Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of the Environment, Transport, Energy and Communications DETEC

Swiss Federal Office of Energy SFOE
Energy Research and Cleantech

SWEET Call 1-2021

Call guideline

The submission deadline for pre-proposals is on Wednesday, 16 June 2021 (12:00 noon CEST).

sweet swiss energy research for the energy transition

Table of Contents

1 Introduction and scope 4

1.1 SWEET – research for the energy transition 4

1.2 Guiding theme of SWEET Call 1-2021: “Living & Working” 6

1.3 The application process 7

2 Objective of SWEET Call 1-2021: the research challenge 8

2.1 Towards sustainable and efficient ways of living and working whilst improving the quality of life 8

2.1.1 Specific challenge 8

2.1.2 Scope 8

2.1.3 Expected impact 9

2.2 Structural requirements for consortia 10

2.2.1 Established living lab 10

2.2.2 Additional (new) living labs 10

2.2.3 Transdisciplinary and holistic approach 10

2.3 Additional funding opportunities 11

3 Rules for participation 12

3.1 Need for consortia 12

3.2 Who can participate and apply? 13

3.2.1 Coordinator 13

3.2.2 Host institution 13

3.2.3 Applicants 13

3.2.4 Cooperation partners 14

3.2.5 New members or new cooperation partners of a consortium 14

3.3 Guidelines for consortia 14

3.4 Consortia timing and duration 15

3.5 Funding rules 15

3.5.1 Core Budget 15

3.5.2 Supplementary budget 15

3.5.3 Funding for pilot and demonstration projects (P+D) 15

3.5.4 Further particulars on funding 16

3.6 Data availability 16

3.6.1 Open access 16

3.6.2 ARAMIS publication 16

4 Application 17

4.1 General instructions regarding the form and structure of the proposal 17

4.2 Pre-proposal template 17

Administrative information and consortium structure (max. 3 p.) 17

Global consortium programme, vision and portfolio description (max. 3 p.) 17

Work packages (max. 1 p./WP) 17
P+D project notes and additional projects (max. 2 p.) 17
Living labs (max. 2 p.) 17
Budget (max. 1 p.) 18
4.3 Accompanying documents 18
4.3.1 Letter of Commitment of the host institution 18
4.3.2 Letters of Interest of applicants, cooperation partners and living lab(s) 18
5 Submission 19
5.1 Submission procedure 19
5.2 Data protection 19
6 Evaluation 20
6.1 Admissibility and eligibility 20
6.2 Evaluation 20
6.2.1 Evaluation process 20
6.2.2 Evaluation criteria 21
6.2.3 Scoring and thresholds 22
6.3 Communication of results and further steps 22
6.4 Tentative schedule 22
6.5 Documentation and forms 22
7 Consortium monitoring and reporting 23
8 Contacts and further information 23

1 Introduction and scope

1.1 SWEET – research for the energy transition

SWEET (SWiss Energy research for the Energy Transition) is a funding programme[1] owned and managed by the Swiss Federal Office of Energy (SFOE). The purpose of SWEET is to fund transdisciplinary research and innovation activities with a focus on Switzerland's energy strategy 2050[2] and thus also on the country's climate policy goals[3]. SWEET targets research and innovation in the domains of energy efficiency, renewable energy, storage, networks, non-technical energy research (e.g. socio-economic or socio-psychological research), security and safety of critical energy infrastructures.

Within these domains, the SFOE in collaboration with the Federal Energy Research Commission CORE set the guiding theme of the current call in the domain of energy efficiency: "Living & Working". Subsequently, following the consultation of various stakeholders including the research and innovation community, the SFOE formulated the actual research challenge to be addressed by SWEET consortia.

It is well understood that research in science and technology as well as in social sciences and humanities is necessary to generate breakthrough innovations for a successful implementation of Switzerland's energy strategy 2050. Moreover, such innovations require a trans- and interdisciplinary approach that also reflects the diversity of Switzerland's research and innovation community. The focus of SWEET lies on application-oriented research, innovation and implementation of research outputs that accelerate the transition to a sustainable and resilient Swiss energy system.

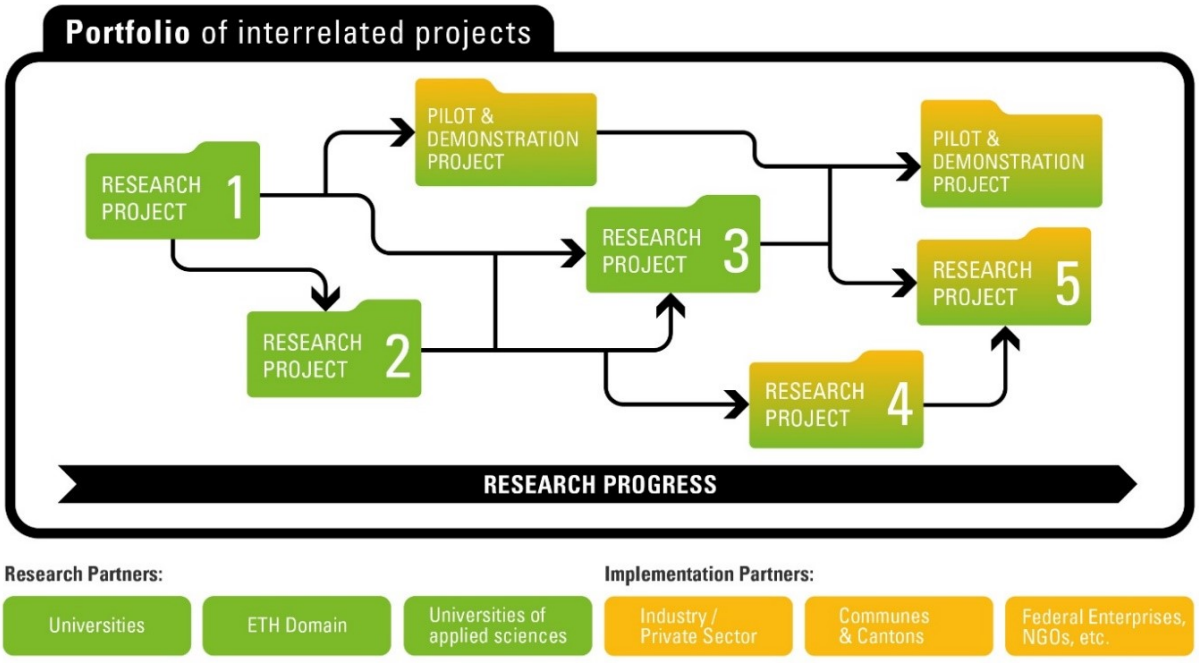

Figure 1-1: Schematic depiction of a portfolio of interrelated SWEET projects. Research and innovation projects lead to outcomes (e.g. additional research, pilot and demonstration projects, evidence-based input for policy development, new products and services) that are of interest to private and public entities.

[1] All information is available online at: https://www.bfe.admin.ch/sweet
[2] https://www.uvek.admin.ch/uvek/en/home/energy/energy-strategy-2050.html
[3] https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/climate-policy.html

Within the framework of SWEET, the SFOE invites consortia to propose portfolios of interrelated research and innovation projects (Figure 1-1). Successful consortia will receive SFOE funding to pursue their projects over an 8 year period. During the term of a consortium, the research challenge described in this call must be addressed holistically by trans- and interdisciplinary teams working on a portfolio of projects that covers significant parts of the innovation system (Figure 1-2).

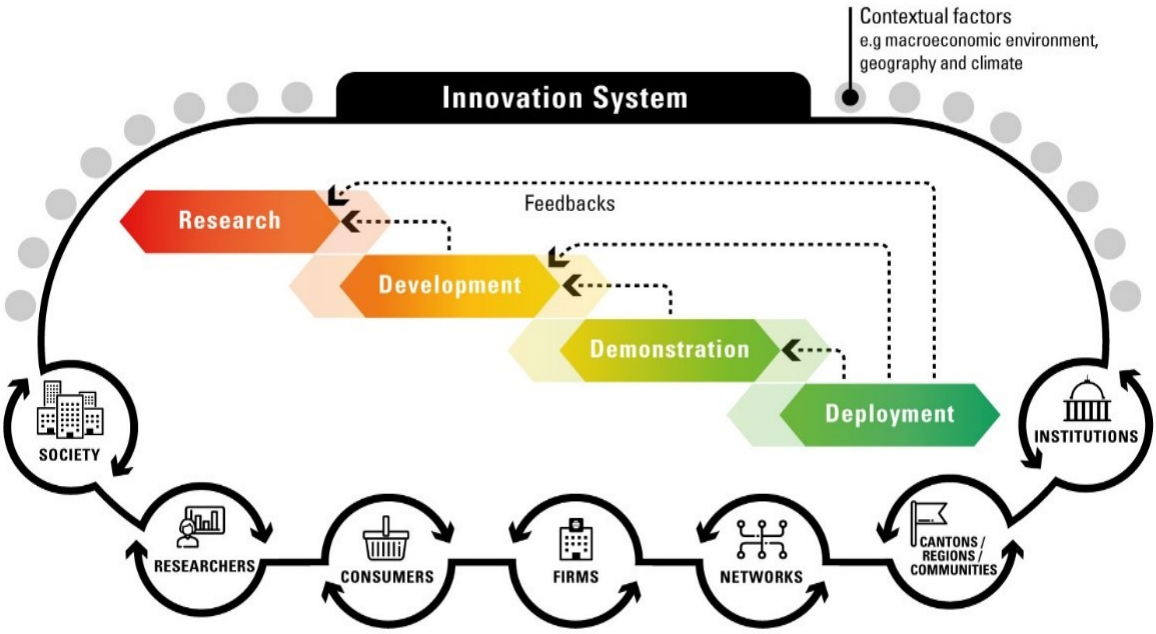

Figure 1-2: A representation of the innovation system[4]. SWEET consortia are expected to generate and exploit multiple feedbacks among the different stages of innovation and their interactions. The expected project portfolio supplies new knowledge from research, development and demonstration for a market place that demands innovations (deployment). Stages of innovation from research to deployment often overlap leading to a more efficient innovation process as well as offering more possibilities for learning, and knowledge and technology spill overs.

SFOE's funding is subject to the principles of subsidiarity. In the context of SWEET this means that partners forming a consortium contribute financially according to their abilities, with SWEET and other funding supplementing the need for financial resources to carry out the work programme of the consortium. Details are described in the chapter on funding rules (Chapter 3.5).

SWEET consortia are managed by a host institution. Preference is given to cooperative consortia comprising researchers, innovators and implementers that cover the best possible range of partners from the higher education sector, research institutes, the private sector as well as the public sector such as cantons, cities and communes. Such cooperative consortia achieve gender balance and reflect Switzerland's diversity in terms of languages and regions. It is expected that every member delivers unique and impactful contributions to the overall success of a consortium.

[4] Adapted from the IEA paper on "Technology Innovation Partnerships" (IEA, 2019), building on graphics and text sourced from GEA (2012), Global Energy Assessment: Towards a Sustainable Energy Future, Cambridge University Press, UK / New York; IIASA, Laxenberg, Austria.

The core of the work programme of a consortium centres on the execution of interrelated research and development as well as pilot and demonstration (P+D) and further implementation projects. Some projects may start as soon as a consortium is launched, while other projects may follow at a later stage as they build on the output of earlier projects.

In view of the expected relevance for energy and climate policy and the likely impact on the implementation of Switzerland's energy strategy 2050, consortia will be closely accompanied by the SFOE with particular attention towards communication, dissemination and exploitation of the results.

1.2 Guiding theme of SWEET Call 1-2021: "Living & Working"

New ways of living and working, changing leisure and mobility behaviour, increasing environmental awareness, business models based on new digital technologies, but also a more restrictive policy framework, have a significant impact on future energy consumption. Large investors and companies are increasingly aligning their business strategy with sustainability, while car producers are switching from fossil fuels to alternative drives. The advancing interconnection of entire districts in terms of mobility and energy and the increasing heat load in cities due to climate change and urban densification require urban and settlement development towards intelligent use of space in urban areas.

In this context, behaviour, social norms, acceptance and changing values of the various actors and market participants play a central role besides technical and regulatory solutions. New forms of working and increasing digitalisation enable to work independently of time and place in many professions. In addition to the now widespread home office, shared-economy creates business models such as co-working, which offers flexible and cost-effective workspace that can be used locally and resource-efficiently. All of this can lead to a significant reduction of commute traffic and associated emissions. New forms of living implemented in modern areas and districts offer great potential for increased energy efficiency and resource conservation. Districts and sites can be developed into decentralized, networked energy systems, thereby taking over energy-related services (incl. electromobility) in the fields of supply, transformation, management, storage and distribution. The focus must be on holistic and systemic aspects and all stakeholders (residents, property managers, businesses and communes/cities) should be involved in a participative way.

The changing consumer behaviour towards increased online purchase of goods and services offers many opportunities, provided goods can be delivered with low emissions owing to highly efficient urban logistics. Leisure traffic remains a major challenge. An ever larger part of the population lives in dense urban areas. At the same time, the need for relaxation in unspoilt nature is increasing, and the private car is currently the preferred mode of transportation to get there. Efficient and sustainable solutions that do not restrict independence, flexibility and individuality of travellers are urgently needed. Urban planners and developers are faced with the challenge of creating attractive local and connected recreational spaces that reduce the need for long journeys.

The aim of this call is to investigate and demonstrate how the overall energy consumption (of buildings, public spaces and mobility) can be minimized and how energy supply and distribution can be ensured efficiently and cost-effectively in geographically clearly defined (sub)urban areas such as neighbourhoods and districts. By coupling the sectors of buildings, mobility and industry and by adapting technology and consumer behaviour, new energy saving potentials should be identified and quantified. In the framework of «living labs», new scientific approaches, concepts, and technologies are to be implemented, tested and evaluated in demonstrators. The human being as an individual, but also as part of the society and the system, is the key element for achieving efficiency goals and as such in the centre of the living labs, which are implemented as «public-private-people» partnerships.

The goal is low-emission, resources-saving and efficient ways of living and working while maintaining and, if possible, improving the quality of life.

1.3 The application process

SWEET Call 1-2021 is organized as a two-step process. In a first step, all interested consortia can submit a pre-proposal that briefly summarizes the consortium structure, the work packages, overarching objectives and the planned impact. All submitted and eligible pre-proposals will be evaluated by a panel of international experts and ranked.

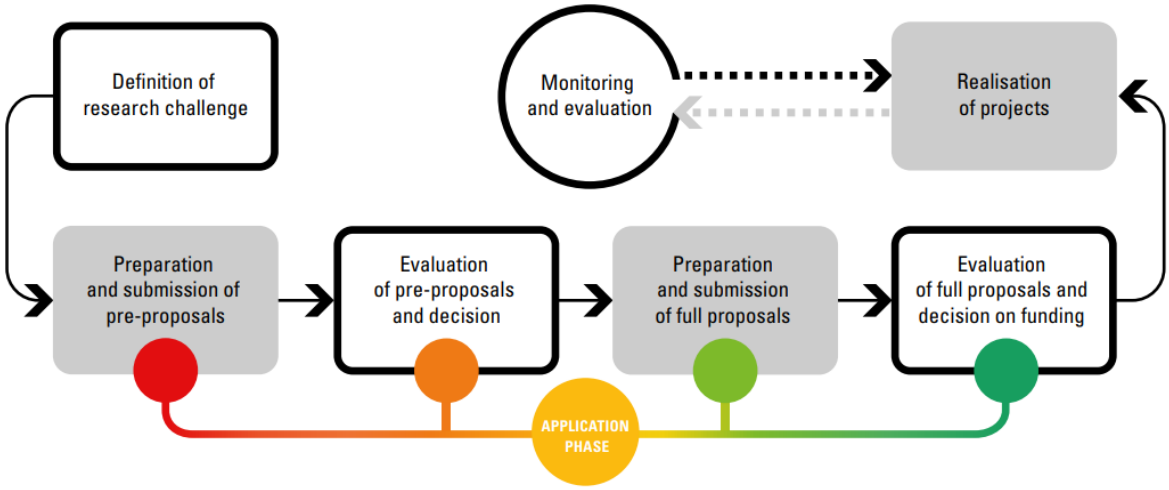

Figure 1-3: Two-step application process of SWEET Call 1-2021.

A short-list of the highest-ranking consortia will then be invited to submit a full proposal for the second phase of the application process. The submitted full proposals will be evaluated by the expert evaluation panel and the two highest-ranking consortia will be awarded with SWEET funding.

In order to guarantee an efficient and streamlined application process, the pre-proposal is strictly limited to 20 pages. This minimizes the workload for both evaluators and applicants and ensures that the consortia need to thoroughly discuss their pre-proposal and reduce it to the essential. Only the few consortia invited to submit a full proposal will have to describe in detail all work packages and budgets, and prepare all the necessary binding letters of commitment. Importantly, significant differences in third-party and matching funds as well as in-kind and other contributions at the full proposal stage compared to the pre-proposal will have an impact on the evaluation.

2 Objective of SWEET Call 1-2021: the research challenge

SWEET Call 1-2021 comprises one common research challenge that must be addressed by all applying consortia. The overall budget of this call is CHF 20 Mio. Two consortia will be funded eventually and the budget is foreseen to be shared equally.

Additional funding through the SFOE's pilot and demonstration (P+D) programme is available. Consortia are encouraged to apply for additional funds through other national and European funding programmes.

2.1 Towards sustainable and efficient ways of living and working whilst improving the quality of life

2.1.1 Specific challenge

Our way of life, reflected in our mobility behaviour and living habits, has an overwhelming impact on energy use and greenhouse gas (GHG) emissions. Energy consumption in households and the transport sector amounts to nearly two thirds of the final energy use in Switzerland (65% in 2019)[5]. The transport sector alone is the largest emitter of greenhouse gases (15 Mt of CO_2 equiv. in 2018)[6], and no significant reduction has been achieved in this sector over the last three decades.

While building regulations and efficient heating technologies such as heat pumps greatly reduced GHG emissions from new buildings, the transformation of the existing building stock is still too slow and poses a major economic challenge that requires the inclusion of all possible optimization measures. With regard to the energy renovation of building envelopes, costs increase progressively with a certain degree of improvement for every additional energy unit saved. If this efficiency increase can be achieved in an environmentally friendly manner with other measures, it is more reasonable, to invest in measures with lower marginal costs. Within the transport sector, massive electrification to replace fossil fuels has only just started. The typical pattern of everyday commute to work and long leisure trips on the weekend, predominantly by private car, leads to an enormous GHG footprint. Current trends in societal change, largely influenced by digitalisation, the 24-hour society and a general change in values seem to challenge this pattern. The crisis associated with the ongoing coronavirus pandemic further accelerates this transformative process, offering a unique opportunity to experiment with new ways of living and working.

Consortia are invited to develop new concepts, methods, technologies and policies that enable and accelerate the transformation to a more efficient and sustainable way of life. Acceptance and adoption of new concepts and technologies requires a highly transdisciplinary approach, where active participation of all stakeholders, including the targeted citizens, is ensured. To this end, consortia will have to collaborate with living labs suitable for the implementation of their concepts, methods and technologies, and to test and validate them.

2.1.2 Scope

The increasing share of renewables and the electrification of large parts of the transport and buildings sector will help to lower GHG emissions. On the demand side, increasing energy efficiency through

[5] SFOE overall energy statistics: www.bfe.admin.ch/bfe/en/home/supply/statistics-and-geodata/energy-statistics/overall-energy-statistics.html
[6] FOEN greenhouse gas inventory of Switzerland: www.bafu.admin.ch/bafu/en/home/topics/climate/state/data/greenhouse-gas-inventory.html

technological progress and behavioural changes are essential to reach the climate goals and to reduce the burden on infrastructure and the environment.

Consortia shall identify how smart coupling of the building, transport and industry sectors can increase energy efficiency and flexibility and thus contribute to the stabilisation of the grid, and how these traditionally pure consumers can be turned into local prosumers. Further, the full (bi-directional) integration of electromobility will play an important role in how energy can be locally and flexibly consumed, stored and fed back into the grid. The development of buildings and areas must focus on the entire life cycle (construction, operation, demolition and recycling) and thus the building culture as a whole. Of particular urgency are incentives (regulatory, new business models and soft measures) to accelerate investments in renovation and large-scale retrofits.

Climate change and the resulting urban heat islands as well as increased uncertainty with regard to geopolitical, epidemiological, economic and demographic developments require an increased resilience of the urban space. The changing mobility behaviour and electrification of the transport sector must be part of comprehensive urban development. Fossil energy carriers must be replaced and possibilities for accelerating the transformation of the building stock and increasing the renovation rate need to be identified and demonstrated. The rapidly developing artificial intelligence and big data offer completely new possibilities for efficient and intelligent building control as well as new mobility concepts and services. Increasing automation with the help of large amounts of personal data offers great opportunities, but also challenges in terms of data security and acceptance.

Socio-economic aspects with a focus on the diffusion of new technological solutions as well as energy-relevant behavioural changes up to sufficiency are central to this challenge. In the framework of living labs, new scientific approaches, methods and technologies should be implemented, verified and validated in demonstration projects. The active participation of all relevant stakeholders and their involvement in a transdisciplinary way are key to successful implementation of new concepts, methods and technologies, and for their economic feasibility at a later stage. The SFOE considers the integration of living labs and large-scale pilot and demonstration projects absolutely crucial. Research restricted to the usual realm of academia will not suffice to successfully address this challenge.

Evidently, *living & working* is a broad theme and consortia are not expected to address every single aspect of this challenge. Rather, they should define their own focus and priorities and present a convincing concept to study the main issues in a holistic manner and with the best-suited network of partners and living labs.

2.1.3 Expected impact

- Identification of the most efficient and affordable measures with high public acceptance and easy implementation for improving energy efficiency.
- Acceleration of the transition to more sustainability in the building and transport sector through active participation of all relevant stakeholders including researchers and innovators, businesses and operators, regulators and citizens.
- Potential for increased efficiency and flexibility on the demand side by behavioural changes, digitalization and technical measures.
- Extensive validation of concepts, methods and technologies in connection with living labs and demonstration projects and assessment of potential new policy instruments in field studies.
- Recommendations for policy makers, cities and communes and market players.

Primary target for impact are the following stakeholders: city planners and urban developers, policy makers, public transport operators, innovators, businesses, investors, households and citizens.

2.2 Structural requirements for consortia

This call addresses fundamental questions about how interaction with and acceptance and deployment of new technologies can improve the energy efficiency of our way of living. A transdisciplinary and holistic approach is thus of utmost importance. This must be clearly reflected in the composition of the consortia, where scientists from technical and socio-economic disciplines are required to closely interact. This alone will not suffice though as researchers rely on the response of users and the market. A close collaboration with established and newly created *living labs* is thus indispensable.

2.2.1 Established living lab

A consortium must collaborate with at least one established living lab. The living lab must be represented in the consortium either as applicant/member or cooperation partner. Size and composition of the living lab should be representative to address the relevant research questions and enable the multiplication of the results.

The following minimum requirements apply for an established living lab:

- The living lab must be located in a built-up and well-connected urban or suburban area in Switzerland as defined by the Federal Statistical Office (FSO): www.atlas.bfs.admin.ch/maps/13/de/10447_10446_3191_227/17718.html
  The map is only available in French and German. The first three categories (Agglomerationskerngemeinden / communes-centre d'agglomération) are considered urban or suburban in the context of this call.
- Reasonable mix of living and working.
- Critical size in terms of spatial extent and number of residents/participants, sufficiently large to test and validate proposed technologies, methods, concepts and policies.
- Willing and suitable (thematically, organizationally and technically) to actively interact with the research teams in the various research topics, to verify results and to implement them.

Furthermore, people participation is highly desirable, ideally in an institutionalised public-private-people-partnership (4P). In cases, where such 4P partnership has not been formally established yet, the consortia must present a clear plan on how a binding participation of people (citizens, residents, employees, users, etc.) and other stakeholders can be achieved. This includes a recruiting strategy and an estimation of the required sample size.

2.2.2 Additional (new) living labs

In addition to "conventional", building-based living labs, consortia are encouraged to integrate or to plan and develop additional (virtual) living labs to comprehensively study energy-relevant behaviour with a special focus on mobility or other aspects of "living & working".

2.2.3 Transdisciplinary and holistic approach

The consortia shall strive for the most holistic approach possible. Besides the minimal requirements for a living lab (Chapter 2.2.1), consortia are in principle flexible and free in their choice of cooperation partners and living labs. Undoubtedly, a well-balanced cluster of living labs and cooperation partners

will be key to success. The composition of the consortium, network and interaction with living labs will be central to the evaluation.

True progress in people-centred energy research requires not only interdisciplinary cooperation between researchers from technical and socio-economic fields, but also the involvement of further partners along the innovation chain from the private and public sector as well as the people (citizens, residents, employees and users), including their active participation in the projects in a transdisciplinary manner.

2.3 Additional funding opportunities

Implementation-related projects and testing of market opportunities are an integral part of this call. The SFOE P+D programme can make substantial additional funds available for pilot and demonstration projects. Applicants are also advised to envision additional projects with further funding agencies and programmes and briefly outline them in the proposal.

Possible programmes and agencies (non conclusive):

- EnergieSchweiz (Swiss Energy): www.energieschweiz.ch
- Innosuisse – the Swiss Innovation Agency (www.innosuisse.ch)
- JPI Urban Europe - Driving Urban Transitions (DUT): https://jpi-urbaneurope.eu/
- Upcoming pilot projects for mobility pricing in Switzerland: https://www.astra.admin.ch/astra/de/home/themen/mobility-pricing/vernehmlassungsunterlagen.html

3 Rules for participation

3.1 Need for consortia

The research challenge must be addressed and answered in a trans- and interdisciplinary manner set in the context of a specific innovation system chosen and described by the consortium (Figure 3-1). To this end, the research and innovation community has to organize consortia that establish portfolios of interrelated projects with the purpose of addressing and answering the research challenges described in this call text. The term of a consortium is 8 years.

A consortium is a network of several members who adhere to the rights and obligations set forth in their compulsory consortium agreement. The management of the consortium, the host institution, signs a subsidy contract with the SFOE, which ensures, among other things, the flow of funds that support the work programme of the consortium. The subsidy contract also contains a list of beneficiaries who ultimately receive SWEET funds via the host institution.

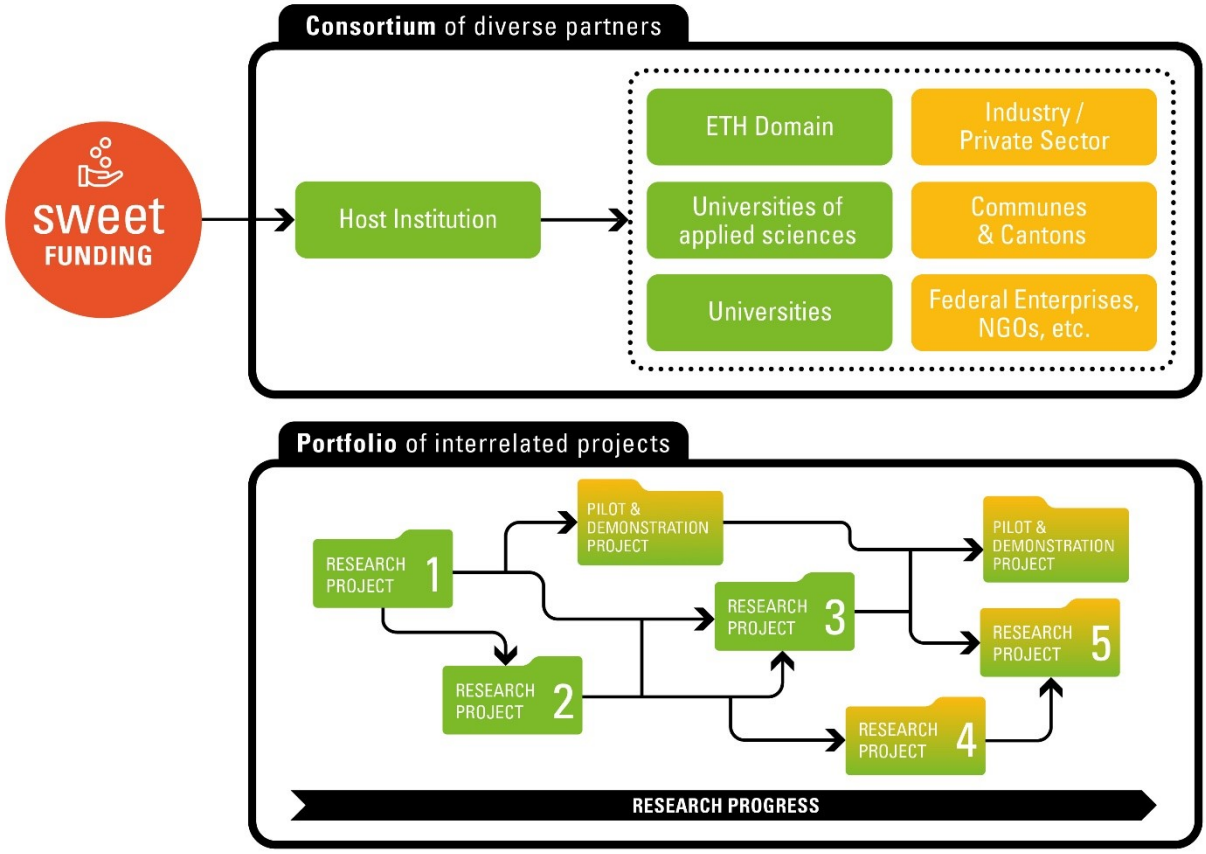

Figure 3-1: Structure of a consortium: The SFOE administers SWEET funding which flows via a host institution to consortium members. In return, the consortium is implementing a portfolio of interrelated projects that address the research challenge. Owing to the long duration of a consortium, its composition and portfolio of interrelated projects may evolve.

3.2 Who can participate and apply?

3.2.1 Coordinator

The coordinator is the person responsible and accountable for the overall coordination and submission of the proposal as well as for the execution and administration of the consortium. The coordinator is a member of staff of the consortium's host institution (Chapter 3.2.2). The coordinator, on behalf of the entire consortium, will be the contact point for the SFOE and will be responsible for the administrative and financial management of the consortium.

3.2.2 Host institution

The host institution is a Swiss institution of higher education[7] and the legal entity applying on behalf of a consortium. The host institution's representative (the coordinator) is responsible for leading the overall consortium. The host institution acts as the negotiation and contractual partner of the SFOE. The host institution must provide a *Letter of Commitment* to demonstrate its intention to fulfil the obligations associated with its role in the consortium (see Chapter 4.3.1). This letter is due when the pre-proposal is submitted.

Upon request and subsequent SFOE approval, host institutions may change during the application phase and the consortium's execution phase, provided similar commitments are made by the new host institution and contracts are reassigned.

3.2.3 Applicants

Applicants request SWEET funding from the SFOE through the consortium. Each applicant is a legal entity with due representation. Foreign institutions of higher education or public research institutions may apply for SWEET funding, provided their skills and competencies are essential for the implementation of the consortium's objectives and cannot be provided by Swiss institutions. All applicants must provide a *Letter of Interest* that is due when the pre-proposal is submitted (see 4.3.2).

Upon award, all applicants become beneficiaries of the subsidy contract between the SFOE and the host institution. All applicants will establish a consortium agreement and are henceforth referred to as members of the consortium.

Applicants may participate in more than one consortium. In this case, the participant must inform the coordinators of all affected consortia. The same kind of contribution may not be offered to more than one consortium.

Participation in SWEET does not prevent access to other research and innovation programmes of the SFOE.

[7] All institutions pursuant to Article 4 letter c of the Research and Innovation Promotion Act (RIPA; SR 420.1) are eligible as host institution. www.fedlex.admin.ch/eli/cc/2013/786/en

3.2.4 Cooperation partners

Partners that choose not to apply for funding may be included in a consortium as cooperation partners. Cooperation partners must finance their activities from sources other than SWEET. Cooperation partners may join more than one consortium. All cooperation partners must provide a *Letter of Interest* that is due when the pre-proposal is submitted (see 4.3.2).

3.2.5 New members or new cooperation partners of a consortium

The consortium may change its composition during its term due to the addition or departure of members and cooperation partners. New cooperation partners and members must fulfil all previously mentioned requirements. Any such changes are subject to approval by the review panel (see Chapter 7) and the SFOE. The addition of new members will not change SWEET funding levels (see Chapter 3.5). However, funds can be internally reallocated to new members.

3.3 Guidelines for consortia

The proposal must demonstrate the added value resulting from trans- and interdisciplinary cooperation and other synergies. Consortia must be balanced: all applicants need to make significant contributions to the consortium's work programmes, activity and outputs.

The following points are compulsory requirements for the composition of a consortium to be eligible for funding:

1. A consortium is led by a *host institution*, which is a Swiss institution of higher education entitled to receive SFOE funding.
2. A consortium must comprise *at least 5 applicants* from different legal entities.
3. A consortium must consist of at least one of each of the following entities:
   a) Swiss university or Federal Institute of Technology,
   b) Swiss university of applied sciences,
   c) public body (city, commune).
4. A consortium requires access to at least one living lab (see Chapter 2.2). The living lab must be represented in the consortium as member or cooperation partner.
5. Consortia should be gender-balanced[8] and reflect Switzerland's diversity in terms of language and regions.
6. Consortia may consist of applicants across several roles and disciplines within the innovation system (e.g. application-oriented basic research, applied research, innovation, business etc.).

Moreover, all applicants and cooperation partners must meet the SFOE's admissibility and eligibility criteria (Chapter 6.1). The composition of a consortium may evolve during its term. The consortium has the right to reallocate SWEET funds to its members provided the funding rules (Chapter 3.5) are adhered to and a transparent and traceable process is in place.

Members of consortia may abstain from receiving SWEET funding.

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

3.4 Consortia timing and duration

Consortia will be funded for a period of 8 years. A consortium may vary its composition during its term depending on its objectives and the implementation of the overall work plan. Changes in membership will be recorded in the list of beneficiaries of the subsidy contract and will lead to changes in the subsidy contract and the consortium agreement. However, the initial core budget cannot be increased at a later stage (see Chapter 3.5.1).

3.5 Funding rules

The SFOE funds in accordance with the principle of subsidiarity: members and cooperation partners of a consortium contribute financially according to their abilities. SWEET and other funding sources supplement the overall financial resources needed to carry out the work programme of the consortium. Hence, the amount of own funds and third-party funds that go beyond the funding requested in the SWEET proposal enter its evaluation. An important indicator is the commitment of resources (financial and/or in kind) declared in Letters of Commitment and Interest from the members of a consortium and its cooperation partners.

3.5.1 Core Budget

The potential financial award as specified in the subsidy contract is referred to as the “core budget”. The awarded core budget will be allocated to each winning consortium, 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. The core budget is earmarked for subsidiary funding of the work programme as agreed upon in the subsidy contract, subject to changes during the term of the consortium.

3.5.2 Supplementary budget

Upon request of a consortium or of the SWEET office and subject to the availability of additional funds, the SFOE may grant a “supplementary budget”. The supplementary budget may not exceed 10% of the “core budget” granted over the term of a consortium. An application for a supplementary budget may be submitted by a consortium once the results of the consortium’s ongoing project portfolio lead to new questions that can be best addressed by launching a follow-up activity. New projects proposed by a consortium can only be funded 3 years after the launch of the consortium at the earliest.

3.5.3 Funding for pilot and demonstration projects (P+D)

Pilot and demonstration projects will be crucial for successful consortia. Through its P+D programme, the SFOE can make substantial additional funds available for such projects that go beyond the budget of this call.

Because the SFOE does not expect consortia to propose P+D projects sufficiently matured (ready to go) by this call’s submission date, the proposal’s specific information on the potential P+D project will be mostly informative, akin to a P+D project note. Once activities of the consortium are under way and the envisioned P+D project has matured sufficiently, a formal application must be submitted to the SFOE’s P+D programme for legal and budgetary reasons. Any decisions by the SFOE on P+D projects are subject to legal hearings and formal objections.

The information will serve the expert evaluation panel to assess the P+D project as a conceptual (yet-to-be-funded) element of the portfolio. A positive view on such P+D project notes will be beneficial for the proposal’s overall assessment, but does not guarantee funding by the P+D programme.

3.5.4 Further particulars on funding

SWEET funding is dedicated to research and innovation activities that are undertaken by Swiss institutions of higher education and non-commercial research organisations. SWEET funds may be allocated to Swiss private for-profit entities engaged in pre-competitive research projects if their skills and competencies are necessary for the success of such projects, including P+D projects. Similarly, SWEET funding may be allocated to Swiss communes, districts/regions and cantons, and enterprises affiliated with the Swiss Confederation; this will be evaluated on a case-by-case basis. Federal departments and their administrative units are prohibited from receiving SWEET funding, but may participate as cooperation partners.

Research and development activities at low technology readiness levels (4 and below) and in the domains of social sciences and humanities may be fully funded by SWEET. Still, consortia are encouraged to make reasonable efforts to secure own or other third party funding. P+D projects will be financed at the agreed level, but in no case at more than 40% of the non-amortizable additional costs.[9]

At least 10% of the core budget must be reserved for coordination, communication and KTT activities. While these activities need not yet be detailed in work packages at the pre-proposal stage, the reservation of this amount must be taken into account when preparing the budget.

The SFOE funds research activities through its SWEET programme pursuant to Article 16 of the Research and Innovation Promotion Act (RIPA)[10]. Overhead costs are therefore not eligible.

There is no entitlement to funding.

3.6 Data availability

3.6.1 Open access

The SFOE subscribes to the notion of Open Science and expects that results and data generated by funded projects are publicly accessible. Measures must be included to provide open access (free online access, such as the ‘gold’ model) to peer-reviewed scientific publications which will result from the project.

3.6.2 ARAMIS publication

By signing the application form the applicants declare 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 (FoIA). Specifically, scientific reports and the main project information will be published on the ARAMIS information platform (www.aramis.admin.ch) and if required on the geoportal of the Confederation (http://map.geo.admin.ch).

[9] For a description of the P+D programme and the technology readiness levels (TRL, Appendix 1), please consult the “Directive on the submission and evaluation of applications for financial support of energy research, pilot and demonstration projects”: https://pubdb.bfe.admin.ch/en/publication/download/9952

[10] Federal Act on the Promotion of Research and Innovation (RIPA; SR 420.1): www.fedlex.admin.ch/eli/cc/2013/786/en

4 Application

4.1 General instructions regarding the form and structure of the proposal

SWEET proposals must be prepared in English. Proposals written in other languages will not be accepted. Consortium proposals have to be submitted using the official template provided on the SWEET website and have to be fully completed and submitted in due time to be eligible for consideration. No proposal will be accepted if it is submitted in another format or if it is incomplete. The SFOE will confirm receipt and process all consortium proposals under appropriate conditions of confidentiality.

4.2 Pre-proposal template

The pre-proposal is subject to a strict size limit of 20 A4 pages. Applicants must use the official template document and are not allowed to change the font, font size, line spacing or borders. Any proposal exceeding this 20 pages limit will not be considered for evaluation.

The pre-proposal is divided into the following sections:

Administrative information and consortium structure (max. 3 p.)

- Information related to the host institution, applicants and cooperation partners
- Management and structure of the consortium and role of the partners
- Coordination and KTT activities of the consortium

Global consortium programme, vision and portfolio description (max. 3 p.)

- Framework, vision and main goals of the consortium
- Description of the project portfolio and the interrelation of the projects
- Trans- and interdisciplinary collaboration and synergies of the consortium
- Rough schedule and Gantt chart
- Planned impact

Work packages (max. 1 p./WP)

- Short description of each work package (WP)
- WP lead and project partners
- Project costs and funding

P+D project notes and additional projects (max. 2 p.)

- Project notes for P+D projects
- Project lead and partners
- Embedding in and relation to the overall programme

Living labs (max. 2 p.)

- Description of foreseen living labs
- Status quo of existing living labs
- Extension plans and/or creation of new living labs
- Partners for the public-private-(people)-partnerships (3P/4P)

- Funding of the living labs and participation of the consortium
- Adequacy of sample characteristics (size, composition) for questions to be analysed
- Strategy for multiplication, up- and outscaling

Budget (max. 1 p.)

- Cost overview of WPs and coordination and KTT activities
- Planned own funds and third-party funds

4.3 Accompanying documents

There are no templates for letters of commitment or interest. The letters should be printed on the institution's official stationery and signed by authorized representatives in order to demonstrate the credibility of the institution's commitment to the consortium.

4.3.1 Letter of Commitment of the host institution

The letter of institutional commitment to act as the consortium's host institution must demonstrate the host institution's real and active participation in the proposed consortium by the provision of human and financial resources and in-kind contributions to the benefit of the consortium. Since the host institution will be the contractual partner of the SFOE, such commitment must be confirmed by the board of the school/institution.

The letter must contain the full name and address of the person who is authorized to act as the coordinator and, in case of award and successful completion of the contract negotiation phase, to represent the consortium on behalf of the consortium and on behalf of the host institution.

4.3.2 Letters of Interest of applicants, cooperation partners and living lab(s)

By signing and submitting a Letter of Interest, applicants express their intention to become members of the consortium in case of award. Similarly, by signing and submitting a Letter of Interest, cooperation partners and living labs express their interest in a partnership with the consortium, should it be established.

The letter should demonstrate the institution's real and active participation in the proposed consortium by the provision of human and/or financial resources and in-kind contributions to the benefit of the consortium. The letter should further indicate the availability of financial resources for those activities that are not covered by SWEET funding. The letter must include a list of the work packages that the applicant or cooperation partner will participate in.

Living labs should describe their role in the consortium and the contributions they can make, in particular in terms of number of involved people and the possible (additional) burden on the participants.

5 Submission

5.1 Submission procedure

All applications in response to SWEET Call 1-2021 must be submitted electronically to the SWEET office at the following email address: sweet@bfe.admin.ch .

Pre-proposals must be submitted prior to the deadline of SWEET Call 1-2021 on Wednesday, 16 June 2021 (12:00 noon CEST).

The application can only be accepted if it is submitted in complete form within due time and the signed confirmation of the host institution is included.

Make sure to submit the originally provided template document (*.doc) for the pre-proposal. In addition, the pre-proposal should be compiled and submitted as a single PDF file together with all accompanying documents (Letters of commitment and interest).

Please label the files in the following manner: (replace *Acronym* with your consortium acronym)

- Pre-proposal (MS Word, doc): *Acronym*_proposal
- Compiled PDF (pdf): *Acronym*_ALL

If the proposal size exceeds 20 MB, files must be submitted via the file transfer system of the Swiss federal administration (www.filetransfer.admin.ch). Please contact the SWEET office well in advance to receive the access credentials.

5.2 Data protection

The content of proposals submitted to this call will be used by the SFOE and independent evaluators for the purpose of assessing and evaluating proposals, and subsequently by the SFOE and its team of reviewers for monitoring of consortia that have been selected for funding.

The whole content of the proposals received under the call will be treated as confidential, with the exception of the titles and publishable abstracts of consortia and their portfolio of projects selected for funding. Proposals and evaluation reports will be stored on secure servers. Independent evaluators will be required to sign declarations concerning confidentiality and conflicts of interest before they are granted permission to access any SWEET proposal.

By submitting the proposal, the consortium agrees that the proposal is forwarded to independent evaluators. Both the SFOE and evaluators are subject to very strict confidentiality rules.

6 Evaluation

6.1 Admissibility and eligibility

The SFOE will check all submitted SWEET proposals for admissibility (completeness and composition of proposal) and eligibility (scope, consortium composition) prior to being evaluated by the expert evaluation panel. A proposal is admissible and eligible, if all of the following questions have been answered by “yes”.

If one or more of the criteria for admissibility and eligibility are not fulfilled, the proposal will not be advanced to the evaluation phase and will be rejected instead. The coordinator of the proposal will be notified in writing, if a proposal does not meet the criteria for admissibility and eligibility, including the reason(s) why and which of the criteria have not been met.

Admissibility		Fulfilled
A1	Has the pre-proposal been received before the deadline given in the call text?	Yes / No
A2	Has the pre-proposal been prepared with the right template document and formatting and does it not exceed the 20 A4 pages size limit?	Yes / No
A3	Has the host institution submitted a duly signed Letter of Commitment with the requested minimum content (see Chapter 4.3.1)?	Yes / No
A4	Have all applicants and cooperation partners submitted Letters of Interest?	Yes / No
A5	Is the information required for the pre-proposal complete (see Chapter 4.2)?	Yes / No
Eligibility		Fulfilled
E1	Is the host institution entitled to receive SFOE funding (see Chapter 3.2.2) and has a consortium coordinator been appointed on its behalf?	Yes / No
E2	Are one host institution and as a minimum 4 additional admissible applicants defined in the consortium?	Yes / No
E3	Does the consortium include all required groups (universities/ETH domain, universities of applied sciences, public body/city/commune)?	Yes / No
E4	Is a living lab that fulfils the minimum requirements defined as part of the consortium (see Chapter 2.2)?	Yes / No

Table 1: The SFOE uses criteria for admissibility (completeness and composition of proposal) and eligibility (scope, consortium composition, and finances) prior to the evaluation by the expert evaluation panel.

6.2 Evaluation

6.2.1 Evaluation process

Upon successful conclusion of the admissibility and eligibility check, proposals will be evaluated by a panel of independent experts based on the three principal criteria: excellence, impact and implementation. The independent panel will consist of recognized experts in the field, academics as well as practitioners and innovators, who can assess the scientific as well as the innovative and practical aspects of the submitted proposals. The panel will be appointed by the SFOE. Applicants will have no possibility for rebuttal to the panel’s evaluation.

Having assessed and scored the proposals, the expert evaluation panel will then rank proposals according to score, and recommend to the SFOE a short-list of the highest-ranking proposals. Only proposals that have reached the minimum thresholds will be ranked. A maximum of 20% of the submitted pre-proposals, but at least four, will be short-listed.

Coordinators of the short-listed proposals will receive an invitation to prepare the full proposal. All other submitted proposals drop-out of the process and cannot be funded. Without invitation, no full proposal can be submitted.

6.2.2 Evaluation criteria

Proposals will be evaluated according to the following criteria:

Excellence – Weight 35%	5 points (max)
• In accordance with the objectives of the research challenge and the call text in general • Clarity and relevance of the consortium's objectives and goals • Transdisciplinary approach: involvement and active participation of a wide variety of stakeholders from science, industry and the public sector as well as citizens • Size and composition of living labs, adequacy of samples for surveys and field studies: representative to address research questions, potential for upscaling and multiplication of results • Credibility of the proposed concepts, methods, technologies and the consortium approach • Ambition and innovation potential - e.g. beyond the current state of the art • Suitable implementation and validation in living labs and with pilot and demonstration projects • Scientific merit	
Impact (potential impact of the results of the project) – Weight 35%	5 points (max)
• Expected potential to increase energy efficiency in Switzerland with a focus on the transport and buildings sector and urban planning • Socially important impacts, such as consumer behaviour, social acceptance and evidence-based policy relevance • Industrial relevance, competitiveness and potential for market penetration • Impact on science and thought leadership of Switzerland, international visibility and collaboration	
Structure of the consortium and implementation – Weight 30%	5 points (max)
• Breadth and diversity of the consortium and coverage of the relevant domains • Added value and synergies, uniqueness of the consortium structure that enables to tackle challenges otherwise inconceivable • Network of cooperation partners and living labs, and involvement of public bodies (cities, communes) • Maturity and balance (appropriate mix of research and development, and conceptual P+D projects) of the project portfolio, and proportion of SWEET funding to other funding sources. • Strength of management structures and governance procedures • Suitability of the implementation to realize the consortium's expected impact including resources mobilized, integration of living labs, suitability of expertise, complementarity, and balance of contributions	

Table 2: Evaluation criteria and their characteristic features.

6.2.3 Scoring and thresholds

An expert evaluation panel will evaluate on the basis of the criteria “excellence”, “impact” and ”structure of the consortium and implementation” (Table 2). Each criterion will be scored by the expert evaluation panel using the following scale: 1 poor, 2 fair, 3 good, 4 very good, 5 excellent. A maximum of 5 points can be achieved for each of the three categories. Half marks will be used.

The threshold for individual criteria is 3. The overall threshold, applying to the sum of the unweighted three individual scores, is 10. Only proposals that meet both, the threshold for individual criteria (each criterion must have a score of at least 3 points) and the summed threshold (10 points) may be considered for the short-list. For computation of the ranking, the weighting of the evaluation categories (35% for excellence, 35% for impact and 30% for structure and implementation) will be taken into account.

6.3 Communication of results and further steps

The SFOE will announce the results of the evaluation of the pre-proposals and the next steps. Consortia coordinators will be issued with the written result of the evaluation. The coordinator will also be informed about the consortium’s position in the ranking list in an anonymized manner.

In case the proposal is short-listed, the consortium will be invited to prepare a full proposal and the coordinator will receive all necessary further instructions. The SFOE will provide feedback and can make recommendations.

In case of a negative decision, *i. e*. the proposal is not part of the short-list, coordinators can submit a formal objection to the decision within 30 days. After this period, the decision enters into force.

There is no entitlement to funding.

6.4 Tentative schedule

➢ **Wednesday, 16 June 2021**	**Submission deadline for pre-proposals**
➢ August 2021	Announcement of evaluation results
➢ September 2021	Invitation to submit full proposals for short-listed consortia
➢ **November 2021**	**Submission deadline for full proposal (call closes)**
➢ January 2022	Announcement of funding decision by the SFOE
➢ April 2022	Consortia start operations

6.5 Documentation and forms

All documents for public release related to this call are published on the SWEET website: https://www.bfe.admin.ch/sweet

7 Consortium monitoring and reporting

Beyond standard reporting (final reports on research and P+D projects), consortia are expected to provide annual reports that summarize progress being made in the agreed upon work programme as well as financial aspects.

The SFOE will appoint a consortium-specific review panel that will monitor the consortium throughout its term and provide guidance and recommendations.

Detailed monitoring and review guidelines including report templates will be published after the publication of the funding decision.

8 Contacts and further information

If you have questions on the general call process and proposal submission, please contact the **SWEET office via email or by written letter to** sweet@bfe.admin.ch **by 2 May 2021:**

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

Questions and answers in relation to this call will be published and updated until 7 May 2021 at www.bfe.admin.ch/sweet. Please regularly check for updates.