



SOUR Call 1-2021

Call guideline

**The call for proposals will close on Wednesday, 31 March 2021
(12:00 noon CEST).**





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1 Objectives and scope

1.1 SWEET

SWEET (SWiss Energy research for the Energy Transition) is a funding program¹ 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 2050² and thus also on the country's climate policy goals³. 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 sets guiding themes. Subsequently, following the consultation of various stakeholders including the research and innovation community, the SFOE formulates research challenges to be addressed by SWEET consortia. It is well understood that research in sciences 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 community. While the focus of SWEET lies on application-oriented research and implementation of research outputs in large consortia to address research challenges, a complementary funding scheme called SOUR is foreseen to promote outside-the-box thinking and support the realization of unconventional and original ideas.

1.2 SOUR

SOUR (SWEET Outside-the-box Rethinking) is a complementary program within the framework of SWEET to specifically promote the exploration of *unconventional* and *alternative* approaches for Switzerland's energy future and to identify potential *game changers*. SOUR offers qualified⁴ researchers an opportunity to develop and test new and unconventional scientific approaches, methods, theories and ideas on their own responsibility and independently of SWEET consortia. Risk-taking is explicitly encouraged; promising and original ideas which are based on little or no existing data can be rapidly funded.

The aim of this SOUR Call is to complement SWEET Call 1-2020 "Integration of Renewables into a Sustainable and Resilient Swiss Energy System" with alternative approaches. Submitted proposals must focus on aspects of the *Guiding Theme* of SWEET Call 1-2020 (see Appendix A) that are outside the mainstream thinking and research directions. SOUR projects are expected to deliver thought-provoking impulses for the research community and to stimulate new, promising projects. The focus of the evaluation lies on the originality of the idea and the unconventional nature of the proposed research, as well as the scientific quality. To remove bias, the applicant's personal information and track record will not be evaluated. The project description must thus be submitted fully anonymized. Nevertheless, applicants need to demonstrate the necessary qualification⁴ to conduct the proposed research.

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>

⁴ See 2.2 for eligibility criteria.



2 Rules for participation

2.1 Funding amount, duration and extension

2.1.1 Amount

The funding awarded through a SOUR grant ranges from a minimum of CHF 50'000 to a maximum of CHF 150'000. Applications outside this range will not be considered.

2.1.2 Duration and extension

SOUR grants are awarded for a duration of 6 to 18 months, in exceptional cases for up to 24 months if scientifically warranted, clearly stated and sufficiently well explained in the application. Extensions of the approved project duration are not permitted.

2.2 Who can participate and apply?

2.2.1 Applicant

As a minimum requirement, the applicant must hold a university degree (MSc or equivalent) in a field related to energy research. Furthermore, the applicant needs to demonstrate adequate research experience through either a doctorate degree (PhD) in a relevant field, or through at least three years of research work as their main source of income since obtaining their university degree.

2.2.2 Host institution

The applicant must conduct the SOUR project at a Swiss research institution. Institutions pursuant to Articles 4 and 5 of the Research and Innovation Promotion Act (RIPA)⁵ are eligible. This includes universities and the two Federal Institutes of Technology, research institutes within the ETH Domain, universities of applied sciences or other accredited higher education institutions, and non-commercial research organisations outside academia.

2.2.3 Project partners

The applicant may seek support for the proposed project from partners in the academic or private sector. Such partners may provide additional expertise and resources, and can be funded through the SOUR grant.

2.3 Funding rules

A SOUR application may be submitted by a single applicant only. The applicant must be able to conduct the project without instructions from third parties and must be in a position to make a substantial contribution to the project. Project partners may support the applicant but the sole financial and scientific responsibility remains with the applicant. The legal basis is laid down in the Research and Innovation Promotion Act (RIPA)⁵, in particular in Article 16.

⁵ Federal Act on the Promotion of Research and Innovation (RIPA; SR 420.1).
www.admin.ch/opc/en/classified-compilation/20091419/index.html



Applicants may only submit one application per call. Proposals, or parts thereof, previously submitted to other SFOE funding schemes within the past 12 months are barred from this call.

2.4 Eligible costs

The following costs are eligible for funding:

- i. the applicant's salary;
- ii. the salaries of project partners;
- iii. direct costs incurred through the use of research infrastructure related to the project and third party charges;
- iv. costs for networking activities and cooperation directly linked to the funded research;
- v. field expenses, material costs, travel costs, publication and other charges.

The SFOE rules for salaries as stated in Appendix B apply. Note that in case of SOUR grants, no money can be allocated for project management. Overheads are not eligible.

Salaries of doctoral students cannot be funded.

The SFOE awards global budgets. The successful applicant may transfer money between individual cost categories during the funding period.

2.5 Data availability

2.5.1 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 on-line access, such as the 'gold' model) to peer-reviewed scientific publications which will result from the project.

2.5.2 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, final reports and the main project information will be published on the ARAMIS information platform (www.aramis.admin.ch) and if required on the geo-portal of the Confederation (<http://map.geo.admin.ch>).



3 Application

3.1 General instructions regarding the form and structure of the proposal

SOUR proposals must be prepared in English using the official templates provided on the SWEET website. Proposals written in other languages will not be accepted. The application must be fully completed and submitted in due time to be eligible for consideration.

The SOUR application comprises two parts: (i) administrative information and (ii) the project description. The administrative information containing personal data of the applicant, the budget and a confirmation of the host institution will be assessed by the SFOE. The project description itself must be provided fully anonymized and will be evaluated by external experts.

3.2 Administrative information

3.2.1 Applicant's information

Applicants must provide a summary of their education and experience, and briefly describe how their qualification and skills enable them to conduct the proposed research.

3.2.2 Project summary and budget

A brief summary and schedule of the proposed project is required. Resources in terms of personnel and material must be detailed in the budget. Availability of required research infrastructure must be mentioned, too.

3.2.3 Confirmation of the host institution

A written and signed confirmation of a Swiss research institution concerning its role as the host institution must be enclosed (see 2.2.2). The confirmation must list the applicant's role at the host institute and demonstrate that a framework to conduct the proposed project is in place. The letter must be signed by the head of the department, institute or laboratory at the host institution.

3.2.4 Confirmation of access and ability to use research infrastructure

If applicable, the owners of research infrastructure need to give their consent to the applicant's access and ability to use the necessary research infrastructure.

3.3 Project description

Details about the project must be submitted in a separate, fully anonymized document containing a project summary and a detailed project plan. The project plan must not exceed 5 pages including graphs and references.

3.3.1 Project plan

The project plan must comprise:

- i. an introduction providing the necessary background and state of research in the field;



- ii. a statement explaining why the proposed research project is unconventional and original;
- iii. a detailed description of approach, methods, goals, expected results and potential risks;
- iv. a statement of the expected impact, significance and relation of the project to the SWEET guiding theme.

3.3.2 Anonymity

Applicants must ensure that the project description document, including metadata, is fully anonymized. Evaluators must not be able to identify the applicant or any current, previous or future positions(s) or institution(s). While references to the applicants' own publications are in principle allowed, care must be taken to ensure that no obvious self-references reveal their identity. The SFOE reserves the right to withhold applications that are not sufficiently anonymized and where the identity of the applicants, their institutions or their level of experience can be easily inferred.

4 Submission

4.1 Submission procedure

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

Proposals must be submitted prior to the closing of SOUR Call 1-2021 on Wednesday, 31 March 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 documents (*.doc) for the administrative information and the project description. Additional documents such as a short CV of the applicant, the confirmation of the host institution and other documents (e. g. support letters from project partners) should be submitted as a single PDF file.

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

- Administrative Information (MS Word, doc): *Acronym_admin_info*
- Project Description (MS Word, doc): *Acronym_project_description*
- Additional documents (pdf): *Acronym_supplements*

4.2 Data protection

The content of project proposals submitted to this call will be used by the Swiss Federal Office of Energy and by independent evaluators for the purpose of assessing and evaluating the applications. By submitting your proposal, you agree that the proposal is forwarded to independent evaluators.

The whole content of the proposals received under the call will be treated as confidential, with the exception of publishable project abstracts. Independent evaluators will be required to sign declarations concerning confidentiality and conflicts of interest before they are able to access the proposal.



5 Evaluation

5.1 Admissibility and eligibility

The SFOE will check all submitted SOUR applications for admissibility (complete and properly put together) and eligibility (scope of the proposal; qualification of main applicant) prior to evaluation. 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 project will be rejected without further evaluation.

Table 1: SFOE admissibility and eligibility criteria.

Admissibility		Fulfilled
A1	Has the proposal been received before the deadline given in the call text?	Yes / No
A2	Is the information submitted complete and are all documents included?	Yes / No
A3	Is the project description no longer than the 5 A4 pages hard limit?	Yes / No
A4	Is the financial information complete?	Yes / No
Eligibility		Fulfilled
E1	Is the project supported by an eligible host institution?	Yes / No
E2	Does the candidate have the necessary qualifications for the project?	Yes / No
E3	Are the project duration and budget within the range of the call?	Yes / No
E4	Are the project's objectives within the scope of the call?	Yes / No
E5	Is the project description document anonymized?	Yes / No

The SFOE reserves the right to ask for clarifications if any of the information submitted by the applicant is unclear and does not lend itself a Yes/No decision.

The person in charge 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.

5.2 Evaluation

5.2.1 Evaluation process

Upon successful conclusion of the admissibility and eligibility check, proposals will be forwarded to independent reviewers. Each proposal is evaluated in a double-blind process by two members of a pool of international experts. Both experts provide a written assessment.

The pool of independent international experts will consist of recognized experts in the field of the call topic, academics as well as practitioners and innovators, who can assess the scientific as well as the innovative and practical values of the submitted proposals and their potential impact.

Upon evaluation, proposals will be ranked based on the two assessments received for each proposal. If the requested budgets exceed the call budget, the position within the ranking list will determine the funding priorities of the proposals.



5.2.2 Evaluation criteria

Proposals will be evaluated according to the following criteria:

Table 2: Evaluation criteria and their characteristic features.

Originality and novelty	5 points (max)
<ul style="list-style-type: none">• How does the proposed project relate to the existing research in the field?• Is the novelty substantiated by a general lack of existing literature and projects?	
Unconventional and alternative approach	5 points (max)
<ul style="list-style-type: none">• Does the proposal show unconventional thinking?• Is it based on a unique approach, a completely novel hypothesis and/or non-standard methodology?	
Scientific quality	5 points (max)
<ul style="list-style-type: none">• Is the chosen methodology scientifically sound and accurate?• Are the objectives clear and relevant?• Is the project innovative, ambitious and well beyond current state-of-the-art?	
Potential impact	5 points (max)
<ul style="list-style-type: none">• What is the potential for significant scientific, economic, societal or political impact?• Is there potential for major transformative changes of central SWEET research challenges?• Will the project provide new research inputs for the SWEET community?	

5.2.3 Scoring and thresholds

Experts will evaluate on the basis of the four criteria listed in Article 5.2.2. Each criterion will be scored according to the following scale: 1 poor, 2 fair, 3 good, 4 very good, 5 excellent. A maximum of 5 points can be achieved for each criterion. Half marks will be used.

The threshold for individual criteria is 3. The overall threshold, applying to the sum of the four individual scores, will be 14.

5.3 **Funding decision**

The funding decision will be solely based on the assessment of the two independent reviewers. All proposals with scores above the thresholds will be considered. If the requested budget exceeds the budget of the call, funding priority will be given to proposals with a higher overall ranking. In case of equal score, preference will be given to proposals with a higher score for potential impact.

The SFOE will inform applicants whether they have received a positive or negative funding decision. In case of negative decisions, applicants will be informed which evaluation criteria (see 5.2.2) have not been sufficiently met. The SFOE will issue an administrative funding decision to which the applicant has a right to appeal.

There is no legal entitlement to funding.



5.4 Tentative schedule

Wednesday, 31 March 2021	Call for proposals closes
June 2021	Announcement of funding decisions by the SFOE
July 2021	Subsidy contracts signed
August 2021	Start of projects

5.5 Documentation and forms

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

6 Reporting

Upon completing the project, grant holders must submit a financial and a scientific report to the SFOE. After acceptance of these reports, the final payment will be released. For projects with a duration of more than 12 months, grant holders may submit an interim report, upon the acceptance of which a fraction of the grant can be released.

The scientific report will be published in the ARAMIS database. Grant holders must meet their obligations with regard to documentation of output data and their accessibility (see 2.5).

All holders of SOUR grants must participate in the annual SWEET knowledge-sharing workshop⁶ to disseminate their findings to the wider community.

7 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 22 February 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 4 March 2021 at www.bfe.admin.ch/sweet. Please regularly check for updates.

⁶ See SWEET Call 1-2020 and SWEET homepage at <https://www.bfe.admin.ch/sweet>



Appendix A: Guiding theme for SWEET Call 1-2020

The guiding theme for this call is “Integration of Renewables into a Sustainable and Resilient Swiss Energy System”. Renewable energy sources need to be integrated in Switzerland’s energy system in such a way that:

- supply remains assured,
- storage is available where and when necessary,
- energy conversion is efficient and carbon-neutral or net-negative, and
- the integration is of optimal value to Switzerland’s economy and society,

while facilitating resilience to possible disruptions and integration into the European energy system at large.

An energy system with a high share of renewable energy is a socio-technical system composed of a series of complex and intertwined elements: infrastructures, technologies, societal and behavioural aspects, economic and financial aspects, and regulatory aspects. These are constantly changing and adapting. Renewable energy sources have to be integrated in line with the principles of sustainable development, with the objective to meet the demand for heat, electricity and fuels in the principal sectors of final energy consumption (industry, services, households, and mobility). There are complex interfaces and multiple interdependencies among the sectors that require special attention to technical, economical, commercial, societal and regulatory framework conditions.

Switzerland needs to focus on renewable energy and its integration into Switzerland’s energy system. The share of renewable energy carriers that meet the energy demand of consumers has grown in absolute terms from 137 PJ in 2000 (16% of the total 847 PJ) to some 193 PJ in 2018 (or 23% of the total 831 PJ), and is likely to approach 24-25% by the end of 2020. Yet, fossil fuels continue to provide the lion share of energy carriers having only declined from around 70% in 2000 to around 63% in 2018.⁷

Apart from large hydropower plants whose growth has been stagnant, the share of renewables (excluding hydropower) in power generation has effectively quintupled since 2000 from a very low base of 850 GWh to more than 4’000 GWh in 2018⁸. Far from negligible, this growth contributes to maintaining a Swiss power generation fleet that, to the most extent, has a very low greenhouse gas (GHG) emission footprint. Going forward, conventional wisdom expects electrification using electricity supplied from renewable sources to provide a major part of the solution for decreasing GHG emissions from households, industry, transport, services and other smaller sectors of the economy. Consequently, the demand for electricity would increase substantially, growing the share of electricity in total energy consumption from around 25% today⁷ to around 50% and maybe more by 2050.

Hence, Switzerland not only must continue to have a low GHG emission electricity supply but this supply has to indirectly contribute to the de-fossilization of the entire Swiss energy system. Even more challenging, the energy system needs to contribute its share of negative GHG emissions to

⁷ See SFOE Overall energy statistics (various years):
<https://www.bfe.admin.ch/bfe/en/home/supply/statistics-and-geodata/energy-statistics/overall-energy-statistics.html>

⁸ See SFOE Swiss renewable energy statistics (various years):
<https://www.bfe.admin.ch/bfe/en/home/supply/statistics-and-geodata/energy-statistics/sector-statistics.html>



realize a net-zero goal by 2050. Beyond 2050, the energy system may even have to contribute to a net-negative Switzerland. This is a tall order.

Reverting to the issue of GHG reductions, the per capita GHG emissions of Switzerland in 2017 amounted to 5.5 tons, having declined from 8 tons of CO₂ eq. per capita in 1990⁹. These per capita emissions need to be in the range of 2.5-3 tons of CO₂ eq. by 2030, to enable Switzerland to pursue a path towards net-zero emissions by 2050. Rates of GHG reductions need to effectively multiply, which requires major efforts owing to energy system's overwhelming GHG contributions.

There are multiple challenges that must be overcome to achieve a share of renewable energy in Switzerland's energy system that is compatible with country's sustainability, energy and climate targets. Here, Switzerland needs successful research and innovation to overcome the following challenges:

- While Switzerland has dedicated resources and efforts to increase the share of renewables from 16% to around 25% over 20 years, fundamentally new ways must be explored to integrate a much higher share of renewables over the next 20 years. Key to meeting this challenge is designing and transforming an energy system that is significantly more flexible across various sectors of economic activity and across a wide range of temporal and spatial scales.
- While a successful transition of the Swiss energy system that meets climate and sustainability policy requires a highly networked system with pervasive sector coupling and electrification, concurrent trends towards decentralized, local renewable energy supply options call for new technical solutions to ensure reliable and efficient supply to customers. To harness the full benefits of such a potentially highly resilient, decentralized system of supply and demand calls for a better coordination of investments and actors that shape and participate in such types of value chains on regional scales.
- Switzerland faces a fundamental challenge to increase the share of renewables for heating and cooling particularly in industrial applications and services. While households already show a highly promising trend with the share of renewables growing substantially, further progress is very much dependent on the ability to efficiently transport and distribute renewable heat.
- Any debates on energy systems and pathways to achieving sustainable development goals eventually revolve around the fundamental questions of affordable and just transformation of Switzerland's energy system with opportunities for wealth creation for individuals and society. An integrated assessment of energy systems and transition pathways must strike the right balance between environmental protection and optimized use of resources in order to find appropriate measures that fully exploit the sustainability benefits of a high share of renewable energy in Switzerland's energy system.

⁹ See FOEN CO₂ statistics: <https://www.bafu.admin.ch/bafu/en/home/topics/climate/state/data/co2-statistics.html>



Appendix B: Maximum remuneration for activities carried out within the framework of SFOE energy research

(Valid as of 1 January 2018)

Hourly rates for research projects

Category	Universities and Universities of applied sciences	CHF/h	Private organisations	CHF/h
A	Project managers Deputies	115 95	Subject matter experts in management positions	160
B	Experienced scientists with at least 5 years' experience after gaining a degree	80	Subject matter experts with at least 5 years' experience	120
C	Scientific assistants	65	Subject matter experts	100
D	Technical staff, programmers	60	Technical staff, programmers	90
E	Secretarial services	50	Secretarial services	75

A maximum of 20 % of the project time can be used for **project management** (category A). A maximum of 1,400 hours per person per year may be used for **scientific assistants** (category C). The maximum that may be paid for **doctoral students at universities** is the effective cost of the salary (gross salary plus the employer's share of social costs). If no proof of such payments is provided, rates for doctoral students will be paid in accordance with the guidelines of the Swiss National Science Foundation (SNSF)¹⁰.

No further payments for overheads will be made in accordance with Art. 16, para. 6 RIPA.

Expenses

Travel: Half price in 1st class or a vehicle allowance of CHF 0.70/km from the place of work.

Accommodation: The actual cost incurred for overnight accommodation away from home in a mid-range hotel (reference price CHF 180).

based on middle-class accommodation (rate approx. CHF 180 per night).

Meals: Main meal CHF 27.50; breakfast CHF 14.

Fees for attending meetings (e.g. monitoring groups, hearings)

Meetings up to 5 hours: maximum CHF 800 plus travel expenses.

Meetings lasting more than 5 hours: maximum CHF 1,400 plus travel expenses.

These rates include expenses incurred for preparation and follow-up work in connection with meetings and for travel and meals.

No attendance fees will be paid to administrative staff from the State, municipalities and cantons (including professors) nor to representatives of associations and organisations.

¹⁰ www.snf.ch/SiteCollectionDocuments/Annex_XII_Ausfuehrungsreglement_Beitragreglement_E.pdf