages, thereby enhancing value creation within an innovative Switzerland. Although commercial and financial aspects are part of their KTT strategy, the ETH Domain institutions aim, above all, at maximising the societal impact and benefit of their research.

Prerequisites

- Enabling environments, notably the innovation parks of Switzerland Innovation, are essential for KTT activities.
- The ETH Domain depends on favourable framework conditions that allow for straightforward interactions with stakeholders from the private and public sectors. While partnering with industry or public partners, the ETH Domain institutions need to maintain their institutional autonomy and ensure the academic freedom of their researchers, for example in terms of decisions regarding personnel, areas of research or publications.
- In order to contribute to Switzerland's competitive position globally through innovation, the institutions need to ensure that their activities also meet the needs of the industrial sector.

Measures 2029–2032

- The ETH Domain institutions consolidate and further strengthen their existing KTT activities, as well as their collaborations with industry and the public sector, improving existing offers and creating new ones where needed. They strengthen mutual exchange and learning with that aim.

- The ETH Domain institutions continue to play a key role in the innovation parks of Switzerland Innovation, as well as in the AM-TTC (Advanced Manufacturing Technology Transfer Centers), by contributing to their development and operation, and aiming at their success and impact within Switzerland.

Fostering innovation and knowledge transfer through people

Context

The ETH Domain's highly qualified graduates make one of the biggest contributions to the transfer of knowledge and know-how to Swiss society when they take on professional activities in the private or public sector. Students are empowered and equipped with the skills necessary not only to contribute effectively to the workforce but also to act as active and engaged citizens.

The ETH Domain institutions offer various instruments and programmes to identify, promote and develop responsible entrepreneurial aptitudes within their students and employees, and to encourage the creation and successful development of spin-offs. For example, the institutions assist spin-offs in searching for seed or venture funds, they operate business incubators and accelerators to support these in early-stage development, and they help students and employees to participate in national and international networks.

Prerequisites

- The development of the various instruments and programmes to support students and employees in KTT activities requires substantial resources and thus adequate basic and competitive public funding. This is also true for bridging fundamental research to applied solutions and innovation, and for funding the first steps from innovation to application.
- The alignment between education offers and expertise needed by the private and the public sector is important in order to have an impact on practice and stakeholders.

Measures 2029–2032

- The ETH Domain institutions prioritise high-quality education and continuing education as key elements in transferring knowledge and know-how through people to society and industry.
- The ETH Domain institutions continue to actively encourage their students and employees to establish early contacts with industry, public administration and non-governmental organisations. They also nurture networks of alumni who are professionally active in the private and public sectors.
- KTT across the institutions is supported through collaborations, overarching projects and synergies among the ETH Domain institutions and with external partners.
- The institutions continue to offer instruments, programmes, structures and incentives that have proven to be effective to strengthen entrepreneurship, to stimulate inventions and business ideas, to foster spin-offs creation and to bring intellectual property to market. The institutions especially target under-represented groups, including women, when developing these activities and support tools.
- The ETH Domain institutions continue to raise awareness among their students and employees of the socio-economic value of research results and intellectual property (IP). KTT activities are regarded as important elements of excellence; they are both encouraged and expected of researchers to support the institutions' core missions of education and research.

- The ETH Domain institutions develop and implement institutional IP and licensing strategies and define clear framework conditions for industry collaborations. They exchange information on good practices and ensure early, transparent communication of mutual expectations with companies and potential founders.

Strengthening dialogue with society

Context

Advances in science and technology are essential, but not sufficient, to meet today's complex, interconnected and rapidly evolving challenges. Successful implementation of scientific and technological advances, and public trust, depend on societal and cultural embedding, acceptance, supportive legal and regulatory frameworks, and broad stakeholder coordination. To achieve these aims, the institutions of the ETH Domain promote a proactive, mutual and open dialogue between the scientific community and society and raise awareness of the value and importance of research findings and technological innovations, while being inspired by societal discussions. These activities are supported by professional communication specialists and involve close collaboration with relevant stakeholders. The institutions of the ETH Domain encourage the uptake of new technologies by start-ups, established enterprises and the public sector, improve acceptance by the public and support the development of adequate policies. They promote fact-based communication and aim to make science more understandable, accessible and participatory. Dialogue with society is highlighted through a dedicated Transversal Area to reflect its strategic importance and its cross-cutting relevance especially across all Strategic Areas (see p. 35 et seq.).

Prerequisites

- Effective engagement with society requires integrating perspectives from the natural sciences, engineering, social sciences and humanities to address complex societal challenges. The social sciences and humanities are key to assessing the societal context, promoting knowledge and technology transfer by understanding relevant societal mechanisms, and fostering the acceptance of research results in society.
- Researchers and students need to acquire the skills and resources to communicate scientific knowledge clearly and effectively to diverse audiences, and to work jointly with a diversity of stakeholders. Adequate training, recognition, incentives and dedicated resources for researchers engaging in these efforts are key.

Measures 2029–2032

- The ETH Domain institutions aim at strengthening public understanding, interest, engagement and trust in science by making public engagement more accessible to diverse and underrepresented audiences.
- They encourage their members to share their expertise and knowledge by consulting and participating in advisory and scientific boards, as well as serving on national task forces and engaging with the public through media presence.
- The ETH Domain institutions actively collaborate with national and international governmental and non-governmental institutions, including those that are active in the humanitarian, environmental and sustainable development sectors.

- The ETH Domain institutions support their researchers in their outreach activities and dialogue with society, by offering relevant training and providing recognition and incentives for researchers for these efforts.
- The ETH Domain institutions exchange information with each other about their activities linked to the dialogue with society and collaborate where appropriate, with the goal of mutual learning about good practices and success factors.
- The ETH Domain strengthens scientific integrity and societal resilience by promoting critical thinking and counteracting misinformation and continues to actively contribute to evidence-informed decision making.
- They continue to meet their responsibility for delivering high-quality services in the context of the “tasks assigned to the ETH Domain by the Federal Council”.
- They continue to implement outreach activities to inspire pupils to explore and pursue STEM subjects and computer sciences, with a particular focus on girls’ participation.

B.2 Key Resources & Assets

In addition to its core tasks the ETH Domain is responsible for further key resources and assets that support all the other activities, such as providing attractive careers and a respectful work culture, responsible real estate management, and strategic and forward-looking financial management.

Attractive Careers and Respectful Work Culture

The ETH Domain institutions strive to attract and retain talented and dedicated employees and to enable them to play a key role in the institutions' development and success. They provide an inspiring, inclusive and respectful environment for all their employees and students and recognise openness and diversity as key to excellence and creativity in education, research and all other activities. They encourage employees to embrace new forms of work and technological developments. The ETH Domain institutions continue their efforts to increase the proportion of women among their members, particularly in professorial and other leadership positions.

Context

The ETH Domain is committed to excellence in all areas. This commitment extends to its ability to continuously improve working conditions and training opportunities for all employees across academic, technical and administrative roles, including apprentices. In order to remain attractive to talented and dedicated staff, the ETH Domain institutions provide supportive and respectful working conditions and a professional environment that fosters engagement and fulfilment. They strive to attract and retain outstanding talent from around the world and encourage academic careers. They have introduced measures to support scientific staff, aiming to enhance both professional satisfaction and career prospects, within and beyond academia.

The institutions of the ETH Domain provide a dynamic, open and inclusive environment where members of the community can thrive, grow professionally and expand their knowledge and skills. In a context of rapid technological developments, in particular advances in AI, which are transforming research, teaching and administrative work, the impact on working practices, skill requirements and organisational processes will be profound and require proactive support and adaptation. The institutions of the ETH Domain recognise that dialogue, transparency, mutual respect and trust are core elements of attractive working conditions. To support these principles, they have introduced measures that strengthen professional support structures, leadership capabilities and institutional responsibility. Leadership development programmes for professors and supervisors at all levels have been implemented with the goal of improving working and learning conditions and to actively shape and foster a respectful culture through exemplary leadership. Professional support structures ensure that the mission of the contact points is clear to advisors and individuals seeking advice, and that processes are goal-oriented. Advisors are professionally supervised and receive continuous training. Targeted prevention campaigns, training programmes and institutional processes are used to raise awareness of psychosocial risks and to prevent and sanction misconduct.

The promotion of gender equality and the increase in the proportion of women in education and research, as well as in leadership, management positions and in decision-making bodies, remain important goals for the ETH Domain.

Prerequisites

- An inspiring and international work environment plays a major role in attracting talent, as well as in training students for the global workplace. Talented doctoral students and postdoctoral researchers should have the opportunity to work and live in Switzerland after completing their education, allowing them to contribute to Switzerland's society and economy in the long term.
- Leadership commitment, clear policies and procedures, accessible support structures and awareness initiatives are essential for creating and maintaining a respectful working environment. Employees and students must also be empowered and protected to stand up against and report inappropriate behaviour.
- Ensuring equal opportunities, appropriate gender representation, diversity and inclusion requires strong commitment at all levels, supported by effective institutional strategies and action plans.
- Flexibility regarding work location, hours and collaboration methods should be recognised as key factors for creating attractive working conditions but depend on role-specific constraints. Flexible working arrangements must be compatible with family and other life domain-friendly policies. Support and development should be provided to employees at all levels from hiring through to retirement.

Measures 2029–2032

- The ETH Domain institutions continue to offer an inspiring, dynamic, open, diverse and inclusive learning, research and work environment, which allows their members to positively contribute to the institutions' development and success.
- The ETH Domain institutions encourage their employees to embrace new forms of work, technological advances, and digitalisation to continuously develop their skills. They especially promote the responsible use of AI across research, teaching and administration, and provide proactive support and education for the development of corresponding skills at all levels.
- The ETH Domain institutions evaluate and develop measures to support their employees, particularly doctoral students, postdoctoral researchers and senior scientists, in pursuing attractive careers and building sustainable long-term professional perspectives in research, industry, public administration and non-governmental organisations. Special attention is given to changing societal needs by fostering a culture of active learning, self-motivation, continuing education and personal development.
- The ETH Domain develops further its Strategy for Diversity, Equality and Inclusion 2025–2028 for the period 2029–2032.
- The ETH Domain institutions continuously develop and diversify measures to increase the proportion of women in education and research, as well as in leadership, management positions and in decision-making bodies. They also aim for an appropriate gender representation in administrative and technical positions.
- The ETH Domain institutions uphold and ensure equality of opportunities in recruitment and promotion processes, encourage the academic careers of women and other under-represented groups, and support their professional development. They adopt effective measures to proactively mitigate stereotypes and biases and consider evaluation criteria beyond traditional academic metrics.
- The ETH Domain institutions support the recruitment and retention of people with disabilities, ensure their inclusion through dedicated measures, combat stigmas, enable barrier-free working and prevent all forms of discrimination.

- The ETH Domain institutions recognise vocational education and training as a key asset of Switzerland's dual education system and are involved in training apprentices for careers in scientific, technical and administrative fields.
- The ETH Domain institutions ensure that working and studying conditions preserve their members' health and psychological well-being.

Real Estate Management

The ETH Domain maintains and develops its real estate portfolio in order to offer the best conditions for education, research and innovation. The institutions anticipate and plan future infrastructure demands over the long term, taking into account new forms of work and education needs and formats, as well as the projected number of students. Efforts focus on the functionality (including accessibility), cost-effectiveness and sustainability of existing and new buildings, and on maintaining their value and function. The ETH Domain aims to act as a role model in terms of sustainability, with a complete fulfilment of objectives depending on the availability of the necessary resources.

Enabling excellence in research, education and innovation through real estate

Context

The ETH Domain institutions utilise an extensive real estate portfolio owned by the Swiss Confederation, which also includes research infrastructures (see chapter IV.B.1, p. 47 et sqq.). The quality of the ETH Domain's real estate enables excellent research and education, fosters innovation, and supports optimal working conditions. Thus, it contributes significantly to the attractiveness of the institutions and strengthens Switzerland's international competitiveness in education and research. Sites with multiple buildings at a single location can provide good conditions for ensuring appropriate quality in the built environment and encouraging sustainable practices that take society, the environment and the economy into account while fulfilling the mandated tasks.

The growth in student numbers, combined with new approaches to innovative teaching and learning, is not only generating demand for additional space and infrastructure but also a need for flexibility in real estate planning and the use of work and study spaces. Meeting the increasing demand for capacity will be challenging due to the restricted availability of spatial and financial resources. As construction and maintenance costs are deducted from the financial contribution to the institutions it is important that the financial requirements for real estate do not disproportionately affect the resources available for the ETH Domain's core tasks.

Due to the age of the buildings, a larger part of the portfolio is entering a phase of renewal, and several large-scale cyclical maintenance measures are required in order to preserve the good condition of the buildings.

Prerequisites

- The management of the real estate portfolio must be geared to a long-term vision and matched to the specific needs and core tasks of the ETH Domain. Chosen sites must be easily accessible and permit the development of clusters in conjunction with education, research and KTT partners.
- Most construction projects are long-term schemes with commitments that generally extend well beyond a four-year timeframe. Maintaining and developing the real estate portfolio must be properly safeguarded with long-term viable financial measures and stable federal funding.
- Goal-oriented steering of the real estate portfolio can be enabled through reliable data and transparent reporting, ensuring optimal spatial conditions for the core tasks in the long term. Measures build on existing good practices, transforming established norms if needed.
- Strategic oversight and coordination of the different sites are important to fully leverage the opportunities they offer, both nationally and internationally.

Measures 2029–2032

- When managing the ETH Domain real estate portfolio, the ETH Board and the institutions ensure that its development remains affordable within the framework of the federal funding. They conduct prudent resource planning, coordinated with education, research and KTT needs. This includes adopting innovative approaches, such as developing and rolling out new workplace and learning-place concepts, as well as shared facilities to improve the use of space. Management of the real estate portfolio is monitored against comparable benchmarks and supported by transparent real estate accounting.
- The ETH Domain institutions use real-world test environments, including Living Lab approaches, and implement management and operational innovations to foster continuous improvement.
- The ETH Domain is increasingly considering integrated project delivery approaches, involving all stakeholders through all phases of design and construction, with the aim of enhancing efficiency, sustainability and predictability in the execution of construction projects.
- Across the ETH Domain, real estate management processes are continuously improved to increase efficiency by sharing knowledge and expertise between the institutions and federal construction and properties services – particularly the Federal Office for Buildings and Logistics – and by leveraging synergies.
- The ETH Domain supports the creation of affordable student housing by non-profit organisations.
- The ETH Board ensures that legal mandates are carried out, including maintaining the value and functionality of the buildings, and thus prioritises major maintenance to ensure the usability of the building portfolio and prevent consequential damage.

Fostering sustainability across real estate, operations and institutional practices

Context

The ETH Domain aims to foster sustainability across all its activities, from research and education to real estate and operations. The ETH Domain institutions seek to practise sustainability in their everyday activities, reduce their resource consumption and act as a Living Lab for sustainable buildings and energy systems. However, given the specific energy-intensive nature of research and of research infrastructures, the ETH Domain as a whole is a major consumer of energy. Coupled with budget restrictions, the targets set by the Federal Council in its Energy Strategy 2050¹¹, the Net-Zero Goal 2040 formulated in the Climate and Innovation Act (KIG)¹², and the Federal Administration Climate Package¹³ present major challenges for the ETH Domain.

Prerequisites

- Sustainability requires coordinated action across multiple domains, including real estate, operations, energy management, mobility and daily practices. Measures should build on existing good practices, established norms and monitoring.
- Implementing organisational and infrastructural measures needed to reduce CO₂ emissions are cost intensive. The fulfilment of these objectives depends strongly on the budget provided by the Swiss Confederation.

Measures 2029–2032

- The ETH Domain continues to implement organisational and infrastructural measures in order to act as a role model in all areas of sustainability. Among other things, this includes the rollout of photovoltaic installations. To this end, the ETH Domain systematically reduces and offsets its CO₂ emissions induced by building operations and invests in further improving energy efficiency while increasing the production and utilisation of alternative energies. In addition, removing excess emissions, as well as measures to mitigate global heating and contribute to climate adaptation, are being evaluated.
- The ETH Domain institutions act as pioneers in implementing innovative solutions in real estate by translating their own research into practice (for example circular use of building materials, timber construction).
- Carbon-free operation of the institutions is regarded as an overall vision and also includes business travel and other areas of operation.
- The ETH Domain is prepared to implement special measures and government programmes in the areas of energy and the environment, provided that the necessary additional funding is made available by the Swiss Confederation as the contracting authority and owner.
- The ETH Domain institutions are committed to embedding sustainability into operations and encouraging initiatives on campus aimed at reducing environmental impacts, while integrating social aspects to improve community well-being.

¹¹ [Energy Strategy 2050](#)

¹² Federal Act on Climate Protection Goals, Innovation and Strengthening Energy Security ([SR 814.310](#))

¹³ [Federal Administration Climate Package \(available in German and French only\)](#)

Strategic and Forward-Looking Financial Management

The ETH Domain institutions require a solid financial base and are committed to strategic, responsible and forward-looking financial management that safeguards long-term stability. Federal funding remains the backbone of financing the ETH Domain and ensures planning security. It is balanced with complementary resources while pursuing a selective and targeted funding diversification strategy and focused reserves management. When allocating federal funds, the ETH Board considers each institution's tasks, strategic requirements and performance. In view of the intensifying competition for public funds and limited resources, the ETH Board, together with the institutions, takes well-founded strategic decisions regarding prioritisation and posteriorisation, and aims to enhance effectiveness and cost efficiency in all activities.

Context

Academic systems require a robust financial foundation to achieve their objectives, which are mostly long-term in nature. Sufficient financial resources are an important prerequisite for strengthening the national research landscape and ensuring that the ETH Domain institutions remain at the forefront of global, technology-driven competition (see Enabling Factors, p. 14). The federal government contributes the majority of the ETH Domain funding. This federal funding provides a reliable basis that ensures strategic room for manoeuvre and freedom in education and research.

Diversifying funding sources is both a strategic necessity and a challenge. Third-party income is an important complementary funding mechanism for the institutions of the ETH Domain. While long-term investment in strategically important assets, such as professorships, real estate and research infrastructures, is mostly covered by federal funding, third-party funding is often used to support strategic projects and create momentum in teaching and research, for example for opening up new research fields, or for supporting new professorships or co-funding infrastructure projects. It also provides opportunities to strengthen collaborations with academic, public and private partners. Third-party funding comes from a variety of sources, including grants from the Swiss National Science Foundation (SNSF) and European Union programmes, industry collaborations, and donations. However, competitive research grants often do not fully cover indirect project costs, leaving these to be co-financed through the already strained federal contribution. The potential to increase third-party funding is thus limited. Also, where third-party financing is concerned, especially for donations, it is important to safeguard the strategic conformity of research projects, as well as academic freedom. In general, it is also vital to manage follow-up costs and to keep in mind the unpredictable fluctuations in third-party funding income.

By maintaining adequate financial reserves, the institutions remain sufficiently agile to quickly seize opportunities, (pre-)finance innovative project ideas, infrastructures and the construction or renovation of buildings, cover damages from non-insurable risks and remain flexible and agile in times of uncertainty or unexpected events. The ETH Domain and its institutions therefore have well-defined rules for the efficient and effective management of financial resources, such as financial directives and implementation measures that follow best practice. This applies equally to the active management of financial reserves, which are used for teaching and research in a timely manner, in line with strategy and the objectives set by the Federal Council.

Accounting and, to a certain extent, financial management in the ETH Domain is based on the International Public Sector Accounting Standards (IPSAS). The IPSAS Competence Center ensures that new standards are adopted in accordance with requirements and that employees are properly trained in their application. Coupled with a full financial statement audit, this ensures high-quality, transparent reporting in accordance with a widely respected

framework. The internal control system (ICS) minimises financial risks in the institutions and ensures compliance with the relevant legal and regulatory requirements. Moreover, all institutions have a risk management system in place and develop a compliance management system.

Prerequisites

- To adequately support developments in education, research and infrastructure, the ETH Board and the institutions of the ETH Domain need planning security. Only long-term, stable and predictable funding can achieve this. At the same time, financial flexibility is needed so that a swift response can be made to emerging opportunities and challenges. In this context, targeted diversification of income sources and responsible, economical handling of the entrusted financial resources are of central importance to strengthen resilience and ensure alignment with strategic priorities. As competition for public funds is expected to intensify due to economic, demographic, technological and geopolitical developments, the need for strategically driven prioritisation and posteriorisation will increase. Equally important is the effective and efficient use of these resources to maximise their impact on education, research and innovation.
- Financial management is bound up with the requests of the federal government, which expects the ETH Domain to expand its financial base, to use its financial resources efficiently and in accordance with the defined strategy, and to further reduce financial reserves beyond the year 2028 (as defined in the strategic objectives of the Federal Council for the ETH Domain 2025–2028).
- The ability to build and use reserves is necessary for retaining the flexibility to seize strategic opportunities and for risk coverage, while also helping to foster entrepreneurial action.
- Strong governance structures and sound decision-making principles are prerequisites for aligning financial strategies with academic objectives. This enables the ETH Board to guide the ETH Domain responsibly and with foresight while maintaining accountability toward the federal government and stakeholders.

Measures 2029–2032

- The ETH Board and the institutions of the ETH Domain exercise responsible, forward-looking financial management to secure adequate funds for financing the necessary development of education and research capacities and for targeted investments in the maintenance and further development of infrastructure. Well-founded strategic decisions on prioritisation and posteriorisation ensure that resources are deployed where they create the most beneficial long-term value.
- The institutions of the ETH Domain identify opportunities for coordination and synergies, as well as for standardising and simplifying administrative processes, with the aim of improving effectiveness and achieving long-term cost efficiency, without compromising on quality, good working conditions or sustainable performance.
- The ETH Board and the institutions of the ETH Domain ensure that all funds are used efficiently, appropriately and in accordance with the established directives and regulations. They promote transparency and accountability across all levels and systematically align resource allocation with strategic objectives.
- The institutions of the ETH Domain continue to provide the framework conditions for the financial reserves to be used strategically on an ongoing basis. Reserves are used both to support institutional priorities and to cover non-insurable risks.

- The ETH Domain institutions actively exploit synergies in administration, education and research. They engage in the exchange of expertise and the shared use of facilities wherever possible, thereby reducing costs, increasing efficiency and strengthening joint value creation across the ETH Domain, without compromising on fairly regulated access to these facilities and the quality of research and teaching.

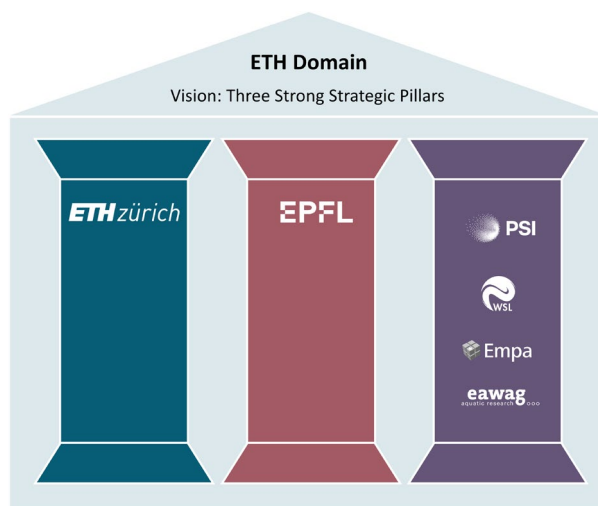
C. Organisational Development of the ETH Domain

FIT for the Future

Context

The ETH Domain plays a key role in serving society, industry and public authorities through high-quality education, world-class research and the practical application of scientific knowledge. Its institutions address pressing national and global challenges by conducting pioneering fundamental and applied research, particularly in strategic areas of societal relevance. ETH Zurich and EPFL lead Switzerland's educational landscape as premier universities of science and technology, while the research institutes focus on mission-driven research and knowledge transfer. Together, they operate in a complementary manner to best serve Switzerland.

To respond effectively to emerging challenges such as climate change, energy, AI and cybersecurity, the ETH Domain must evolve its organisational structure to enhance agility, cooperation and resilience. Launched in summer 2022, the “FIT for the Future” project progressed through various stages, such as establishing a situation analysis and conducting a targeted portfolio analysis. The central aim of this project is to reinforce the mission-oriented approach by aligning the research institutes into a third strong strategic pillar, complementing ETH Zurich and EPFL. This structure is intended to improve joint strategic developments, among other goals.



Project progress and next steps

At the beginning of 2024, the ETH Board and the institutions of the ETH Domain jointly agreed on objectives for a future-proof organisation and structure of the ETH Domain. On this basis, they developed two model variants for the implementation of these objectives. In both model variants, the research institutes acquire a new collective image under one roof, retaining their names, logos/brands and locations. The two model variants of this organisational structure were developed in 2025 and went through an internal consultation within the ETH Domain in 2026. At the time of publication of the Strategic Plan 2029–2032 of the ETH Board for the ETH Domain, no final decision had been taken regarding the chosen variant. The latest information on the project's development and related decisions is available on the ETH Board website: ethrat.ch/en/eth-domain/fit-for-the-future

V. Financial Requirements

The ability of the ETH Domain to sustain and further develop excellence in education, research and innovation depends strongly on the federal funding and, more broadly, on the ERI landscape funding. **A solid and stable contribution from the Swiss Confederation is essential** for allowing the ETH Domain institutions to address emerging challenges, seize new opportunities and fulfil their mandate. Only then can the ETH Domain maintain international competitiveness and continue to serve Switzerland effectively. The Strategic Plan 2029–2032 of the ETH Board for the ETH Domain is based on a +1% budget growth in real terms.

With this limited growing budget, the ETH Domain institutions would be able to launch or participate in new strategic initiatives in key areas such as AI, semiconductors, health, climate, energy or sustainability, in a timely manner, and without compromising other activities and objectives. This would also strengthen their ability to attract and recruit top talent in emerging fields, beyond what is possible through normal retirement and turnover of staff and professors. With a growing budget the ETH Domain institutions would be able to increase the number of scientific staff and professors and ensure the development of key infrastructure for research and education. Finally, the ETH Domain institutions would be able to better fulfil the federal objectives in terms of CO₂ reduction.

In a **financial situation with no real budget growth**, the ETH Domain would face constraints and operate under tension, but would strive to fulfil its core mission, provided that, at a minimum, inflation and salary adjustments were compensated. The ETH Domain institutions would prioritise their core tasks, and especially education and research. However, if such a situation were to persist, structural pressure would continue to increase, making it more difficult over time to maintain current levels of quality.

Should the financial framework become more constrained and the contribution of the Swiss Confederation decrease in real terms, the ETH Domain institutions would increasingly need to arbitrate between the maintenance of staff, the launch or continuation of strategic initiatives, and the preservation and development of infrastructure, with direct implications for their capacity to sustain excellence in education and research in the long term. The institutions would not be able to fully deliver on their mission, including training the qualified engineers needed in Switzerland or providing the services expected from them (such as policy support or health, climate and energy monitoring). Available resources would be largely concentrated on education and research, with severely limited capacity to advance other objectives such as CO₂ reduction, preserving the value and function of buildings, or the maintenance of instruments to foster spin-offs creation or to bring intellectual property to market.

In order to preserve excellence and to address emerging priorities in areas of strategic importance for Switzerland, **the ETH Board is thus asking the Federal Council and Parliament to approve an expenditure ceiling of CHF 11,761 million for the ETH Domain for the period 2029–2032** for implementing its overall strategy with appropriate measures. Based on the financial plan for the year 2028 and adjusted for inflation, **this would represent a 1% increase per year in real terms** (+2% nominal, of which 1% to compensate for inflation).

The annual federal funding is predominantly allocated as a base budget to the institutions (approximately 95%), enabling them to fulfil their core mission. **A share of 3–5% of the Confederation's contribution is earmarked** to co-finance large-scale research infrastructures prioritised by the ETH Board, as well as other strategic initiatives and, where applicable, seed and incentive funding.

Funding requirements for the core mission of the institutions

Given the current financial uncertainties, precise budget predictions remain difficult. The ETH Board's strategy for the ETH Domain aims therefore to maintain a degree of flexibility to ensure the ability to respond effectively to unforeseen events. The requested budget would allow the ETH Domain to continue fulfilling its mission in the long term and to adequately achieve the objectives described in the present Strategic Plan.

High-quality research-based education

Investment in education is not only critical for academic excellence but also represents a strategic contribution to Switzerland's future workforce, supporting the evolving needs of the industry and the public sector.

High-quality research-based education remains a priority for the ETH Domain. Delivering on this objective requires continuous investment in human resources and infrastructure, ensuring adequate teaching capacity, supervision and available space. Over the past decade, student numbers have increased significantly, while professors, administrative and central services, as well as infrastructure, have not expanded at the same pace. This reflects the sustained efforts of the ETH Domain institutions to improve efficiency and optimise the use of available resources. While efforts to improve efficiency will continue during the period 2029–2032, the margin for meaningful further gains is increasingly constrained. The maintenance of high-quality research-based education will only be possible with sufficient supervision capacity and significant investment in teaching infrastructure. Targeted use of digital tools to support teaching and learning processes (especially AI) will allow for more efficient and scalable delivery but will need substantial investments.

The requested budget would make it possible to ensure high-quality research-based education:

- ETH Zurich and EPFL would be able to continue developing education programmes and ensure high quality over the long term.
- They would be able to invest more rapidly in modernising teaching methods and tools, particularly in adapting education to AI-driven developments and expanding interactive learning formats.
- ETH Zurich and EPFL would be better positioned to preserve appropriate supervision ratios between students and the scientific staff (incl. professors) contributing to teaching.

Student numbers are expected to continue growing until 2032, with a projected increase of around 3% per year from 2029 to 2032. They are therefore expected to remain at a high level, making continued investment in capacity expansion essential, particularly in scientific staff and infrastructure. These investments are a major strategic priority and will continue to represent a significant share of ETH Zurich and EPFL's budgets.

In a financial situation with no real budget growth the institutions may be able to maintain current levels of teaching quality, but this would likely result in a deterioration of the ratios between students and scientific staff contributing to teaching over the long term. The development and adaptation of existing and new educational programmes would also be impaired and would not leave the necessary flexibility to adapt efficiently to labour market needs.

World-class research

Investing in research represents an opportunity to strengthen Switzerland's innovation capabilities and long-term international competitiveness, as well as to address current and future challenges effectively.

Conducting research at the highest, internationally competitive level relies on skilled and talented researchers and staff, as well as on state-of-the-art equipment and infrastructure. The financial contribution from the Confederation allows the institutions to seize new opportunities proactively and to invest freely in fundamental research, a prerequisite for generating knowledge, technology and innovation.

The requested budget would provide the ETH Domain with the resources needed to pursue world-class research:

- The ETH Domain institutions would have the necessary flexibility to engage in emerging research fields through the recruitment of professors and scientific staff in new areas, in a timely manner.
- They could launch or participate in new cutting-edge and collaborative initiatives within the Strategic Areas 2029–2032 (e.g. AI, semiconductors, space, health, climate, energy and sustainability).

The Swiss AI Initiative, launched for the period 2025–2028, provides a concrete illustration of the importance of enabling the ETH Domain to rapidly mobilise expertise and resources in emerging fields of strategic relevance. Such an initiative is central to maintaining Switzerland's strategic global relevance in AI and is fully in line with the mandate given to the ETH Domain. While such strategic initiatives could in theory still be launched under a scenario with no real budget growth, this would come at the expense of their activities and objectives.

In a financial situation with no real budget growth, the number of professorships would remain stable between 2029 and 2032. Within these framework constraints, the institutions of the ETH Domain would strive to remain agile and engage in strategically relevant research areas. Strategic reorientation would largely depend on the departure of retiring professors and scientists, limiting the ability to act in a timely manner and engage in emerging fields that are crucial for maintaining Switzerland's leading position and addressing key challenges.

State-of-the-art research infrastructures and platforms

Investments in large-scale research infrastructures are essential to ensure that existing infrastructures remain internationally competitive and that new infrastructures can be established to meet the needs of the national and international scientific communities.

The ETH Domain dedicates significant financial resources to the upgrading and operation of existing large-scale and middle-scale research infrastructures and platforms, as well as to the development of new ones, with the aim of supporting cutting-edge research and innovation. Operation and maintenance costs are largely covered by the core budget of the institutions. Investment in new large-scale infrastructures or major upgrades may be co-financed by the ETH Board through centrally planned funds and/or supported by third-party contributions.

The requested budget would give the ETH Domain the means to maintain and develop their large-scale research infrastructures and platforms:

- The large-scale research infrastructures of the ETH Domain could be operated at full capacity.
- It would be possible to upgrade existing research infrastructure and possibly develop new ones, in line with the projects selected to enter the Swiss Roadmap 2027.

For the period 2029–2032, the ETH Board gives strategic priority to a selection of large-scale research infrastructure projects submitted to the Swiss Roadmap 2027 (HPCN-32 and SwissFELplus as substantial upgrades of existing large-scale research infrastructures and BedrettoLab, SIAS, WATER, SwissQCF and WML as new projects). Decisions regarding the implementation of these projects are to be taken in 2028, after completion of the scientific review conducted by the SNSF and the evaluation by the ETH Board of the feasibility and financing scheme, as well as once the budget allocated to the ETH Domain for the period 2029–2032 is known.

In a financial situation with no real budget growth, existing large-scale research infrastructures would continue to operate and be available to the scientific community in Switzerland and abroad. Priority would be given to essential upgrades. Substantial upgrades or new projects would need to be postponed or reconsidered.

Efficient knowledge and technology transfer (KTT)

Investment in KTT allows the ETH Domain institutions to actively contribute to Switzerland's innovation capacity, to strengthen the dialogue between research and society and to translate research results into technologies, practice and policy-making.

Maintaining the various instruments and programmes to support students and researchers in KTT activities requires significant resources. This also holds true for bridging the gap between fundamental and applied research and for funding the steps from innovation to application. The science-based services provided by the ETH Domain institutions for the benefit of Swiss society as part of the tasks assigned to the ETH Domain by the Federal Council also absorb a considerable volume of financial resources and are covered by the base budget of the institutions.

The requested budget would allow the ETH Domain to maintain efficient and impactful knowledge and technology transfer:

- The ETH Domain institutions would be in the best position to achieve the objective of consolidating and further strengthening existing KTT activities.
- They would be able to continue to deliver services to Switzerland at the expected level of quality over the long term.

Intellectual Property (IP) is a key driver of KTT and innovation, particularly through the foundation of spin-off companies. To fully realise the potential of research outcomes, sustained investment in the protection and strategic development of IP is essential. Strengthening these capabilities will enable the ETH Domain institutions to protect, maintain and fully exploit their IP positions, enabling them to develop valuable technologies and creating long-term value for the Swiss economy.

In a financial situation with no real budget growth, the ETH Domain institutions will not be able to expand their KTT activities as they will need to prioritise education and research over other tasks. Third-party funding can support specific transfer projects and initiatives, especially when done with private partners. The institutions also aim at leveraging synergies and collaborations within the ETH Domain and with external partners. The development and expansion of the tasks assigned to the ETH Domain by the Federal Council can only be achieved with dedicated additional funding.

Attractive careers and respectful working conditions

Attractive careers and respectful working conditions are essential to retain and motivate talented researchers and staff. With adequate financial contributions from the Confederation, the institutions can maintain their workforce and continue delivering high-quality education, research and services.

To support the career development of their members, the ETH Domain institutions seek to offer attractive and respectful working conditions and expand their continuing education opportunities as much as possible, even under a constrained budget. The ETH Domain will continue to dedicate an appropriate share of the Swiss Confederation's financial contribution to implementing measures for the promotion of diversity, equality and inclusion. Efficiency measures are also implemented, fostering process optimisation in administration and teaching, possibly supported by AI.

The requested budget would make it possible to sustain the working conditions and career opportunities expected from the ETH Domain:

- The ETH Domain institutions would be able to recruit more professors and staff, and to remain very attractive employers in Switzerland.
- They would be able to invest more and faster in the development of central services (incl. AI and digitalisation) for the good of their employees and for the efficiency of the system.
- They would be able to better support workplace well-being and resilience initiatives.

In a financial situation with no real budget growth, the hiring capacities of the ETH Domain institutions would remain very limited, and new positions would most often be restricted to replacing retired staff. The expansion of central services would also be constrained, reducing the institutions' capacity to support operational, administrative and digital needs efficiently.

Real estate management

Adequate and stable funding is essential for the development and maintenance of the ETH Domain real estate portfolio, which in turn is crucial to meeting the evolving needs of research and education, as well as the requirements of the Federal Government.

A balanced approach is required to preserve the value and functionality of existing infrastructure while investing in new capacity and strategic priorities.

The requested budget would allow targeted development and systematic maintenance:

- The ETH Domain would be able to implement needed infrastructure investments and therefore fully support its core mission of teaching and research through real estate portfolio development.
- Necessary renovations with a view to sustaining value and function over the longer term would be ensured.

In a financial situation with no real budget growth, priority would be given to safety and functionality, with a focus on the implementation of legally required investment projects. New construction projects and renovations might be postponed or adjusted. In such a scenario the preservation of the function and value of the building portfolio would become increasingly challenging.

Reduction of CO₂ emissions and measures for environmental sustainability

Implementing organisational and infrastructural measures needed to reduce CO₂ emissions are cost intensive. The fulfilment of these objectives depends strongly on the budget provided by the Swiss Confederation.

Under the Climate and Innovation Act (KIG), the ETH Domain is required to reduce its direct and indirect greenhouse gas emissions to net zero by 2050 at the latest, and, in line with its legally mandated role as a role model, it strives to achieve net-zero emissions by 2040. To fully support these objectives, the ETH Domain seeks to reduce its own CO₂ emissions at the source. However, the continued implementation of the necessary organisational and infrastructural measures requires sufficient financial resources.

With the requested budget, the ETH Domain institutions can meet their basic sustainability obligations:

- The ETH Domain would be able to implement most CO₂-reduction measures in the areas of buildings and processes.
- However, it would not be possible to implement all the measures required for the ETH Domain to serve as a net-zero role model. Achieving this ambition would therefore require additional funding for dedicated net-zero measures as well as for NET certificates for Scope 1 and 2 emissions.

In a financial situation with no real budget growth, priority would be given to the measures with the greatest impact on CO₂ reduction, while other measures would have to be discontinued. Under these circumstances, the ETH Domain would still make targeted progress towards net zero, but would not be able to fully meet its ambition of serving as a role model or finance additional net-zero measures.

Other notable factors affecting the expenditure ceiling

Decommissioning and disposal of the accelerator facilities at PSI

Special funding of CHF 44 million is included in the requested expenditure ceiling for the period 2029–2032. This amount is earmarked to finance the provisions for expenses related to the dismantling of the accelerator facilities and the disposal of the related radioactive waste at PSI. The provision is based on cost estimates by the Federal Government and the ETH Domain for nuclear waste disposal, drawing on Swissnuclear's 2021 cost study for deep geological disposal (KS21). These together with the annual financing amount were noted by the Federal Council on 15 December 2023¹⁴.

Annual salary measures

Annual salary measures usually include, if applicable, an inflation adjustment and/or a real salary increase plus the effects of the steering of the system (individual salary increase), which are all financed through the expenditure ceiling of the respective ERI period. As was seen in past years, these measures are usually aligned with the annual salary measures taken by the Swiss Confederation.

Inflation

The indicated financial requirements of CHF 11,761 million include an assumed annual inflation rate of 1.0%. This assumption is derived from the economic parameters for financial planning¹⁵ of the FDF on the one hand, and is compared with the conditional inflation forecast from the Swiss National Bank's monetary policy assessment¹⁶ on the other. The latter aims to keep inflation within the price stability range in the medium term. The observation period extends to 2029 and considers both national and international economic developments. **Uncertainty regarding global economic scenarios remains high.** Inflation for 2030 is forecast at 1% and is projected to continue at a linear rate of 1% until 2032 due to a lack of forecast inputs.

Increase in efficiency

Standardising and streamlining administrative processes, along with leveraging synergies through shared use of facilities as well as shared services, will help reduce costs and foster knowledge exchange within the ETH Domain. While efforts to improve efficiency have been undertaken for several years at different levels, they will continue during the next years. Among well-established measures to exploit synergies in administration, services and management are the coordinated procurement of the ETH Domain with the University of Zurich (KoBe ETH+), the scientific library of PSI, Empa, Eawag and WSL Lib4RI or lead campus. At the institutional level, the digitalisation of administrative processes has a positive impact on efficiency – although the demand for governance and compliance is constantly increasing. Additional opportunities for coordination within the ETH Domain will also be continuously identified and put into practice.

¹⁴ The assessment of the total cost for the radioactive waste of the Federal Government is updated every five years.

¹⁵ [Eckwerte Finanzplanung](#)

¹⁶ [Geldpolitische Lagebeurteilung März 2026: Zusammenfassung der Diskussion](#)

VI. The Strategic Plan within the Framework of the ERI Dispatch

For drafting its Strategic Plan 2029–2032 for the ETH Domain, the ETH Board has been mandated by the State Secretariat for Education, Research and Innovation (SERI) to address key challenges facing the ETH Domain in the coming years, and to identify resulting opportunities. The ETH Board has also been tasked with proposing measures to maintain effectiveness and efficiency, with a focus on exploiting synergies and the distribution of tasks in particularly cost-intensive areas, and optimising the use of resources. In addition, the Strategic Plan for the ETH Domain addresses the transversal themes defined by SERI for the ERI Dispatch 2029–2032: digital transformation, sustainable development, equality, and national and international cooperation.

Challenges facing the ETH Domain in the coming years and resulting opportunities

The identification of challenges and opportunities for the period 2029–2032 is primarily based on desk research, followed by a collaborative process between the institutions and the ETH Board. As a result, six system-level challenges were identified for the period 2029–2032 that are expected to have a significant impact on Switzerland and its ERI system, including the ETH Domain (see p. 16 et seq.). As a key actor in education, research and innovation in Switzerland, the ETH Domain is well positioned to contribute to solving these challenges.

Effectiveness and efficiency

While efforts to improve efficiency have been undertaken for several years at different levels, they will continue during the next years. Thus, effectiveness and efficiency are key aspects spanning the entire Strategic Plan 2029–2032. The complementarities and synergies among ETH Zurich, EPFL and the research institutes are not only unique strengths of the ETH Domain (see p. 12), they can also be leveraged to increase effectiveness and efficiency in all its activities. Collaboration is also an important factor for increasing efficiency, impact and the reach activities. Especially in the five Strategic Areas and Transversal Areas identified for the period 2029–2032 (see p. 22 et seq.), the institutions of the ETH Domain can have a particularly strong impact through cooperation. They can promote the exchange of expertise, and the sharing of infrastructures, expertise and costs, as well as leverage synergies across the ETH Domain and beyond. Specific measures within the core tasks and key resources & assets are also aiming at an increase in effectiveness and efficiency.

For example, in terms of education, cooperation among ETH Zurich, EPFL and the research institutes enables high-quality teaching, diversified supervision and enriched continuing education offers (see p. 41). Close collaboration with other Swiss higher education institutions helps to exploit the complementary profiles of the institutions (see p. 41). In research, national and international collaboration promotes the sharing of infrastructures, expertise and resources, while coordinated efforts ensure that large-scale infrastructures of national and European relevance are developed and used efficiently (see p. 45 and p. 47 et seq.). The impact of KTT activities also benefits from coordinated initiatives and collaboration with industry and the public sector (see p. 51 et seq.). Efficiency gains are further achieved through improved real estate management, responsible financial planning, and the optimisation of administrative processes (see p. 61 et seq. and p. 72). Together, these measures aim at a strategic use of resources, maximising their long-term value for Switzerland's education, research and innovation system.

Transversal themes

Digital transformation. The ETH Domain is a key worldwide actor in education, research and innovation related to digital transformation. For the period 2029–2032, the ETH Board focuses activities on this field through the dedicated Strategic Area *AI and Digital Transformation* (see p. 28 et sqq.). Digitalisation is a core element across the educational programmes of ETH Zurich and EPFL, including the use and development of AI (see p. 41). AI and Digital Transformation is also central to the continuing education offers developed by the institutions (see p. 42). In addition, several large-scale research infrastructures of the ETH Domain aim to advance fields closely associated with digitalisation, including quantum technologies and data science (see p. 49 et seq.). Furthermore, the ETH Domain supports the Swiss economy and public authorities in addressing the technological, societal and security challenges associated with digital transformation and AI.

While digitalisation has long been a core focus of the ETH Domain, the rapid development of AI is now fundamentally reshaping higher education, research and working practices. The ETH Domain aims to lead this transformation by leveraging its scientific and technological expertise and the close link between research and teaching, while also providing its employees with the best possible conditions to adapt to and shape these developments (see p. 41 and p. 56). AI is central to all Strategic Areas, accelerating discovery, enhancing prediction and decision-making, and transforming experimental, computational and data-driven research workflows. Realising its full potential depends on the development, sharing and availability of robust national and international infrastructures in high-performance computing, and data ecosystems, as well as strong interdisciplinary expertise. AI thus spans the entire Strategic Plan 2029–2032 of the ETH Board for the ETH Domain, from the development and upgrading of research infrastructures to its use and impact on education, research and human resource development.

Sustainable development. The ETH Domain is committed to environmentally, socially and economically sustainable development in and through all its activities, from education to research, knowledge and technology transfer, and in the construction and maintenance of its real estate portfolio and large-scale research infrastructures (see Guiding Principles, p. 13). The ETH Domain also aims to act as a role model in terms of innovative and responsible construction and operation (see p. 59). Environmental sustainability is a priority within several Strategic Areas defined for 2029–2032. The Strategic Area *Climate and Environmental Sustainability* (see p. 26 et sqq.) addresses this challenge directly with applied research and through concrete actions and technological solutions. In addition, the Strategic Area *Energy* (see p. 24 et sqq.) contributes to the transition toward sustainable energy systems, while the Strategic Area *Emerging Materials and Key Technologies* considers sustainability to be a key element when developing materials and technologies (see p. 32). Accelerating technological development for the benefit of people and the planet requires innovation that is both responsible and mindful of societal and environmental impacts. The ETH Domain can lead by example by promoting the integrated and responsible use of technology to support human and ecological well-being. As a key actor in Switzerland's innovation landscape, the ETH Domain can also contribute significantly to the country's long-term economic performance.

Equality. Equality, together with respect, diversity, inclusion, dialogue and trust, is recognised as a prerequisite for the successful fulfilment of the ETH Domain's mission and is actively put into practice (see Guiding Principles, p. 13). The institutions of the ETH Domain provide an inspiring, inclusive and respectful environment for all employees and students, recognising openness and diversity as key drivers of excellence and creativity in education, research and all other activities (see p. 13, p. 43, p. 55 et sqq.). They ensure equal opportunities in recruitment and promotion, promote the academic careers of women and other under-represented groups and support their professional development. Effective measures are implemented to mitigate stereotypes and biases. The institutions also

promote the recruitment and inclusion of people with disabilities through dedicated measures and ensure the prevention of all forms of discrimination (see p. 56).

National and international cooperation. National and international cooperation and collaboration are essential for progress in science and a prerequisite for academic excellence. It is a continuous strategic focus for the ETH Domain. Collaboration within the ETH Domain is promoted through the Strategic Areas and Transversal Areas (see p. 20 et sqq.), cross-institutional initiatives and activities across all core tasks. National and international scientific collaborations are key for sharing expertise and increasing the efficiency and reach of research activities (see pp. 13, 45 and 47). The ETH Domain institutions therefore ensure and nurture national and international partnerships while taking evolving geopolitical contexts into account. The close cooperation with European partners, as well as the participation in the European Framework Programmes for Research and Innovation, is highly relevant (see p. 14 and p. 45).

Cooperation with industry and public authorities is also crucial for knowledge and technology transfer (see KTT, p. 51 et sqq.). Through cooperation, the ETH Domain institutions promote the sharing of infrastructures, expertise and resources, and make effective use of their complementary profiles and those of other Swiss higher education institutions, as well as of partners in the public and private sectors. In this way, cooperation and collaboration reinforce effectiveness and efficiency across the ETH Domain (see also above) and contribute to Switzerland's competitiveness in education, research and innovation.

Financial scenario used for the Strategic Plan and priority setting

Due to the financial uncertainties affecting both the budget growth rate for the ERI period 2029–2032 and the level of funding in 2028, which serves as the basis for calculations for the ERI Dispatch 2029–2032, the SERI recommends working with scenarios that include a baseline requirement and consider strategic priorities and posteriorities.

The ETH Board has drafted its Strategic Plan 2029–2032 for the ETH Domain based on a scenario of +1% growth in real terms (+2% nominal), which corresponds to limited growth when taking inflation into account (see p. 72).

Chapter V on financial requirements (p. 65 et sqq.) describes how the requested budget would allow the ETH Domain to continue fulfilling its mission in the long term and to adequately achieve its objectives. It also refers to priorities and posteriorities in the case of a flat budget in real terms.

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