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Swiss Federal Office of Energy SFOE
Energy Research and Cleantech

Swiss Federal Office for the Environment FOEN
Climate Division

SWEET Call 1-2024: Call Guideline

Addressing Hard-To-Abate Emissions to Reach the Net-Zero Target of Switzerland

This call is jointly issued by the Swiss Federal Office of Energy (SFOE) and the Swiss Federal Office for the Environment (FOEN)

**The call for pre-proposals closes on 3 July 2024 at 12:00 noon CEST.
The notification of intent to submit a pre-proposal must be submitted by 8 May 2024.**





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1 Introduction

1.1 SWEET: Research for the energy transition

SWEET (SWiss Energy research for the Energy Transition) is a funding programme owned and managed by the Swiss Federal Office of Energy (SFOE).¹ The purpose of SWEET is to fund inter-/transdisciplinary research² and innovation activities with a focus on the goals of Switzerland's Energy Strategy 2050³ and long-term climate strategy.⁴ SWEET targets solution-oriented research and innovation in the natural sciences and engineering as well as in the social sciences and humanities (SSH) in the domains of energy efficiency, renewable energy production and consumption, storage, networks, society and energy, and security and safety of critical energy infrastructures. Within these domains, the SFOE, after consulting the Federal Energy Research Commission CORE, set the guiding theme of the current call as "Addressing Hard-To-Abate Emissions to Reach the Net-Zero Target of Switzerland". Assisted by discussions with various stakeholders, the SFOE and the Swiss Federal Office for the Environment (FOEN) subsequently formulated the research challenges in this call.

Meeting the research challenges specifically and the goals of Switzerland's Energy Strategy 2050 and long-term climate strategy generally requires that solutions are developed not just from a technical perspective, but in the context of suitable legal and regulatory frameworks, innovative market designs, as well as social acceptance and agency. Therefore, inter-/transdisciplinary approaches that result from close collaborations between the SSH and the natural sciences and engineering are essential. Such collaborations, in the form of consortia that reflect the diversity of Switzerland's research and innovation community, are central to the SWEET programme.

In response to SWEET calls, consortia consisting of research partners from universities, institutes of the ETH domain, and universities of applied sciences as well as implementation partners from industry/the private sector, the public sector (such as cantons, cities, communes, districts/regions, and federal enterprises), and non-governmental organisations (NGOs) are invited to propose portfolios of interrelated research and pilot and demonstration (P+D) projects, see Figure 1-1.⁵ The portfolios should be composed of projects focusing on research, development, demonstration, and deployment/implementation, structured such that the projects build on and feed into each other. The projects may involve real-world laboratories and other formats in which the effects on and the agency of people can be explored. As a result, the consortia and project portfolios should cover significant parts of the innovation system depicted in Figure 1-2. Some projects may start as soon as a consortium is launched, while others may follow at a later stage as they build on the output of earlier projects. Iterative feedback loops between the projects are encouraged. The research and P+D projects are supported by management and coordination, integration, and knowledge and technology transfer (KTT)⁶ activities.

¹ Further information is available at <https://www.bfe.admin.ch/sweet>.

² See Section 2 of the document "Support for Improved Implementation of Inter-/Transdisciplinarity in SWEET", prepared by tdn-net, the Network for Transdisciplinary Research of the Swiss Academies of Arts and Sciences, for descriptions of the terms "interdisciplinary research" and "transdisciplinary research". The document is available at <https://www.bfe.admin.ch/sweet>.

³ <https://www.bfe.admin.ch/bfe/en/home/politik/energiestrategie-2050.html>

⁴ <https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/emission-reduction/reduction-targets/2050-target/climate-strategy-2050.html>

⁵ The complete list of institutions eligible to receive SWEET funding and therefore be part of a consortium is given in Section 3.2.2.

⁶ KTT consists of communication, dissemination and exploitation of research results. Communication is about informing multiple audiences about the project and its results, and also reaching out to society to demonstrate the benefits of the research. During dissemination, results are made available to audiences such as peers, industry, other commercial actors or policymakers with the goal to enable use and uptake of results. Exploitation aims at using the results for scientific, social and economic purposes or having them used by other groups and institutions.

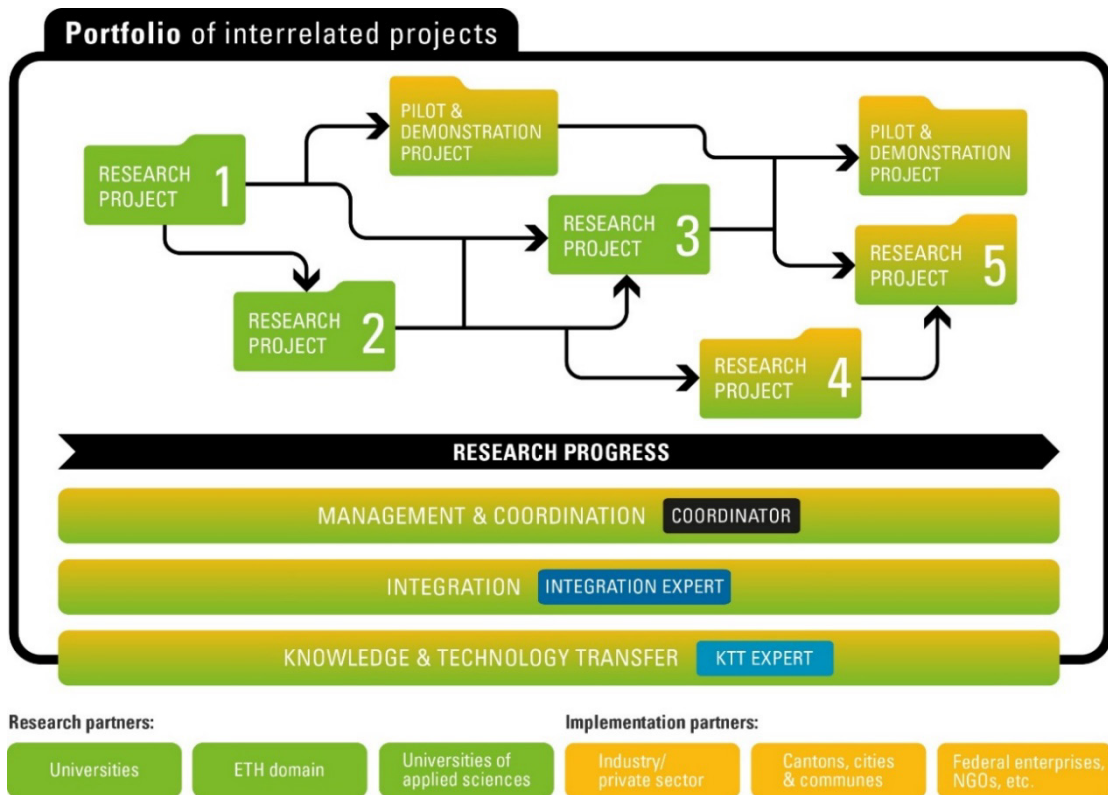


Figure 1-2: Schematic depiction of a portfolio of interrelated projects by a consortium of research and implementation partners, supported by management and coordination, integration, and knowledge and technology transfer activities. Section 3.2.4 describes the key positions of the coordinator, integration expert, and KTT expert.

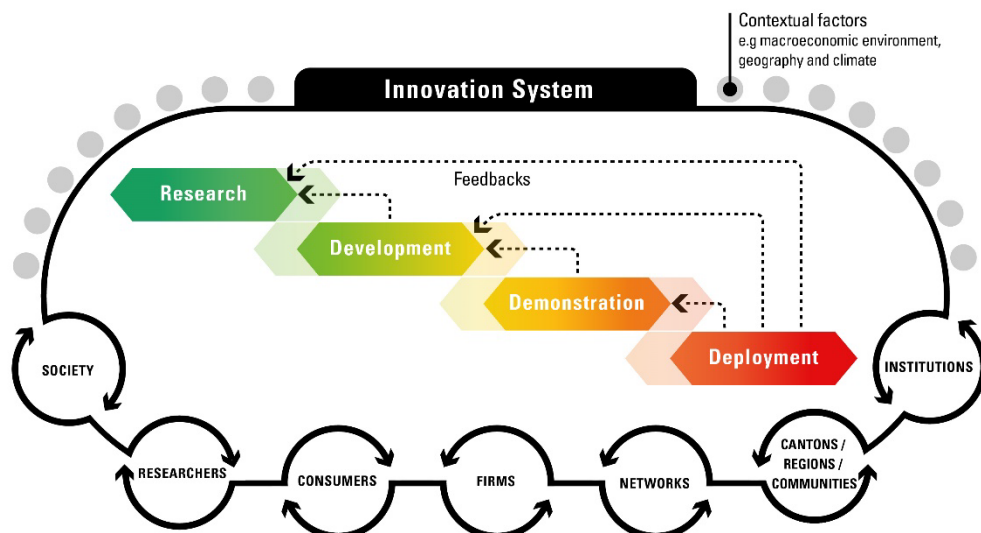


Figure 1-2: A schematic representation of the innovation system, significant parts of which should be covered by SWEET consortia and their project portfolios. The projects are expected to generate and exploit feedbacks, e.g., a market place or a community that demands innovations (deployment) is supplied with new knowledge and/or products from research, development, and demonstration. Adapted from International Energy Agency (2019), *Energy Technology Innovation Partnerships*, building on graphics and text sourced from Global Energy Assessment (2012), *Global Energy Assessment: Towards a Sustainable Energy Future*, Cambridge University Press and the International Institute for Applied Systems Analysis.



Successful consortia will normally receive SFOE funding for 6 to 8 years. SFOE's funding is subject to the principles of subsidiarity. In the context of SWEET, this means that the consortium partners contribute financially, each partner according to its abilities, to supplement SWEET funding and thereby ensure that the total financial resources are sufficient for the work programme of the consortium. Those partners that receive SWEET funding are referred to as members, while those that do not receive SWEET funding but finance their activities through own and/or third-party contributions are referred to as collaboration partners.⁷ The SFOE expects that every member of a consortium delivers complementary and significant contributions to the consortium's work programme.

SWEET consortia are managed by a host institution. Consortia should strive for gender diversity and reflect Switzerland's diversity in terms of languages and regions. Members from the SSH are expected to be equitably represented in the consortia and their management. Since the outputs of the consortia are expected to be relevant to the implementation of Switzerland's Energy Strategy 2050 and long-term climate strategy, consortia will be closely accompanied by the SFOE, with particular attention being paid to KTT.⁸

The research and innovation community is encouraged to regard the project portfolio of the consortium that will be funded through this call as a nucleus around which complementary projects relevant to the research challenges can be positioned and to pursue funding through national and international programmes for these projects.

1.2 Guiding theme: Addressing hard-to-abate emissions to reach the net-zero target of Switzerland

To reduce the risks and impacts of climate change, the Paris Agreement of 2015 sets the goal of limiting the global average temperature increase relative to pre-industrial levels to well below 2°C and pursuing efforts to restrict the increase to 1.5°C. The Intergovernmental Panel on Climate Change (IPCC) states that to achieve this goal, the global CO₂ emissions must be reduced by about 50% from 2010 levels by 2030, reach net zero by 2050, and become net negative in the second half of the century.⁹ Pathways reaching net-zero greenhouse gas (GHG) emissions include, in addition to transitioning away from fossil fuels, the use of carbon capture and storage (CCS) and carbon dioxide removal (CDR) to address hard-to-abate emissions.^{10,11}

In accordance with the Paris Agreement, the Federal Council in 2019 set the target that Switzerland shall achieve net-zero GHG emissions by 2050.¹² To reach the net-zero target, the Federal Council in January 2021 adopted the long-term climate strategy, which rests on ten strategic principles and sets

⁷ Starting with this call, the term "collaboration partners" replaces the term "cooperation partners". With this change, the SFOE wants to stress the need for research and implementations partners to work together toward *common* objectives as opposed to working together toward their own *separate* objectives.

⁸ The SFOE has developed a toolbox with 30 suggestions for measures that SWEET consortia may use to plan their KTT activities. For further information, see <https://www.bfe.admin.ch/bfe/en/home/research-and-cleantech/funding-program-sweet/ktt-for-sweet.html>.

⁹ IPCC (2018), Summary for Policymakers, in: *Global Warming of 1.5°. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-24, doi:[10.1017/9781009157940.001](https://doi.org/10.1017/9781009157940.001)

¹⁰ IPCC (2023) Summary for Policymakers. In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, IPCC, Geneva, Switzerland, pp. 1-34, doi:[10.59327/IPCC/AR6-9789291691647.001](https://doi.org/10.59327/IPCC/AR6-9789291691647.001)

¹¹ CDR is synonymous with negative emission technologies (NET).

¹² <https://www.bafu.admin.ch/bafu/en/home/topics/climate/news-releases.msg-id-76206.html>



emission pathways for specific sectors.⁴ The strategic principles most relevant to this call are summarised in Figure 1-3. In June 2023, the Swiss electorate approved the Climate and Innovation Act¹³ and thereby enshrined the net-zero target in national legislation. The Climate and Innovation Act stipulates that by 2050, GHG emissions have to be reduced as far as possible in all sectors and the effect of residual emissions has to be balanced by CDR (net-zero target). Furthermore, the Climate and Innovation Act defines emission reduction pathways for the building, transport, and industry sectors, see Table 1-1. The reduction pathway of the industry sector includes the use of CCS from large point sources, i.e., cement and waste-incineration plants. After 2050, the Climate and Innovation Act requires that negative emissions must exceed the residual emissions (net-negative target). The net-zero and the net-negative targets follow a combination of the “territorial principle” and the “point-of-sales principle” by taking into account GHG emissions within the territory of Switzerland and from fossil fuels tanked in Switzerland, including for international aviation and shipping.

Switzerland’s long-term climate strategy: Key principles directly relevant to this call

Principle 3: Reduce emissions primarily, and if possible, entirely within Switzerland. Because of their limited potential, CCS and CDR are reserved for emissions that are technically very difficult to avoid.

Principle 5: Use energy sources sparingly. With CCS and CDR as elsewhere, attention must be paid to renewable energies, energy efficiency, and optimal use, including across sectors (e.g., cascade use).

Principles 7-9: Make development sustainable. The roll-out of CCS and CDR should be designed in such a way as to be socially acceptable, economically viable, and environmentally sound.

Principle 10: Remain open to different technologies. CCS and CDR are developing rapidly, partly due to increasing global demand. They can contribute most effectively to meeting Switzerland's climate target if the country remains open to different technologies and pursues multiple promising approaches in parallel (portfolio approach).

Figure 1-3: Key principles of the long-term climate strategy that are directly relevant to this call.

Table 1-1: Overview of GHG emissions in 1990 and 2021¹⁴, the reduction pathways stipulated by the Climate and Innovation Act for the building, transport, and industry sectors (green), the reduction stated in the long-term climate strategy and the climate strategy agriculture and nutrition¹⁵ for the agriculture sector (blue), and the reduction pathway in the draft of the CO₂ law (red)¹⁶. The figures given for the transport sector exclude the emissions of international aviation and shipping. The net-zero target in 2050 includes the emissions of international aviation and shipping if the fuels were tanked in Switzerland.

Sector	GHG emissions (Mt CO ₂ eq)		Minimum reduction (relative to 1990)					
	1990	2021	Average 2021-2030	By 2030	Average 2031-2040	By 2040	Average 2041-2050	By 2050
Building	16.68	11.65				82%		100%
Transport	18.06	16.22				57%		100%
Industry	13.84	12.09				50%		90%
Agriculture	7.63	6.49						40%
All	55.34	45.25	35%	50%	64%	75%	89%	Net-zero

¹³ <https://www.fedlex.admin.ch/eli/fqa/2022/2403/de>

¹⁴ Federal Office for the Environment, *Switzerland’s Greenhouse Gas Inventory 1990-2021*, Submission 2023, see <https://www.bafu.admin.ch/bafu/en/home/topics/climate/state/data/climate-reporting/ghg-inventories.html>

¹⁵ Federal Office for Agriculture, Federal Food Safety and Veterinary Office, and Federal Office for the Environment (2023), *Climate Strategy Agriculture and Nutrition 2050*, see <https://www.blw.admin.ch/blw/de/home/nachhaltige-produktion/umwelt/klima0.html>

¹⁶ <https://www.fedlex.admin.ch/eli/fqa/2022/2652/de>



The reduction pathways in Switzerland's long-term climate strategy and in the Climate and Innovation Act are based on the Energy Perspectives 2050+ (EP2050+), which analysed possible evolutions of the Swiss energy system with the goal of attaining the net-zero target while ensuring security of supply.¹⁷ The EP2050+ are supplemented by several excursions, including on Negative Emission Technologies and CCS¹⁸ and on biomass.¹⁹ In addition, the EP2050+ results served as the foundation for studies on the cost and potential of CDR methods in Switzerland,²⁰ the decarbonisation of the Swiss cement industry,²¹ and a cost analysis of a CCS infrastructure in Switzerland.²² By accounting for decarbonisation and defossilisation measures in the building, transport, and industry sectors, the EP2050+ quantified hard-to-abate emissions in 2050 of about 12 Mt CO₂eq (based on GWP100) per year mainly in the industry sector (mostly cement and waste-to-energy plants) and in the agriculture sector, see the left-hand side of Figure 1-4. The CO₂ capture, removal, and storage necessary to balance the hard-to-abate emissions in 2050 is depicted on the right-hand side of Figure 1-4:

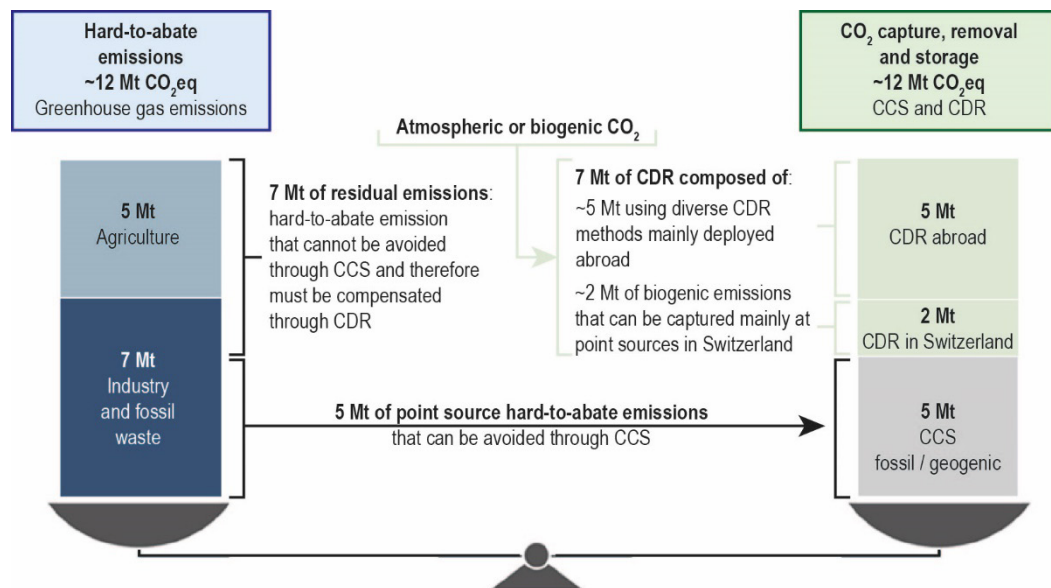


Figure 1-4: Overview of the anticipated sources and amounts of Switzerland's hard-to-abate GHG emissions in 2050 (left-hand side) and how they could be avoided by CCS and balanced by CDR (right-hand side). Adapted from a report by the Federal Council.²³

¹⁷ Federal Office of Energy (2020), *Energy perspectives 2050+*, see <https://www.bfe.admin.ch/bfe/de/home/politik/energieperspektiven-2050-plus.html>

¹⁸ Prognos AG and Infras AG (2021), *Energieperspektiven 2050+: Exkurs Negativemissionstechnologien und CCS: Potenziale, Kosten und Einsatz*, available at <https://pubdb.bfe.admin.ch/de/publication/download/10620>

¹⁹ Prognos AG and Infras AG (2021), *Energieperspektiven 2050+: Exkurs Biomasse: Potenziale und Einsatz in de Szenarien*, available at <https://pubdb.bfe.admin.ch/de/publication/download/10640>

²⁰ C. Brunner and R. Knutti (2022), *Potenziale und Kosten der CO₂-Entfernung aus der Atmosphäre in der Schweiz*, available at <https://www.aramis.admin.ch/Dokument.aspx?DocumentID=69759>

²¹ C. Nakhle, P. Eckle, and M. Krüger (2022), *Decarbonizing Cement: Technology assessment and policy relevant evidence for the decarbonization of the Swiss cement industry*, available at <https://www.aramis.admin.ch/Dokument.aspx?DocumentID=69296>

²² Deutsche Energie-Agentur and BAK economic intelligence (2023), *Carbon Capture & Storage (CCS): Kostenschätzung für ein CCS-System für die Schweiz bis 2050*, available at <https://www.aramis.admin.ch/Texte/?ProjectID=53710>

²³ Federal Council (2022), *CO₂-Abscheidung und Speicherung (CCS) und Negativemissionstechnologien (NET): Wie sie schrittweise zum langfristigen Klimaziel beitragen können*, available at <https://www.news.admin.ch/news/message/attachments/71551.pdf>



- Avoidance of fossil and geogenic (process-based) emissions by CCS: 5 Mt CO₂ per year can be avoided from point sources at cement-production plants and from the fossil part of the emissions from waste-to-energy plants and other industrial sites in Switzerland.
- Balance of residual emissions by CDR:
 - About 2 Mt CO₂ per year of biogenic emissions can be captured mainly at point sources such as the biogenic part of the emissions from waste-to-energy plants and biomass-based energy-production facilities in Switzerland (so-called bioenergy with carbon capture and storage or BECCS).
 - About 5 Mt CO₂ per year using other CDR approaches. The long-term climate strategy assumes that these negative emissions will mainly be generated by direct air capture (DAC) abroad.

Summing the CCS employed for avoidance (about 5 Mt CO₂) and the CCS employed for CDR (about 2 Mt CO₂), approximately 7 Mt CO₂ per year must be captured at point sources in Switzerland and permanently stored in products such as construction materials (an example of carbon capture, use, and storage, CCUS) or transported to geological storage sites in Switzerland or abroad. In addition, about 1 to 2 Mt CO₂ of CDR are expected to be necessary to balance residual fossil CO₂ emissions from aviation²⁴ plus an unquantified amount to balance the non-CO₂ effects of international aviation and shipping.

The Federal Council's report from May 2022²³ lays out the stepwise expansion of CCS and CDR to achieve the net-zero target and divides the expansion into two phases, a pioneer phase until 2030 and a targeted scaling phase from 2031 to 2050, see Figure 1-5. The report also sets the reference values

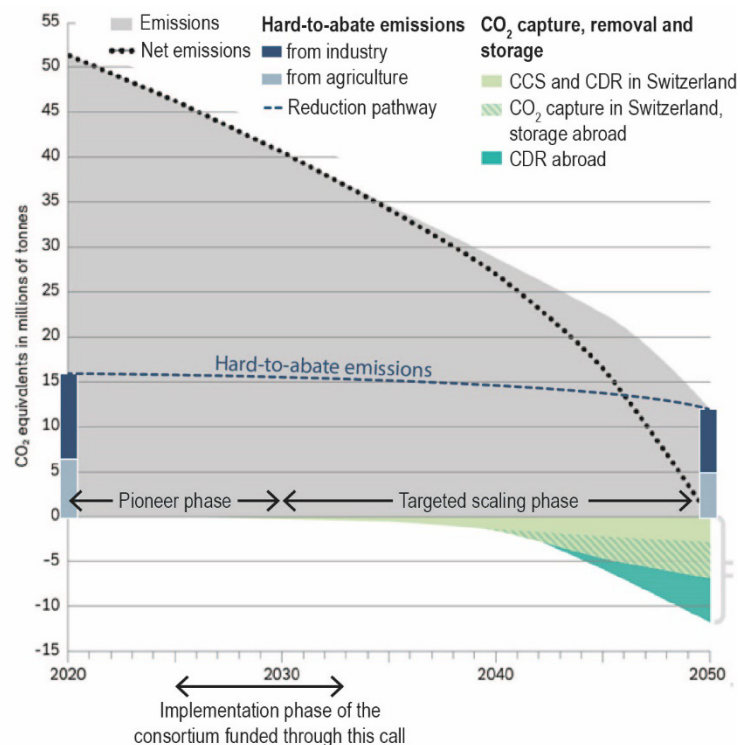


Figure 1-5: Expansion of CCS and CDR in accordance with the Swiss long-term climate strategy through a pioneering phase until 2030 and a targeted scaling phase from 2031 to 2050). Adapted from a report by the Federal Council.²⁴

²⁴ Federal Council (2024), *CO₂-neutrales Fliegen bis 2050*, available at <https://www.news.admin.ch/news/message/attachments/86230.pdf>



for the yearly amounts of CO₂eq captured/removed and permanently stored by CCS and CDR shown in Table 1-2.

For the targeted scaling phase to reach approximately 7 Mt CO₂ captured at point sources per year in 2050, it is necessary to establish large-scale infrastructure for CO₂ transport (i.e., pipelines) and storage and to develop regulatory frameworks.^{25,26} The consortium that will be funded through this call is expected to operate for 6 to 8 years beginning in 2025 and will therefore be operational for the remainder of the pioneer phase and for up to the first 3 years of the targeted scaling phase, see Figure 1-5. The overarching goal of this SWEET Call is for the consortium to make a tangible contribution to the net-zero target. Therefore, the consortium is expected to define a work programme that will culminate in solutions that are suitable and ready for scaling by 2031.

Table 1-2: Reference values for the yearly amounts of CO₂eq captured/removed and permanently stored by CCS and CDR as contained in the Federal Council's report from May 2022.

Year	Target (in Mt CO ₂ eq)
2030	about 0.5
2035	about 1.0
2040	about 2.0
2045	about 5.0

1.3 The application process

To render the application process more efficient for both consortia and evaluators, SWEET calls are organised into two steps, see Figure 1-6. In the first step, consortia submit a pre-proposal. All submitted pre-proposals will be subjected to an admissibility and eligibility check by the SFOE. The admissible and eligible pre-proposals will be evaluated and ranked by a panel of independent experts. The two highest-ranked consortia will be invited by the SFOE to submit more detailed full proposals. In the second step, the invited consortia prepare and submit full proposals that will again be evaluated by the expert panel.

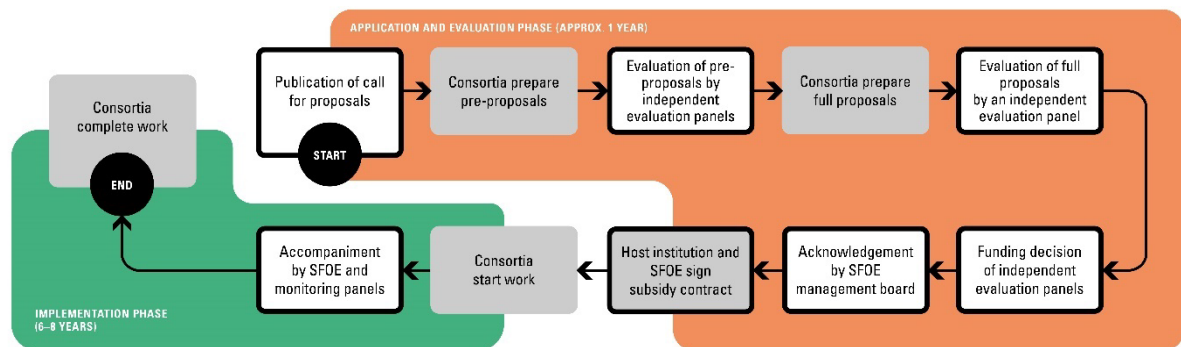


Figure 1-6: The two-step application and evaluation phase of SWEET calls (indicated by the orange background), and the implementation phase (indicated by the green background). Grey boxes and white boxes with a black margin represent activities by consortia and the SFOE, respectively. Grey boxes with a black margin indicate activities that involve both consortia and the SFOE.

²⁵ The potential design of a CO₂ pipeline infrastructure was studied by the CO₂NET project, for which various reports are available at <https://www.aramis.admin.ch/Texte/?ProjectID=47346>.

²⁶ The upscaling of CCUS chains and the design of CO₂ pipeline infrastructure was part of the DemoUpCARMA project, for which various reports are available at <https://www.aramis.admin.ch/Texte/?ProjectID=49400>.



The consortium with the highest-ranked full proposal will be awarded SWEET funding and begin the implementation phase, see Figure 1-6.

The pre-proposal contains only brief descriptions of the expected outcomes²⁷ and objectives, the extended consortium, the collaboration within the extended consortium, the overarching approach, the work packages (WPs), and the budget. Only the host institution must submit a letter of commitment. For the other members, letters of intent are sufficient. The full proposal will contain more detailed descriptions and include letters of commitment for all members.

Important dates associated with this call are shown in Table 1-3. The deadline for submission of full proposals will be announced together with the invitation to submit full proposals.

Table 1-3: Important dates and times associated with this call. Entries in italics are provisional.

Event	Date and time
Deadline for notification of intent to submit pre-proposal	8 May 2024
Deadline for submission of pre-proposals	3 July 2024 at 12:00 noon CEST
Announcement of evaluation results	<i>October 2024</i>
Invitation to submit full proposals	<i>October 2024</i>
Workshop on improved implementation of inter-/transdisciplinarity	<i>November 2024</i>
Deadline for submission of full proposals	<i>February 2025</i>
Announcement of funding decision	<i>April 2025</i>
Consortium starts operations	<i>June 2025</i>

1.4 Support for improved implementation of inter-/transdisciplinarity

As mentioned in Section 1.1, meeting the research challenges posed in this call specifically as well as the goals of Switzerland's Energy Strategy 2050 and long-term climate strategy generally requires inter-/transdisciplinary approaches. The experiences of SWEET consortia that are currently in the implementation phase shows that the implementation of inter-/transdisciplinarity approaches is challenging. To support SWEET consortia in grappling with this challenge, the SFOE and the Network for Transdisciplinary Research (td-net)²⁸ of the Swiss Academies of Arts and Sciences have entered into a collaboration. The support offered by td-net to SWEET consortia is threefold:

1. During the application phase, while preparing pre-proposals, consortia are expected to consult the document "Support for Improved Implementation of Inter-/Transdisciplinarity in SWEET", which was prepared by td-net and contains information and resources on topics such as conducting stakeholder analyses and developing and formulating expected outcomes and integration concepts.
2. During the application phase, while preparing full proposals, consortia will be invited to attend a workshop in which representatives from td-net will present further information on the above-

²⁷ The term "outcome" is used here in the context of the five-stage impact model, which distinguishes between inputs, activities, outputs, outcomes, and impacts. In the SWEET programme, the five stages are interpreted as follows: "inputs" are the SWEET calls and the associated funding; "activities" are the research, innovation, and KTT activities of SWEET consortia; "outputs" are the immediate results of the activities; "outcomes" are the effects of the outputs on a consortium's stakeholders; and "impacts" are the effects of the outcomes on whether and when the targets of Energy Strategy 2050 and the long-term climate strategy are achieved.

²⁸ <https://transdisciplinarity.ch/en>



mentioned topics and provide advice on how recommendations by the evaluation panel could be addressed.

3. During the implementation phase, consortia may request support by td-net on overcoming specific challenges. In addition, the monitoring panel may request that td-net provide support.

It should be noted that td-net is not involved in the evaluation of the proposals and that it is the consortia's responsibility to decide whether and how to incorporate the information and advice provided by td-net. All questions about the support by td-net must be addressed to the SWEET Office, see Section 7.

2 Research challenges

This call comprises four research challenges. One consortium will be supported with a budget of at most CHF 18.4 Mio. to tackle the challenges over 6-8 years, see Section 3.4.1. Additional funding is available through the SFOE's P+D programme, see Section 3.4.3.

2.1 Research challenge 1

How can alternative societal, economic, and technical measures reduce the hard-to-abate emissions and thereby lower the contributions of CCS and CDR that are currently foreseen to reach the Swiss net-zero target?

There are several reasons why alternative measures i.e., measures that have so far been either unexplored or only little explored, are of interest. The first is that the net-zero scenarios of the EP2050+, on which the pathway in Table 1-2 is based, assumed few demand-side changes as a result of behavioural changes although the latter are believed to have the potential to significantly reduce GHG emissions. For instance, the recent IPCC report highlights that demand-side mitigation, through both efficiency and sufficiency, and the circular economy provide strong levers to reduce hard-to-abate emissions.²⁹ Furthermore, the IEA Net Zero Roadmap update of 2023 attributes a key role to the scaling up of energy efficiency and behavioural change, accounting for 11% cumulative emission reduction by 2030 alone.³⁰ The significance of behavioural changes to reducing emissions is also evident from the fact that while the long-term climate strategy set a reduction target of 40% for the agriculture sector, the climate strategy for agriculture and nutrition estimates that the theoretical reduction potential from reduction of food waste and dietary shifts is 75%.¹⁵ Despite the widely acknowledged potential of behavioural changes to reduce emissions, only 3% of the scientific literature on CDR is being published in social-science journals.³¹

The second reason for exploring alternative measures is cost. The construction and operation of a Swiss CCS infrastructure from 2028 to 2050 alone is estimated to cost between CHF 11.2 and 21.4 billion.²² The EP2050+ assumed that the yearly overall cost for CCS and CDR will rise to CHF 2.3 billion in the year 2050, of which CHF 1.4 billion are associated with direct air carbon capture and storage (DACCS) abroad. The high costs and the risk of stranded assets warrant the exploration of alternative pathways that might be less costly. Finally, few CDR options are available at scale today and there are open

²⁹ Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, UK and New York, NY, USA.

³⁰ International Energy Agency, *Net Zero Roadmap: A Global Pathway to Keep the 1.5° Goal in Reach, 2023 Update* (2023), available at: <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach>

³¹ S. M. Smith, O. Geden, G. Nemet, M. Gidden, W. F. Lamb, C. Powis, R. Bellamy, M. Callaghan, A. Cowie, E. Cox, S. Fuss, T. Gasser, G. Grassi, J. Greene, S. Lück, A. Mohan, F. Müller-Hansen, G. Peters, Y. Pratama, T. Repke, K. Riahi, F. Schenuit, J. Steinhilber, J. Strefler, J. M. Valenzuela, and J. C. Minx (2023). *The State of Carbon Dioxide Removal - 1st Edition. The State of Carbon Dioxide Removal*. doi: [10.17605/OSF.IO/W3B4Z](https://doi.org/10.17605/OSF.IO/W3B4Z)



questions about their cost, environmental impacts, and public perception. To take just one example: DACCS must undergo rapid cost reduction to be deployed soon enough and at sufficiently large scale to balance the residual emissions by 2050 and enable net-negative emissions beyond 2050.

The consortium is expected to explore alternative measures to reduce the hard-to-abate emissions and thereby lower the contributions of CCS and CDR that are necessary to meet Switzerland's long-term climate targets. An increased emphasis on demand-side mitigation and social aspects is crucial because these have not received much attention so far. It is not sufficient for the consortium to study demand-side mitigation and social aspects from a theoretical point of view; instead, the consortium must investigate the practical implementation of such measures by conducting transdisciplinary research with citizens, authorities, and other stakeholders at the intersection of society and science. Knowledge can be co-produced through case study work, for instance, in real-world laboratories, and the consortium is expected to research the transferability, scalability, and implications of this knowledge.

The alternative measures must be analysed with appropriate energy-system models where possible. The model results must be assessed for their robustness, i.e., the sensitivity with respect to assumptions and compared to results obtained without the alternative measures as well as existing cost estimates.^{18,22,25} The consortium must build on the outputs of the CROSS activity³² and contribute to the continuing harmonization of assumptions, scenarios, and narratives/storylines by the CoSi consortium.³³ The consortium is expected to set aside resources for the interactions with CROSS, CoSi, and relevant other SWEET consortia.

2.2 Research challenge 2

What are robust pathways for building and operating a Swiss carbon capture, use, and transport, storage (CCUTS) infrastructure?

One challenge facing a Swiss CCUTS infrastructure is the interplay with the evolving energy system. For instance, assuming the “Zero Basis” scenario of the EP2050+, up to 2.6 TWh of electrical energy and 5.4 TWh of thermal energy will be required to capture, compress, and transport CO₂, which amounts to about 4% and 7% of the total anticipated demands of Switzerland in 2050, respectively.^{18,22} A second challenge relates to the CO₂ captured in Switzerland, which according to the long-term climate strategy should, if possible, be stored in Swiss geological storage sites and permanent products such as construction materials. However, the geological storage potential in Switzerland is still associated with large uncertainties and it may take 15-20 years for first sites to become operational. The access to storage sites abroad is subject to Switzerland being connected to international transport networks. A third challenge is the “chicken-and-egg” problem due to the immature market situation for CCS and CDR and the underdevelopment of the value chain.

Given these challenges, the tight timeframe, and the high costs mentioned in research challenge 1, it is critical that Switzerland adopt a robust pathway for building and operating a CCUTS infrastructure. A pathway can be said to be robust if uncertainties in the underlying assumptions do not significantly affect its assessment in terms of economic, environmental, and social criteria compared to alternative pathways. These assumptions include regulatory and financial environments, spatial and infrastructure planning, the evolution of the energy system, the amount of CO₂ to be transported (including after 2050 when Switzerland's emissions must become net-negative), the availability and capacity of domestic storage sites, the connection to a European network for transporting and storing CO₂, the dependence on national and international policy decisions, and the efficiencies, costs, and material requirements of the required technologies. Therefore, a robust pathway avoids lock-in effects, reduces the likelihood of

³² <https://sweet-cross.ch/>

³³ <https://www.sweet-cosi.ch/>



stranded assets, preserves room for adaptation, and focuses on “no-regret” applications. In other words, future technical and political developments are more likely to validate than invalidate a robust pathway.

The consortium is challenged to develop robust pathways for building and operating a CCUTS infrastructure in Switzerland and assess them using economic, environmental, and social criteria. In developing robust pathways, the consortium must consider at least one pathway that meets the targets in Table 1-2, the pathway investigated as part of research challenge 1, and the scenarios developed as part of research challenge 3. The costs of these pathways must be compared to the cost estimates from the EP2050+ excursus on negative emission technologies and CCS¹⁸ and the cost analysis of a CCS infrastructure in Switzerland.²² The pathways must include a temporal sequence of decisions (i.e., which stakeholder should take which decision when) and consider the corresponding consequences.

It is essential that the consortium's approach to developing robust pathways takes into account the highly dynamic environment surrounding the net-zero target, i.e., the cantonal, national and international regulatory and financial frameworks and the social and political boundary conditions. The approach chosen by the consortium must embrace the highly dynamic environment through a transdisciplinary and agile design in order to develop reflexivity through recursiveness and to incorporate ongoing developments.³⁴

2.3 Research challenge 3

How can the sustainable potential of Swiss biomass best contribute to the net-zero target as a substitute for GHG-intensive materials, a source of renewable energy, and a source of negative emissions?

Biomass can contribute to the net-zero target as a substitute for GHG-intensive materials (e.g., concrete or steel), as a low-carbon source of energy to substitute fossil fuels, and as a means for CDR. The assimilation of CO₂ from the atmosphere by plants offers a range of options for CDR through forest management, use of wood products, soil management, production of biochar and its application in agricultural and construction activities, and BECCS. The use of wood in a cascade allows for lower resource demand and a longer binding of CO₂.³⁵ CDR approaches on agricultural soils are associated with potential risks and co-benefits (for productivity and biodiversity) that have to be further investigated.^{36,37} Furthermore, the chemical form (e.g., inorganic CO₂ or organic/elemental C) and the location (e.g., agricultural fields or geological reservoirs) can affect the permanence of the carbon sink and thus its long-term climate effect.

To address this research challenge, the consortium is expected to develop a qualitative and quantitative framework that allows the contributions of Swiss biomass to the net-zero target and the trade-offs and conflicts between the various contributions to be assessed. The consortium is expected to use the framework, which must include mass and energy balances, to develop scenarios that explore the different uses of Swiss biomass and assess the scenarios in terms of technical criteria (e.g., contributions to

³⁴ By the end of 2024, the Federal Council will discuss proposals for the regulation of CCS and CDR during the scaling phase (from 2030 to 2050). As part of the preparation for this Federal Council business, FOEN has commissioned a study on the regulation of CCS in Switzerland, which will be published during the application and evaluation phase to this call.

³⁵ Federal Office for the Environment, *Cascade use of wood*, available in German, French, and Italian at <https://www.bafu.admin.ch/bafu/de/home/themen/wald/fachinformationen/waldzustand-und-waldfunktionen/holzproduktion.html>

³⁶ The Federal Council's report on the sequestration of carbon in soils, see <https://www.parlament.ch/centers/eparl/curia/2019/20193639/Bericht%20BR%20D.pdf>, identified among the potential measures the execution of long-term studies on the effects of biochar application on soils. The application of biochar to soils is not subsidized until the positive and negative effects are better understood.

³⁷ Federal Office for the Environment, Federal Office for Agriculture, and Cercle Sol AGIR (2023), *Faktenblatt: Pflanzenkohle in der Schweizer Landwirtschaft - Risiken und Chancen für Boden und Klima*, available at https://www.bafu.admin.ch/dam/bafu/de/dokumente/klima/fachinfo-daten/faktenblatt-pflanzenkohle-2022.pdf.download.pdf/D_Faktenblatt_Pflanzenkohle.pdf



meeting electricity, heat and biofuel demands), economic criteria (e.g., cost, local revenue generation), social (e.g., acceptance), and environmental criteria (e.g., net GHG emissions, biodiversity, soil fertility/quality). This includes for CDR options a differentiation between the effect of carbon removal and emission reduction, and an assessment of the permanence of carbon storage. The cascade use of biomass has to consider the emission reduction as a substitute for GHG-intensive materials and be reconciled with the emission reduction scenarios developed as part of research challenge 1.

The consortium is expected to take existing data on Swiss biomass, such as the sustainable biomass potential from SCCER BIOSWEET³⁸ as a starting point. Further data collection and analysis are within the scope of this call provided that the consortium demonstrates in the proposals that new findings are likely to significantly affect the answers to the research challenge. Studies on how public perception and social acceptance, particularly at the local level, may affect the answers to the research challenge are within the scope of this call. For work conducted on natural systems (e.g., forests and agricultural soils), the consortium is expected to take a holistic approach and to demonstrate in the proposal how they address both risks and co-benefits in a quantitative manner. The work conducted to answer this research challenge must be coordinated with the work conducted by the SWEET Consortium reFuel.ch on the use of animal manure for the production of sustainable fuels and platform chemicals.

2.4 Research challenge 4

How will your consortium make a concrete contribution to the targeted scaling phase between 2030 and 2050 through the further development of existing and novel processes and concepts along the entire CCS and CDR value chain (capture, transport, use, and storage) by increasing their efficiency, reducing their costs, reducing their environmental impacts, and addressing their public perception and social acceptance?

The consortium is expected to implement several CCS and/or CDR projects that will make concrete contributions to the targeted scaling phase. The projects may be supported by additional funds of the SFOE's P+D-programme, as intended for SWEET project portfolios (see Figure 1-1) or build on existing and planned projects financed through alternative means. At least one of the projects must be based on technologies that are presently at a high enough TRL so that they can credibly be brought to TRL 8-9 no later than 2030. The other projects may be based on technologies that are presently at a TRL below 4 (the lowest TRL typically funded by the P+D-programme), provided that there is a credible path to higher TRL and therefore eligibility for P+D-funding before the end of the consortium's duration.

In addition to the P+D projects within its project portfolio, the consortium is encouraged to build on and leverage other projects. Possible candidates for such projects include five projects supported by the Climate Cent Foundation.³⁹ Further larger-scale projects may be implemented under the subsidy scheme for novel climate technologies of the Climate and Innovation Act and the commitment of the waste-incineration sector to commission at least one carbon-capture plant with an annual capacity of at least 100,000 t of CO₂ by 2030.⁴⁰

Consortia must present credible plans that detail which processes will be developed and specify milestones for the amounts of CO₂ captured, transported, used, and stored throughout the consortium's duration. Consortia are free to choose which CDR approaches or segment(s) of the CCS value chain

³⁸ O. Thees, V. Burg, M. Erni, G. Bowman, and R. Lemm (2017), *Biomassepotenziale der Schweiz für die energetische Nutzung. Ergebnisse des Schweizerischen Energiekompetenzzentrums SCCER BIOSWEET*, Report No. 57, Swiss Federal Institute for Forest, Snow, and Landscape Research, available at: <https://www.wsl.ch/de/publikationen/biomassepotenziale-der-schweiz-fuer-die-energetische-nutzung-ergebnisse-des-schweizerischen-energiekompetenzzentrums-sccer-biosweet/>

³⁹ https://www.klimarappen.ch/resources/Media-Release_NET-Projekte_230824.pdf

⁴⁰ Swiss Confederation, *CO₂-Emissions: Agreement between the Confederation and waste-incineration plants* (2022), available in German, French, and Italian at <https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-87605.html>



they focus on. However, the use of CO₂ in this research challenge is restricted to the use in permanent products. In addition, consortia are expected to justify their choices in the pre-proposal in terms of the anticipated reductions of the costs and environmental impacts relative to competing innovative and incumbent approaches. Irrespective of the choice, consortia must provide preliminary cradle-to-grave LCA estimates in terms of GHG emission reduction/removal in an appendix of the pre-proposal. It is encouraged that the development of projects encompasses not only the technological development, but includes the development of business models and plans.

3 Participation

3.1 Need for consortia

Answering the research challenges requires an inter-/transdisciplinary approach. To this end, the research and innovation community has to organise consortia consisting of diverse members, see Figure 3-1, that establish the portfolios of interrelated projects shown in Figure 1-1. A consortium is a network of members that adhere to the rights and obligations set forth in their compulsory consortium agreement. The consortium is managed by a host institution that signs a subsidy contract with the SFOE and represents the consortium to the SFOE. The subsidy contract ensures, among other things, the flow of funds via the host institution to the members. As indicated by Figure 3-1, the members are expected to work closely with so-called collaboration partners, which finance their activities not through SWEET funding but through own and/or third-party contributions. The consortium and collaboration partners together form the so-called extended consortium. The SFOE expects that the extended consortium includes the stakeholders that are most relevant to the call's guiding theme and a consortium's expected outcomes and objectives and that the stakeholders are closely involved in joint research and co-production of knowledge either as members or collaboration partners.

3.2 Consortium structure

3.2.1 Host institution

The host institution must be a Swiss institution of higher education entitled to receive SFOE funding⁴¹ and is the legal entity applying for funding on behalf of the consortium. The host institution must provide a letter of commitment to demonstrate its commitment to fulfil the obligations associated with its role in the consortium (see Section 4.2.2). The obligations include appointing one of its employees as the consortium coordinator (see Section 3.2.4) and, if the consortium is awarded funding, negotiating a subsidy contract between the host institution and the SFOE as well as negotiating a consortium agreement with all the member institutions. The consortium agreement must be signed by all the members and submitted to the SFOE before the SFOE will sign the subsidy contract.

Upon request and SFOE approval, the host institution may change during the application and implementation phases, provided that the new host institution makes similar commitments and that all contracts are reassigned.

⁴¹ All institutions pursuant to Article 4 letter c of the [Federal Act on the Promotion of Research and Innovation \(RIPA; SR 420.1\)](#) are eligible as host institutions.

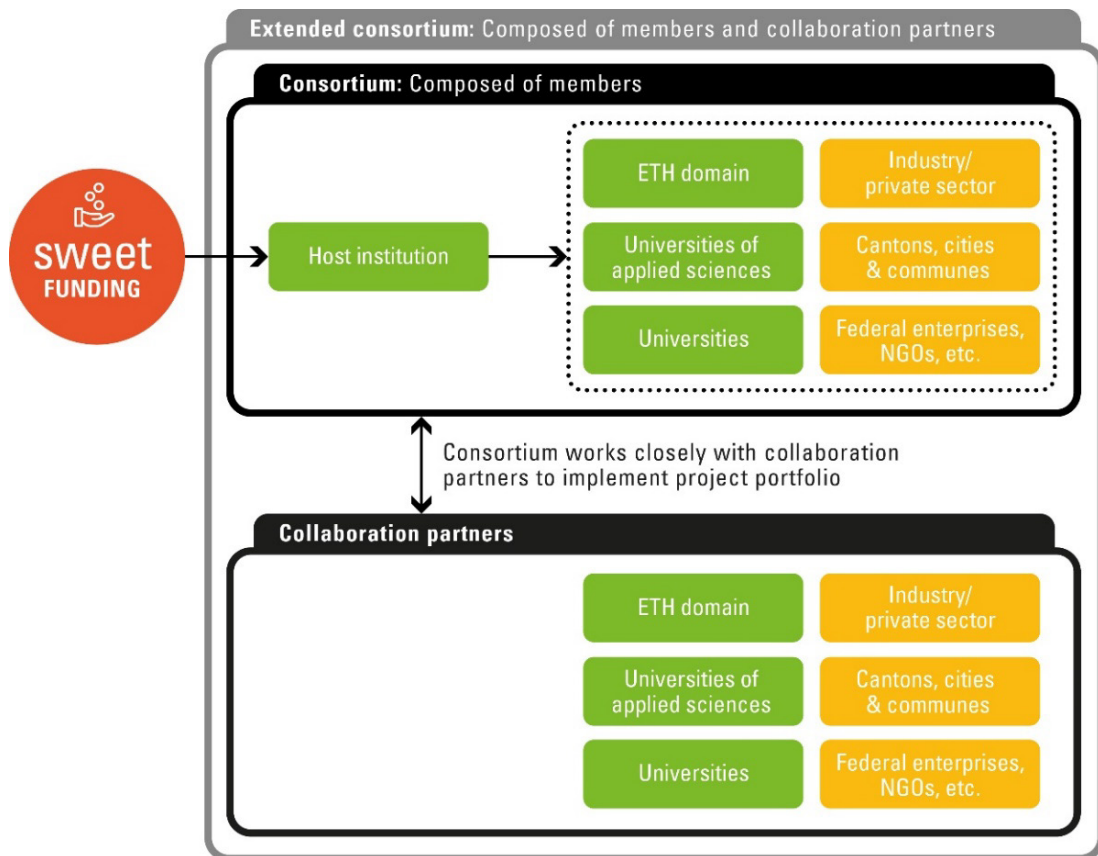


Figure 3-1: SWEET consortia are composed of members that interact with collaboration partners to implement the portfolio of interrelated projects. SWEET funding flows to the consortium members via the host institution. The consortium and collaboration partners together form the so-called extended consortium.

3.2.2 Members

Partners that apply for SWEET funding through the consortium are called members. SWEET funding is primarily envisaged for research and innovation activities that are undertaken by Swiss institutions of higher education and non-commercial research organisations. The eligibility of other institutions is summarised in Table 3-1. Institutions that are not eligible for SWEET funding may participate in a consortium's activities as collaboration partners. It must be noted that in the SWEET programme, the term "member" appears in three ways, see Table 3-2.

Members may join more than one consortium provided that they inform the coordinators of all affected consortia. Members may not offer substantially the same contribution to more than one consortium, with the exception of the KTT expert (see Section 3.2.4). Each member entity must submit a letter of intent with the pre-proposal and a letter of commitment with the full proposal (see Sections 4.2.2 and 4.3.2).



Table 3-1: Eligibility of various institutions for SWEET funding.

Origin	Institution	Eligible for SWEET funding?
Swiss	Institution of higher education Non-commercial research organization Private for-profit institution Professional association Enterprise associated with the Swiss confederation Canton, city, commune, district, region Non-governmental organization Citizen association Cooperative	Yes
	Federal department and its administrative units	No
	Other	Check with the SWEET Office
Foreign	Institution of higher education Non-commercial research organization Private for-profit institution	Yes, provided that their contributions are essential to achieving the consortium's objectives, cannot be provided by Swiss members, and generate added value in Switzerland. The inclusion of such institutions must be justified in the notification of intent to submit a pre-proposal (see Section 4.1) and is subject to approval by the SFOE.
	Other	No

Upon award, all member institutions become beneficiaries of the subsidy contract between the SFOE and the host institution. During the application phase, member institutions, member entities, and members may change subject to the restrictions given in Section 5.2.2. Similarly, during the consortium's implementation phase, member institutions, member entities, and members may change subject to approval by the monitoring panel and the SFOE.

Table 3-2: Overview of the three ways in which the term "member" appears in the SWEET programme.

Term	Meaning	Relevance and comments
Member institution	An organisation such as a university, institute of the ETH domain, university of applied science, private-sector company, etc.	The member institution must be a legal entity with due representation. The letter of commitment by the host institution must be on the institution's official stationery and be signed by authorised representatives of the institution, see Section 4.2.2.
Member entity	The smallest unit within the member institution, such as a department, an institute, a laboratory, or a group, that individually reports its costs to the member institution.	If the member institution is not organised into units, the member entity is identical to the member institution. In the proposals, the requested SWEET funding as well as own and third-party contributions must be reported at the level of member entities. Letters of intent and commitment by member entities must be on the institution's official stationery and be signed by authorised representatives of the member entity, see Sections 4.2.2 and 4.3.2.
Member	A person who is employed by the member institution and who leads the member entity's contributions to the consortium. (In academic institutions, this person is often called the principal investigator.)	The potential financial award to the consortium is linked to the number of members, see Section 3.4.1. In Table 1-2 of the proposals, each member entity is represented by one member.



3.2.3 Collaboration partners

Partners that do not apply for SWEET funding may participate in the work programme of the consortium as collaboration partners. Collaboration partners must finance their activities from own and/or third-party contributions. Collaboration partners may join more than one consortium. Changes in the collaboration partners must be reported to the SFOE.

3.2.4 Key positions

The coordinator represents the consortium on behalf of both the consortium and the host institution and serves as the single point of contact for the SFOE regarding all administrative, legal, and financial matters. The coordinator is responsible and accountable for the preparation and submission of the pre-proposal and the full proposal. Once the subsidy contract is signed, the coordinator is responsible and accountable for the administrative and financial management of the consortium, which includes the preparation and timely submission of the yearly reporting documents.

The consortium must appoint a member to serve as the so-called integration expert who is responsible for the knowledge integration between the WPs (i.e., the interrelationships in the project portfolio) as well as the knowledge integration with other SWEET consortia and the CROSS activity. The designation “integration expert”⁴² is used to indicate that the responsibilities go beyond those of a technical manager, because ensuring knowledge integration will require know-how about how to constructively combine the distinct perspectives from various scientific disciplines as well as how to effectively operate at the intersection of science and society. While it is desirable that the integration expert has a scientific background, it is essential that the expert is open to all scientific disciplines represented in the consortium (and the different approaches adopted by them) and seeks and promotes connections between the disciplines specifically as well as between science and society generally.

The consortium must appoint a member to serve as the so-called KTT expert who is responsible for the communication, dissemination, and exploitation of the outputs of the extended consortium. The KTT expert involves relevant stakeholders from an early stage to ensure that the outputs are fully exploited and thereby develop an impact on reaching the goals of Switzerland’s Energy Strategy 2050 and long-term climate strategy. The KTT expert is expected to have at least 2 years of experience with KTT, preferably through activities funded by programmes that bear some similarities to SWEET, e.g., the Swiss Competence Centers for Energy Research and the Flagship Initiative by Innosuisse, the National Research Programmes and National Centres of Competence in Research by the Swiss National Science Foundation, or the Horizon 2020 and Horizon Europe programmes of the European Union. Experience gathered through private institutions that specialise in KTT is also considered to be relevant.

The SFOE expects the coordinator and the integration and KTT experts to collaborate closely. With reference to Figure 3-2 and expressed in simple terms, the integration expert is responsible for the communication within the extended consortium, with other consortia, and the CROSS activity, whereas the KTT expert is responsible for the communication, dissemination, and exploitation of the outputs of the extended consortium. Because the profiles of the three positions are very different, the consortium must fill them with separate persons.

⁴² <https://itd-alliance.org/integration-experts/>

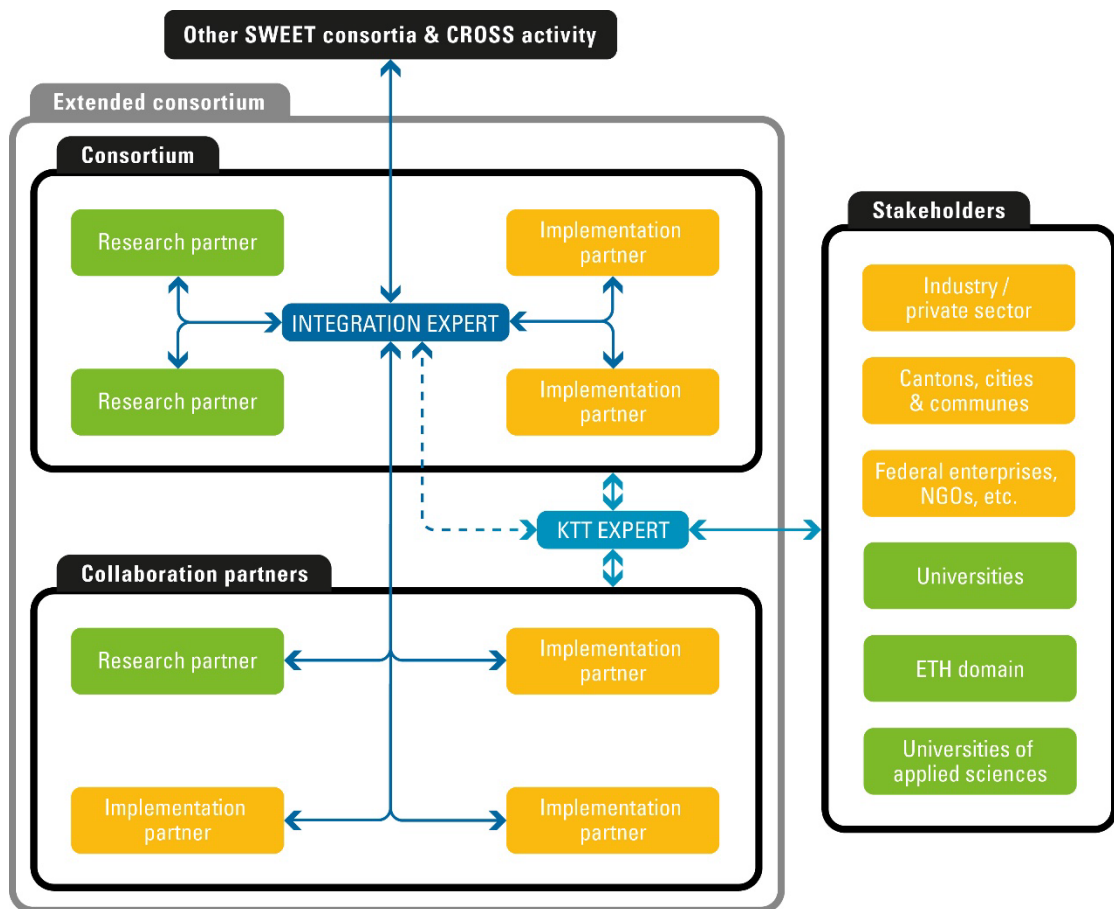


Figure 3-2: Schematic illustration of the roles of the integration and KTT experts. The terms “research partner” and “implementation partner” follow Figure 1-1. The numbers and relative proportions of research and implementation partners in the consortium, the collaboration partners, and stakeholders are indicative only. The arrows between the integration expert and the research and implementation partners indicates the knowledge integration. For simplicity, no arrows are drawn among research partners and implementation partners, but this should not be taken to imply that all communication takes place through the integration expert. The close collaboration between the integration and KTT experts is reflected by the dashed arrow. To avoid cluttering the figure, the coordinator is not depicted, but as stated in Section 3.2.4, the coordinator is expected to collaborate closely with the integration and KTT experts.

3.3 Consortium requirements

A consortium must:

1. Be led by 1 host institution.
2. Consist of at least 5 different member institutions.
3. Consist of at least:
 - a. 1 member institution from Swiss universities or institutes of the ETH domain (ETH Zurich, EPF Lausanne, Empa, Eawag, PSI, and WSL),
 - b. 1 member institution from Swiss universities of applied sciences,
 - c. 2 member institutions from Swiss industry and/or the Swiss private sector.



In addition:

1. The extended consortium should consist of members and collaboration partners that span the innovation system (see Figure 1-2) and thereby enable an inter-/transdisciplinary approach commensurate with the research challenges.
2. The consortium should be composed of members that deliver complementary and significant contributions to the work programme and receive an adequate share of the potential financial award.
3. The consortium should be gender diverse⁴³ and reflect Switzerland's diversity in terms of languages and regions.

3.4 Funding rules

The SFOE funds in accordance with the principle of subsidiarity: To ensure that the overall funding is sufficient for the work programme of the consortium, members and collaboration partners supplement the requested SWEET funding, each according to its abilities, with own and third-party contributions:

- Own contributions are financial contributions (cash or in-kind) from members and collaboration partners.
- Third-party contributions are financial contributions (cash or in-kind) from sources other than members, collaboration partners, and the Federal Administration (e.g., Federal Offices, Innosuisse, and the Swiss National Science Foundation).⁴⁴

The sum of own and third-party contributions from members and collaboration partners enters into the evaluation, see Section 5.2.2. The consortium has the right to reallocate SWEET funds to its members provided that the funding rules are adhered to and that the reallocation is transparent and traceable.

3.4.1 Core budget

The potential financial award as specified in the subsidy contract is referred to as the core budget and represents the SFOE's funding for research projects as well as management and coordination, integration, and KTT activities. To encourage the formation of compact consortia, the core budget is tied to the number of members N ,

$$\text{core budget in Mio. CHF} = \begin{cases} 18.4 & \text{if } N \leq 17, \\ 18.4[1 - 0.045(N - 17)] & \text{if } N > 17. \end{cases}$$

The number of members must be equal to the number of entries in Table 1-2 of the pre-proposal and full-proposal templates. The core budget is subject to annual parliamentary appropriations and the schedule of payments agreed to in the subsidy contract. The core budget cannot be revised to higher amounts.

Because the SFOE provides a supplementary budget, see Section 3.4.2, consortia are not encouraged to reserve part of the core budget for unplanned activities. If a consortium nevertheless creates its own supplementary budget anyway, the consortium must (a) limit that budget to no more than 10% of the core budget, (b) describe in the pre-proposal and the full proposal the processes by which funds from the budget are requested and granted or refused, and (c) describe how the SFOE and the monitoring

⁴³ The Swiss Confederation attaches great importance to the adequate representation of women in management positions. Through its involvement in the Technology Collaboration Programme "Clean Energy Education and Empowerment (C3E)" (<http://www.c3e-international.org>) of the International Energy Agency (IEA), the SFOE actively supports the development of a community of women leaders in the field of clean energy across various sectors.

⁴⁴ Contributions from collaboration partners should be declared by them as own contributions and not by members as third-party contributions.



panel (see Section 6) will be involved in these processes and in particular the decision whether a request is granted or refused. The SFOE reserves the right to require changes to or to veto a consortium's plans for its own supplementary budget.

P+D projects in the portfolio are not funded through the core budget, but may be funded through a separate application to the SFOE's P+D programme, see Section 3.4.3.

3.4.2 Supplementary budget

Subject to the availability of additional funds, the SFOE may grant a supplementary budget in response to a request by the consortium or by the SWEET Office. The supplementary budget is limited to 10% of the core budget over the term of the consortium. The SWEET Supplementary Budget Guideline describes what the supplementary budget may be used for as well as how and when a consortium may request it.⁴⁵

3.4.3 Funding for pilot and demonstration projects

Through the SFOE's P+D programme,⁴⁶ additional funds are available to support the P+D projects in the project portfolio. To apply for these funds, legal and budgetary considerations require that a separate formal application be submitted, just like for P+D projects that are not part of the project portfolio. The process by which P+D projects are handled in the SWEET programme is shown in Figure 3-3.

The following points should be noted:

- Consortia are not expected to propose fully elaborated P+D projects in the pre-proposal and the full proposal. Instead, for the P+D projects that are anticipated to start within the first three years, the proposals should contain conceptual descriptions akin to a P+D project note, with each P+D project forming a separate WP. Once the activities of the consortium are under way and a P+D project has been fully elaborated, the above-mentioned formal application for funding must be submitted to the P+D programme.
- The conceptual descriptions of the P+D projects will be assessed by the evaluation panel with particular attention on whether they are well integrated into the project portfolio, i.e., whether the interrelationships with the research projects and other P+D projects are clear and strong. In addition, the SFOE will assess whether the proposed P+D projects meet the basic requirements of the P+D programme. Favourable assessments of these projects do not guarantee funding by the P+D programme, however. Any decisions by the SFOE on P+D projects are subject to legal hearings and formal objections.
- Depending on whether a conceptual description of a P+D project was contained in the full proposal, the evaluation of the interrelationship with other projects in the portfolio, and the assessment of whether the basic requirements of the P+D programme have been met, anticipated P+D projects are initially assigned to one of three categories, see Figure 3-3. In subsequent steps, revised conceptual descriptions or project proposals determine whether a P+D project will be integrated into the SWEET project portfolio.

The WPs dedicated to P+D projects must not contain tasks for the elaboration of the projects and the preparation of the applications for funding. However, consortia may choose to include such tasks in the WPs on management and coordination, see Section 3.4.4, in which case they must include the submission of the application for funding as a deliverable of that WP.

⁴⁵ <https://pubdb.bfe.admin.ch/de/publication/download/11357>

⁴⁶ <https://www.bfe.admin.ch/bfe/en/home/research-and-cleantech/pilot-and-demonstration-programme.html>

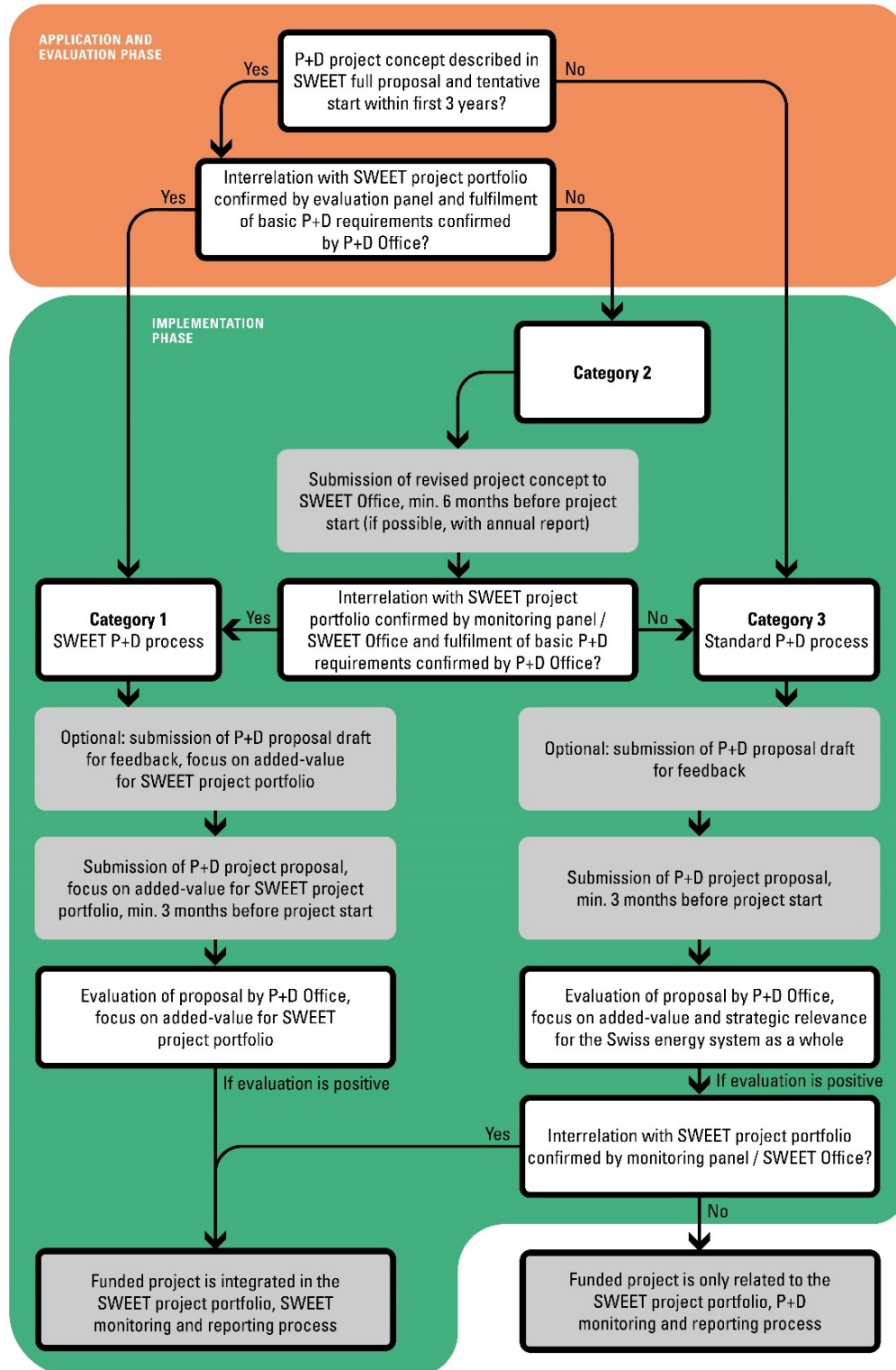


Figure 3-3: Overview of the process by which P+D projects are handled in the SWEET programme.



3.4.4 Further particulars

In preparing their budgets, consortia must take into account the following:

- Only the costs actually incurred and that are absolutely necessary for the fulfilment of the work programme are eligible for funding.⁴⁷ Costs incurred before the start date specified in the subsidy contract are not eligible for funding.⁴⁸
- The cumulation of federal financial assistance to fund a project is inadmissible if the legal provisions or rules of any of the concerned funding instruments are breached. For instance, if funding from one instrument has been secured and that assistance is sufficient for the project to go ahead, applying for assistance from other instruments for the same project would result in an inadmissible cumulation.⁴⁹ Similarly, an inadmissible cumulation would occur if the maximum funding rate of one instrument is violated by the assistance from other instruments. To prevent inadmissible cumulations, members that seek financial assistance from several federal instruments must clearly disclose all sources of financing and inform all concerned authorities.⁵⁰
- The WPs associated with research projects, management and coordination, integration, and KTT must be fully funded by the core budget, own contributions, and third-party contributions and be independent of the outputs of unfunded activities.⁵¹
- Table 3-3 lists restrictions on the maximum funding level and share of the core budget depending on the funding source and WP. The eligibilities of cost types by SWEET funding as well as own and third-party contributions are specified in Table 3-4.

There is no entitlement to funding.

Table 3-3: Restrictions on the maximum funding of WPs and the share of the core budget depending on the funding source.

Funding source	Work packages	Maximum funding level	Share of core budget
SWEET programme	Research projects	TRL 1-4: 100% TRL 5 & 6: less than 100% SSH: 100%	Max. 85% (sum of all research projects)
	Management and coordination	100%	Min. 5%
	Integration	100%	Min. 5%
	KTT	100%	Min. 5%
P+D programme	P+D projects	TRL 4-9: Max. 50% of non-amortisable costs ⁵²	n/a

⁴⁷ Article 14 para. 1 of the [Federal Subsidies Act \(SR 616.1\)](#).

⁴⁸ Article 53 para. 1 of the [Federal Energy Act \(SR 730.0\)](#) and Article 26 para. 1 of the [Federal Subsidies Act \(SR 616.1\)](#).

⁴⁹ Article 6 letter c and Article 7 letters c and d of the [Federal Subsidies Act \(SR 616.1\)](#).

⁵⁰ Article 12 of the [Federal Subsidies Act \(SR 616.1\)](#).

⁵¹ In the pre-proposal and full proposal, the coordinator must declare that each member has the financial capacity to carry out its tasks within the work programme. In the subsidy contract, the grant recipient and coordinator must confirm that the total consortium funding, consisting of the core budget plus own and third-party contributions, is fully secured and sufficient to carry out the work programme (except for the P+D projects).

⁵² See Appendix II of the SFOE's "Directive on the submission and evaluation of applications for financial support of energy research, pilot and demonstration projects and sandbox projects". The currently valid directive is dated 20.12.2023 and available at <https://pubdb.bfe.admin.ch/en/publication/download/9952>.



Table 3-4: Eligibilities of cost types by SWEET funding and own and third-party contributions.

Cost		Eligibilities by funding and contribution source		
Type	Definition and restrictions	SWEET funding	Own contrib.	Third-party contrib.
Internal costs	Internal costs are personnel costs. The maximum contribution of SWEET funding to internal costs must follow specified hourly rates. ⁵³ VAT cannot be included.	Yes	Yes	Yes
External costs	External costs include: <ul style="list-style-type: none"> • equipment (e.g., devices and consumables), • external services (e.g., subcontracts), • expenses (e.g., travel, conference fees, gold open-access fees), and • other costs (e.g., licenses). The maximum contribution of SWEET funding to equipment purchases must correspond to the actual use of the equipment in SWEET projects. The remainder can be declared as own contribution. VAT can be included.	Yes	Yes	Yes
Overhead	Cannot be covered through SWEET funding. ⁵⁴ The following may be reported as costs covered by own and third-party contributions: <ul style="list-style-type: none"> • Internal costs for administrative personnel, which must be calculated not as a fixed percentage of the sum of internal and external costs, but by multiplying the personnel hours by the specified hourly rates. • External costs not specifically related to the fulfilment of the work programme, e.g., costs related to the maintenance of standard laboratory facilities and standard consumables. 	No	Yes	Yes
Depreciation	Cannot be covered by SWEET funding. ⁵⁵	No	No	No
Interest on capital costs	Cannot be covered by SWEET funding. ⁵⁶	No	No	No

3.5 Data availability

3.5.1 Open science

The SFOE subscribes to the notion of Open Science and expects that results and data generated by funded projects are publicly accessible. Should legal restrictions prevent public access to the data as originally generated, the consortium is expected to create a publicly accessible version through aggregation, anonymization, or normalization. Furthermore, the consortium is encouraged to publish data that is of national interest on the Swiss public administration's central portal for open government data.⁵⁷ In the full proposal, the consortium will need to present a data management plan.

Measures must be included to provide open access (free online access, such as the gold model) to peer-reviewed scientific publications that result from the project.

⁵³ See Appendix VII of the directive cited in footnote 52.

⁵⁴ Article 14 para. 1 of the [Federal Subsidy Act \(SR 616.1\)](#).

⁵⁵ Article 14 para. 3 of the [Federal Subsidy Act \(SR 616.1\)](#).

⁵⁶ Article 14 para. 2 of the [Federal Subsidy Act \(SR 616.1\)](#).

⁵⁷ <https://opendata.swiss/en>. The SFOE can be consulted at ogd@bfe.admin.ch for advice about publishing data on the portal.



When life cycle inventories (LCI) are elaborated or updated as part of the work programme, they must be submitted in the format of the DETEC database based on ecoinvent v2.2 (ecoSpold v1, including metadata, quantified uncertainty, and technical report) for reasons of transparency and comparability. They can then be integrated into the federal administration's DETEC database so that they can subsequently be published free of charge in accordance with federal guidelines.

3.5.2 ARAMIS publication

By signing the pre-proposal on behalf of all members and collaboration partners, the consortium coordinator declares that they agree to the publication and distribution of the findings gained from the project in compliance with the Federal Act on Freedom of Information in the Administration.⁵⁸ Specifically, final reports and the main project information will be published on the ARAMIS information platform⁵⁹ and, if deemed beneficial, on the geoportal of the Confederation.⁶⁰

4 Submission

4.1 Notification of intent to submit a pre-proposal

Consortia that intend to submit a pre-proposal must inform the SFOE by sending a notification of intent to submit to sweet@bfe.admin.ch no later than **8 May 2024**. The notification must be prepared in English using the template that is available on the [SWEET website](#). The SFOE will acknowledge having received the notifications by contacting the coordinators named in the notifications.

The notification includes a section that must be completed if the consortium wishes to include foreign member institutions (see Section 3.2.2 and the conditions in Table 3-1). The SFOE will strive to inform the coordinator within 10 working days whether the foreign institutions are approved.

The notification is mandatory, i.e., if a consortium did not submit a notification by the deadline given above, its pre-proposal will fail the admissibility check and hence not be evaluated (see Section 5.1). However, the notification is not binding, i.e., a consortium may choose not to submit a pre-proposal although it had previously notified the SFOE of its intention to do so.

4.2 Pre-proposal stage

At the pre-proposal stage, a complete application must contain (with *Acronym* denoting the consortium's acronym):

1. A Microsoft Word document containing the pre-proposal, named *Acronym_preproposal*.
2. A pdf document containing the pre-proposal, named *Acronym_preproposal*.
3. A pdf document containing all the letters, named *Acronym_preletters*.
4. A Microsoft Excel document containing the pre-proposal budget, named *Acronym_prebudget*.
5. A pdf document containing the curricula vitae of the coordinator, the integration expert, and the KTT expert, named *Acronym_preCVs*.

Coordinators must submit the application to sweet@bfe.admin.ch no later than **3 July 2024 at 12:00 noon CET**. The SFOE will acknowledge having received the application by informing the coordinators.

⁵⁸ <https://www.fedlex.admin.ch/eli/cc/2006/355/en>

⁵⁹ <http://www.aramis.admin.ch>

⁶⁰ <http://map.geo.admin.ch>



If the size of the complete application exceeds 20 MB, it must be submitted via the file transfer system of the Swiss federal administration (www.filetransfer.admin.ch). To receive the required access credentials, the SWEET Office should be contacted well in advance of the submission deadline.

4.2.1 Pre-proposal

The pre-proposal must be prepared in English using the template that is available on the [SWEET website](#). The font, font size, line spacing, and margins must not be changed, otherwise the pre-proposal will not be considered for evaluation. Furthermore, the page limits specified in the template must be obeyed. Content that exceeds a specified limit or that was not specifically requested will be removed before the pre-proposal is forwarded to the evaluation panel.

4.2.2 Letters of commitment and intent

The host institution must submit a letter of commitment whereas members must submit letters of intent. The letters must be printed on the host institution's or member entities' official stationery, be addressed to the SFOE, and be signed by authorised representatives.

The letter of commitment must demonstrate the host institution's commitment to fulfil its obligations (see Section 3.2.1). Since the host institution will be the contractual partner of the SFOE, the commitment must be confirmed by the institution's board. The letter must contain the full name and contact information of the person who is authorised to act as the consortium coordinator.

By submitting letters of intent, members express their intent to contribute the work programme should the consortium be awarded funding. The letters must include a list of the WPs that the members intend to contribute to and succinctly describe the contributions for each WP. The requested SWEET funding as well as the own and third-party contributions must be specified in the letters.

See Appendix A for mandatory sections that must be contained in the letters.

Collaboration partners are not required to submit letters of commitment or intent. It is the responsibility of the host institution to secure appropriate letters from collaboration partners, especially if their contributions are critical to the consortium's work programme.

4.2.3 Budget workbook

The budget workbook must be prepared using the template that is available on the [SWEET website](#). The built-in tables and formulas must not be changed. The budget workbook includes the research projects as well as the management and coordination, integration, and the KTT activities. The budget of the P+D projects are not described in the budget workbook, only an estimation is provided.

4.2.4 Curricula vitae

The coordinator as well as the integration and KTT experts must provide a one-A4 page curriculum vitae (CV) that includes:

- A list of achievements in the last five years relevant to the guiding theme of this call, e.g., publications, products, and services (e.g., widely used datasets or software).
- A list of the previous projects or activities in the last five years relevant to the guiding theme of this call and their positions in the consortium.

The consortium is encouraged to create its own CV template.



4.3 Full-proposal stage

At the full-proposal stage, a complete application must contain:

1. A Microsoft Word document containing the full proposal, named *Acronym_full_proposal*.
2. A pdf document containing the full proposal, named *Acronym_full_proposal*.
3. A pdf document containing the letters of commitment, named *Acronym_letters*.
4. A Microsoft Excel document containing the full-proposal budget, named *Acronym_budget*.
5. A pdf document containing the curricula vitae, named *Acronym_CVs*.

Coordinators must submit the application to sweet@bfe.admin.ch. The submission deadline will be communicated to the coordinators of the consortia that will be invited to submit full proposals. The SFOE will acknowledge having received the application by informing the coordinators.

If the size of the complete application exceeds 20 MB, it must be submitted via the file transfer system of the Swiss federal administration (www.filetransfer.admin.ch). To receive the required access credentials, the SWEET Office should be contacted well in advance of the submission deadline.

4.3.1 Full proposal

The full proposal must be prepared in English using the template that will be made available to the coordinators of the consortia that will be invited to submit full proposals. The font, font size, line spacing, and margins must not be changed, otherwise the full proposal will not be considered for evaluation. Furthermore, the page limits specified in the template must be obeyed. Content that exceeds a specified limit or that was not specifically requested will be removed before the full proposal is forwarded to the evaluation panel.

4.3.2 Letters of commitment

The host institution and all member entities must submit letters of commitment. The letters must be printed on the host institution's or member entities' stationery, be addressed to the SFOE, and be signed by authorised representatives.

The letter of commitment of the host institution should be identical to that submitted with the pre-proposal (see Section 4.2.2), except for possible updates to its commitments.

By submitting a letter of commitment, members commit to contributing to the work programme should the consortium be awarded funding. The letter must include a list of the WPs that the member commits to contribute to and succinctly describe the contributions for each WP. The requested SWEET funding as well as the own and third-party contributions must be specified in the letter.

See Appendix A for mandatory sections that must be contained in the letters.

Collaboration partners are not required to submit letters of commitment or intent. It is the responsibility of the host institution to secure appropriate letters from collaboration partners, especially if their contributions are critical to the consortium's work programme.

4.3.3 Budget workbook

The budget workbook must be prepared using the template that will be made available to the coordinators of the consortia that will be invited to submit full proposals. Compared to the budget workbook at the pre-proposal stage, the budget workbook at the full-proposal stage will be more detailed. The built-in tables and formulas must not be changed. The budget workbook includes the research projects as



well as the management and coordination, integration, and the KTT activities. The budget of the P+D projects are not described in the budget workbook, only an estimation is provided.

4.3.4 Curricula vitae

The coordinator, the integration and KTT experts, members, and WP leaders must provide a one-A4 page CV that includes:

- A list of achievements in the last five years relevant to the guiding theme of this call, e.g., publications, products, and services (e.g., widely used datasets or software).
- A list of the previous projects or activities in the last five years relevant to the guiding theme of this call and their positions in the consortium.

The consortium is encouraged to create its own CV template.

4.4 **Data protection**

Proposals submitted in response to this call will be treated confidentially. They will be checked by the SFOE and evaluated by an expert panel. Following the selection of a consortium for funding, the proposals will be studied by the SFOE and the monitoring panel (see Section 6).

Proposals and evaluation reports will be stored on secure servers. The experts will be required to sign declarations concerning confidentiality and conflicts of interest before they will be granted permission to access proposals.

By submitting proposals, consortia agree to them being forwarded to experts for the purposes of evaluation and monitoring and for purposes related to the further development of the SWEET programme.

5 **Evaluation**

5.1 **Admissibility and eligibility check by the SFOE**

The SFOE will check all applications for admissibility (completeness of the application and satisfaction of pre-proposal requirements) and eligibility (satisfaction of consortium and member requirements) prior to forwarding the application to the expert panel. An application is admissible and eligible if all of the questions in Table 5-1 have been answered with “yes”.

If any admissibility and eligibility criteria are not fulfilled, the application will be rejected and not evaluated. The SFOE will inform the coordinator of the rejected application in writing and state which of the criteria were not met.

Table 5-1: The admissibility and eligibility criteria.

Admissibility		
A1	Pre-proposal stage only: Did the consortium notify the SFOE of its intention to submit a pre-proposal and did it do so by the deadline given in the call text?	See Section 4.1
A2	Was the application received before the deadline?	See Section 1.3
A3	Is the application complete?	See Sections 4.2 and 4.3
A4	Are the pre-/full proposal and the budget prepared with the correct templates and formatting?	See Sections 4.2.1 and 4.3.1
A5	Is the core budget consistent with the number of member entities?	See Section 3.4.1



A6	Did the host institution submit a duly signed letter of commitment with the mandatory content?	See Section 4.2.2
A7	Pre-proposal stage: Did each member submit a letter of intent with the mandatory content? Full-proposal stage: Did each member submit a letter of commitment with the mandatory content?	See Sections 4.2.2 and 4.3.2
A8	Is at least 5% of the core budget allocated to the WP on management and coordination?	See Table 3-3
A9	Is at least 5% of the core budget allocated to the WP on integration?	See Table 3-3
A10	Is at least 5% of the core budget allocated to the WP on KTT?	See Table 3-3
A11	Have all questions in the self-declaration section of the pre-/full proposal been answered positively?	See templates
Eligibility		
E1	Is the host institution entitled to receive SFOE funding and has one consortium coordinator been appointed on its behalf?	See Section 3.2.1
E2	Does the consortium consist of at least 5 different member institutions?	See Section 3.3
E3	Does the consortium consist of at least (a) 1 member entity from Swiss universities or an institute of the ETH domain, (b) 1 member entity from Swiss universities of applied sciences, and (c) 2 member entities from Swiss industry/private sector?	See Section 3.3
E4	Did the SFOE approve all foreign members?	See Table 3-1
E5	Have the key positions been filled with 3 different persons?	See Section 3.2.4

5.2 Evaluation by the expert panel

Admissible and eligible pre-proposals and full proposals will be evaluated by an independent panel appointed by the SFOE. The panel will consist of recognised experts from fields relevant to this call.

5.2.1 Evaluation criteria

Pre-proposals and full proposals will be evaluated according to the criteria shown in Table 5-2.

Table 5-2: Evaluation criteria and their weights.

Criterion 1: Ambition		Weight: 30%
Section 2: Preliminary stakeholder analysis		a. Stakeholder analysis is appropriate b. Stakeholders span the innovation system c. Prioritisation of stakeholders is appropriate
Section 3: Ambition	3.1: Expected outcomes	d. Relevance of expected outcomes to research challenges is convincing e. Contributions of expected outcomes to achieving targets of Energy Strategy 2050 and long-term climate strategy are convincing f. Effects of expected outcomes on stakeholders (and vice versa) are convincing g. Choice of indicator(s) to assess progress toward expected outcomes is convincing
	3.2: Objectives	h. Objectives are specific, measurable, and achievable i. Links between objectives and expected outcomes are convincing



	3.3: Potential synergies and overlaps	<ul style="list-style-type: none"> j. Differences and similarities in expected outcomes and objectives are clear k. Potential synergies and their exploitation are convincing l. Potential overlaps and their avoidance are convincing
Criterion 2: Collaboration		Weight: 35%
Section 4: Extended consortium	4.1: Overview	<ul style="list-style-type: none"> a. Extended consortium enables an inter-/transdisciplinary approach commensurate with research challenges b. Extended consortium reflects prioritised list of stakeholders from Section 2 c. Members and collaboration partners complement each other d. Plan to include missing or underrepresented expertise is convincing
	4.2: Key positions	<ul style="list-style-type: none"> e. Expertise and experience of coordinator are appropriate f. Expertise and experience of integration expert are appropriate g. Expertise and experience of KTT expert are appropriate (if KTT expert does not meet minimum requirement on experience: explanation of why expert can nevertheless meet responsibilities is convincing)
Section 5: Collaboration	5.1: Overview	<ul style="list-style-type: none"> h. Explanation of how consortium, including coordinator, integration expert, and KTT expert, will collaborate is convincing i. Coordinator, integration expert, and KTT expert have clearly defined responsibilities and are granted appropriate authorities
	5.2: Management and coordination	<ul style="list-style-type: none"> j. Structures and processes are appropriate to managing an inter-/transdisciplinary collaboration k. Tracking of progress toward expected outcomes is convincing l. Process for ensuring quality of outputs is convincing m. Plan to adapt to changing circumstances and to deal with the flexibility accorded is convincing n. Risk-management plan is convincing (full-proposal stage only) o. Data-management plan is appropriate (full-proposal stage only)
	5.3: Integration	<ul style="list-style-type: none"> p. Integration concept and plan for its periodic update are convincing q. Involvement and incentivisation of extended consortium in all stages of research process is convincing r. Integrations with CROSS activity, other consortia, and other projects are appropriate
	5.4: Knowledge and technology transfer	<ul style="list-style-type: none"> s. KTT concept and plan for its periodic update are convincing t. List of targeted stakeholders and plans for involving and reaching them are convincing u. Indicators for communication, dissemination, and exploitation phases and plan for measuring them are appropriate
Criterion 3: Work programme		Weight: 35%
Section 6: Overarching approach	6.1-6.4: Research challenges	<ul style="list-style-type: none"> a. Overarching approaches to research challenges are convincing b. Approaches to meeting requirements attached to research challenges are complete and convincing
Section 7: Work programme	7.1: Overview	<ul style="list-style-type: none"> c. Interrelationships between work packages are strong d. Approximate schedule of work programme is realistic and most important milestones are appropriate
	7.2-7.7: Work packages	<ul style="list-style-type: none"> e. Objectives are specific, measurable, and achievable f. Links to consortium objectives and expected outcomes are clear g. Approach is appropriate and convincing h. Budget is appropriate given objectives and approach



5.2.2 Pre-proposal stage

Pre-proposals are evaluated in terms of major and minor flaws:

- Major flaws compromise the whole proposal and can be remedied only with substantial effort. Major flaws are divided into two types:
 - A major flaw is considered to be corrigible if the evaluation panel believes that it can be eliminated during the preparation of the full proposal. Corrigible major flaws include, but are not limited to, objectives that are unclear, a lack of expertise in a key area, unclear outcomes and outputs, and unclear collaborations with stakeholders.
 - Otherwise, a major flaw is considered to be incorrigible. Incorrigible major flaws include, but are not limited to, objectives that are not pertinent to the research challenge(s), unsound concepts, a methodology that lacks credibility, and a lack of expertise in several key areas.
- Minor flaws do not compromise the whole proposal and can be remedied in the full proposal without substantial effort.

The evaluation of pre-proposals consists of the following steps:

1. For each of the criteria listed in Table 5-2, the panel assigns a score according to the presence of incorrigible and corrigible major flaws, see Table 5-3. It should be noted that minor flaws do not influence the scores. The panel may assign half-scores.
2. From the scores for each criterion and the associated weights given in Table 5-2, the panel determines the weighted score for each pre-proposal.
3. The panel ranks the pre-proposals according to their weighted scores:
 - a. If two pre-proposals have weighted scores that differ by 0.25 or less, the pre-proposal with the larger sum of own and third-party contributions from members and collaboration partners will be ranked higher.
 - b. If two pre-proposals have weighted scores that differ by 0.25 or less and equal sums of own and third-party contributions from members and collaboration partners, the pre-proposal with the better gender diversity at the levels of coordinator and work-package leaders will be ranked higher.
4. The panel produces a shortlist of those pre-proposals that reach two thresholds:
 - Individual threshold: The score of each criterion must be at least 3.
 - Overall threshold: The scores of the criteria must sum to at least 10.

For this call, at most two pre-proposals will be shortlisted.

5. The SFOE will inform coordinators about their pre-proposal's rank and provide them with an evaluation report that lists the major and minor flaws identified by the panel. The coordinators of the shortlisted pre-proposals will be invited to submit a full proposal and provided with the corresponding templates and instructions.

Table 5-3: Determination of scores for pre-proposals according to the presence of incorrigible and corrigible major flaws.

		Incorrigible major flaws		
		None	Few	Many
Corrigible major flaws	None	5 (excellent)	2 (fair)	1 (poor)
	Few	4 (very good)		
	Many	3 (good)		



The panel's evaluation cannot be rebutted. The coordinators of pre-proposals that are not shortlisted can submit a formal objection within 30 days. After this period, the SFOE's decision to invite the coordinators of the shortlisted pre-proposals to submit full proposals enters into force.

If a pre-proposal is not short-listed, suitably improved and expanded parts of it may be submitted to the research programmes and the P+D programme of the SFOE.

The consortia that have been invited to submit a full proposal will be expected to take into account the feedback contained in the evaluation report. Responses to the feedback and changes to the work programme between the pre-proposal and the full proposal have to be detailed in a dedicated section of the full-proposal template. Changes to the consortia through the addition or departure of member entities will also have to be detailed.

5.2.3 Full-proposal stage

The steps at the full-proposal stage mirror those at the pre-proposal stage. The evaluation is again based on major and minor flaws, but they are defined somewhat differently:

- Major flaws compromise the whole proposal. They could be remedied only with substantial effort during the negotiation or implementation phases, which would result in what would effectively be a new full proposal that would require a re-evaluation. Major flaws include, but are not limited to, objectives that are unclear or not pertinent to the research challenge(s), an unsound concept, a methodology that lacks credibility, a lack of expertise in key areas, an insufficient impact, and an unconvincing KTT strategy.
- Minor flaws do not compromise the whole proposal. They can be remedied without substantial effort during the negotiation or implementation phases and do not require a re-evaluation. Minor flaws include, but are not limited to, unclear details regarding the methods, outputs and outcomes, and inconsistencies in the schedule.

Based on the presence of major and minor flaws, the evaluation panel assigns a score for each criterion according to Table 5-4. In contrast to the pre-proposal stage, minor flaws do influence the score. The panel may again assign half-scores. The thresholds are identical to those at the pre-proposal stage, which means that only full proposal that do not exhibit any major flaws will be shortlisted. The evaluation panel will recommend to the SFOE that the highest-ranked full proposal on the shortlist be funded.

Table 5-4: Determination of scores for full proposals according to the presence of major and minor flaws.

		Major flaws		
		None	Few	Many
Minor flaws	None	5 (excellent)	2 (fair)	1 (poor)
	Few	4 (very good)		
	Many	3 (good)		

In case of a positive funding decision, the SFOE and the host institution will enter the negotiation phase. The evaluation panel may recommend that the consortium address certain points during the negotiation and implementation phases. In addition, the SFOE reserves the right to require additional clarifications and modifications during the negotiation phase. The negotiation phase concludes once the subsidy contract is signed.



In case of a negative funding decision, coordinators can submit a formal objection within 30 days. After this period, the SFOE's decision enters into force. The panel's evaluation cannot be rebutted.

6 Monitoring and reporting

The SFOE will appoint a panel to monitor the consortium, which will include independent experts as well as representatives from the SFOE and the FOEN. Beyond standard reporting such as final reports on research and P+D projects, the consortium will be required to provide annual progress and finance reports. Detailed monitoring guidelines including reporting templates will be provided after the publication of the funding decision. The consortium will be responsible for organizing an annual one-day review meeting (site visit) between the monitoring panel and at least the coordinator, the integration expert, the KTT expert, and the WP leaders. Consortia are expected to set aside appropriate resources for the site visits. Furthermore, consortia are encouraged to organise a public event immediately before the site visit, e.g., a symposium or a conference, at which the extended consortium is present. The SFOE views these events as serving a dual purpose: to inform the monitoring panel in more detail than is possible during the site visit and to inform the broader research and innovation community.

7 Contacts and further information

All questions about this call, including questions about the support provided by td-net and the CROSS activity, must be directed to the SWEET Office:

Swiss Federal Office of Energy
SWEET Office
Section Energy Research and Cleantech
P.O. Box
CH-3003 Berne / Switzerland
sweet@bfe.admin.ch

The questions and answers will be published on the [SWEET website](#) and regularly updated.



Appendix A: Mandatory sections in letters of commitment and intent

The SFOE does not provide complete templates for the letters of commitment and intent, but it does require that the following sections be included in the letters:

Letter of commitment of the host institution

(Insert host institution) commits to hosting the (insert consortium acronym) consortium and has appointed (insert name and contact information) to act as the consortium coordinator. Should the consortium be awarded funding, the host institution commits to negotiating a subsidy contract with the SFOE as well as a consortium agreement with all the member institutions.

Letter of commitment of member entities

(Insert member entity) commits to participating in the (insert consortium acronym) consortium and to contribute as follows:

1. WPx (replace x by work-package number): (Add a succinct description of contribution)
2. WPy (replace y by work-package number): (Add a succinct description of contribution)
3. (Add entries as needed)

These contributions will be financed as follows:

Requested SWEET funding (kCHF)	(Enter amount in kCHF)
Own contributions (kCHF)	(Enter amount in kCHF, enter 0 if none)
Third-party contributions (kCHF)	(Enter amount in kCHF, enter 0 if none)

Letter of intent of member entities

(Insert member entity) intends to participating in the (insert consortium acronym) consortium and to contribute as follows:

1. WPx (replace x by work-package number): (Add a succinct description of contribution)
2. WPy (replace y by work-package number): (Add a succinct description of contribution)
3. (Add entries as needed)

These contributions will be financed as follows:

Requested SWEET funding (kCHF)	(Enter amount in kCHF)
Own contributions (kCHF)	(Enter amount in kCHF, enter 0 if none)
Third-party contributions (kCHF)	(Enter amount in kCHF, enter 0 if none)