CSP ERANET
Additional Call

Guidelines for Applicants

Contents

The CSP-ERANET Joint Call Action is supported by funding from the European Union's HORIZON 2020 Research and Innovation Programme.

1. Introduction

The CSP ERANET Additional Call is carried out by national and regional research and technology development (RTD) and innovation programmes, and national and regional Funding Agencies in the field of concentrating solar power (CSP) or solar thermal electricity (STE). The following countries and regions are participating in the CSP ERANET Additional Call: Germany and North-Rhine-Westphalia, Spain, Turkey, Switzerland and Israel.

Important dates:

- Official opening of the Call: **01.10.2021** 12:00 CET
- Webinar: 21 October 2021 *(EU Sustainable Energy Days)*
- Deadline for submitting preproposals: **03.12.2021** 17:00 CET
- Deadline for submitting full proposals: **25.03.2022** 17:00 CET
- Feedback on funding decisions by **30.06.2022** and projects may begin in Sept/Oct 2022

2. Participating States, Organisations and Programmes

The participating national CSP-ERANET partners / contact points are listed in Table 1. Each **applicant has to check the project idea with the national contact point as early as possible** in the preproposal phase, at the latest before submitting any applications.

Figure 1: Organisations involved in promoting the CSP ERANET Additional Call and providing support and funding to innovative transnational projects.

Table 1: National / regional Funding Organisation Contact Points in CSP ERANET Additional Call		
Country / Region	**Funding Organisation or Contact Point**	**Contact(s) and Domain(s)**
Spain-Extremadura	Agencia Extremeña de la Energía, AGENEX	AGENEX Rachel TULLY: rctully@agenex.net, +34 924 262 161
Germany	Projektträger Jülich (PtJ)	Geschäftsbereich Energiesystem: Erneuerbare Energien/Kraftwerkstechnik, Fachbereich / Kraftwerkstechnik und CCS, Solarthermische Kraftwerke (ESE 5) Tarik SCHWARZER t.schwarzer@fz-juelich.de, +49 2461 61 9157 Electronic submission system: Renate HORBELT: r.horbelt@fz-juelich.de, +49 2461 61 9874 Kambulakwao CHAKANGA: k.chakanga@fz-juelich.de +49 2461 61 9871
Germany-NRW	Projektträger ETN	Fachbereich Energie Dr. Melanie SCHULTE: me.schulte@fz-juelich.de +49 2461 690 504 Dr.Joachim KUTSCHER: jo.kutsche@fz-juelich.de +49 2461 690 604
Spain	Agencia Estatal de Investigación (AEI)	Representative: Name: Beatriz Gómez Miguel Email: beatriz.gomez@aei.gob.es Administrative and technical issues: Name: Irene Carlos Lorenzo / Julio Marchamalo Amado E-mail: era-energia@aei.gob.es Scientific issues: Dr. Pedro Rodríguez Cortés
Spain	Centre for the Development of Industrial Technology (CDTI)	Marina SOPEÑA: marina.sopena@cdti.es ERANETS CDTI +34 91 581 56 07 /04 89 eranets@cdti.es
Turkey	Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBITAK)	Cagri YILDIRIM, Hanife TUZCUOĞLU: ncpenergy@tubitak.gov.tr Ersin TURAN: ersin.turan@tubitak.gov.tr
Switzerland	Swiss Federal Office of Energy (SFOE)	Stefan OBERHOLZER stefan.oberholzer@bfe.admin.ch, +41 58 465 89 20
Israel	MoE	Gideon FRIEDMANN: gideonf@energy.gov.il Yael HARMAN: yaelh@energy.gov.il +972 747 681 914, +972 544 519 447

3. Scope and Topics of the CSP ERANET Additional Call

The topics for CSP ERANET Additional Call are based on priorities identified in the Strategic Energy Technology (SET) Plan through the working groups in CSP technology. They include strategic targets that shall serve as a reference for this call and for proposals to be submitted. The current **strategic targets** of the Implementation Plans for CSP (under revision for update) are the following:

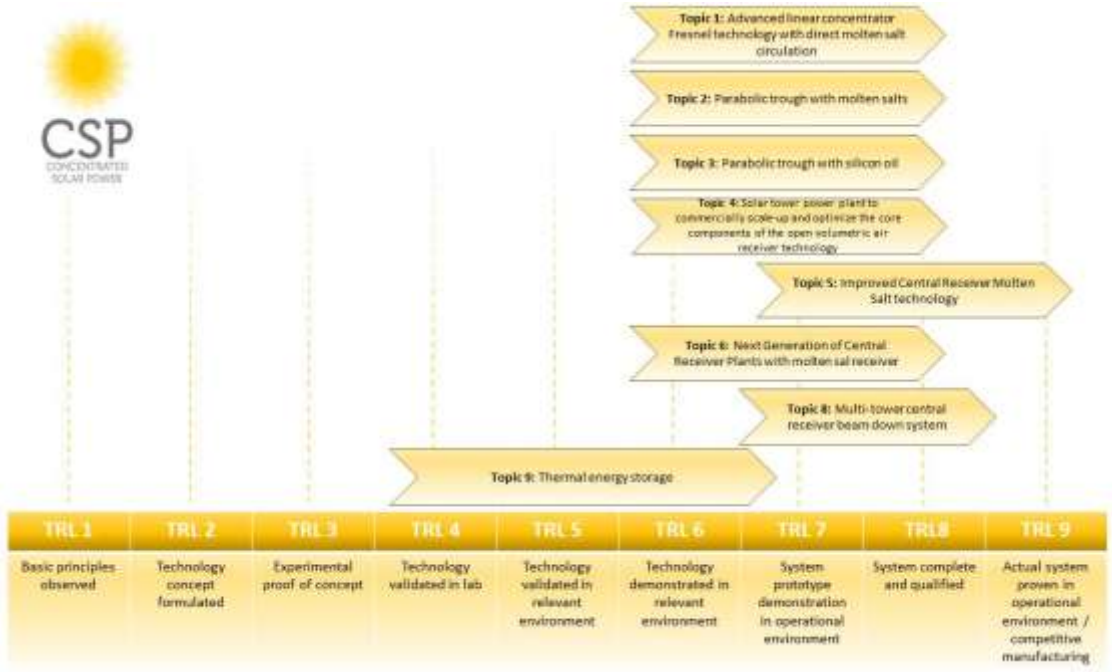
1. Short-term: > 40% cost reduction (from 2013) translating into supply price < 10 c€/kWh for a radiation of 2050 kWh/m^2/year (conditions in Southern Europe).
2. Longer-term: develop the next generation of CSP/STE technology with the aim to achieve additional cost reductions and opening new business opportunities.

The above-mentioned 2020 targets are to be adapted accordingly to the transnational projects' end year (i.e. 2024).

The Project will be based on the research and priorities identified in the SET Plan[1] and the CSP Implementation Plan[2], prioritizing 8 topics originated from the STAGE-STE Deliverable 2.3 "Final R+D input to Implementation Plan technological research programme to CSP/STE defined targets achievement".

The 8 topics, focused on electricity production, are:
1. Advanced linear Fresnel technology
2. Parabolic trough with molten salt
3. Parabolic trough with silicon oil
4. Open volumetric air receiver
5. Improved central receiver molten salt technology
6. Next generation of central receiver power plants
7. Multi-tower beam down system
8. Advanced TES (Thermal Energy Storage)

[1] https://setis.ec.europa.eu/sites/default/files/setis%20reports/2017_set_plan_progress_report_0.pdf
[2] https://setis.ec.europa.eu/solar-thermal-electricity-concentrated-solar-power-implementation



Topic 1: Advanced linear concentrator Fresnel technology with direct molten salt circulation

Scope: Proposals should aim at the development of linear Fresnel technology with molten salts as working fluid and heat storage medium to take this technology to the next logical step, that of increased concentration to enable operation at higher temperatures and thus, higher thermodynamic conversion efficiency, together with a much-reduced storage size for the same amount of energy stored.

Envisaged time to market for technologies supported (Timeline): 4 years.

Areas / subtopics:

1.1. Testing and evaluating critical plant components (reliability of standard components)

1.2. Develop plant engineering, for full operation control in clear skies and variable solar radiation days, start-up and shutdown operation, night time freezing protection, including drain-down gravity assisted strategies.

1.3. Selection of best molten salt suitable regarding technical, economical and risk assessment, as well as corrosion related impacts.

1.4. Demonstration of evacuated tubular receivers with selective coatings to be heat resistant (no out-gassing) and inner pipes to be corrosion resistant.

1.5. Optimization of the (modular) thermal storage, its integration and operational requirements in the system, in order to improve scalability and reduce freezing risks.

1.6. Demonstration of molten salt specific operations (availability of emergency operations).

1.7. Technical-economical optimization of the existing solar field.

1.8. Development of a library for industrial needs and creation of a complete model in order to define process control.

1.9. Integration of forecasting and power grid management and trading as a key input for reliable operation

TRL: 6 to 8.

Topic 2: Parabolic trough with molten salts

Scope: Proposals should aim at attaining an increase of reliability in the whole system by reducing risks originating from molten salt specific operation conditions in main but also sub-ordinate components. The action should address all risk-relevant components and include a well-organized project management.

Envisaged time to market for technologies supported (Timeline): 1 to 2,5 years.

Areas / subtopics:

2.1. Testing and evaluating critical plant components (reliability of standard components).
2.2. Testing and demonstration of process control concept (reliability of normal control).
2.3. Demonstration of molten salt specific operations (availability of emergency operations).
2.4. Systematic risk assessment and documentation for molten salt line focusing systems.
2.5. Development/testing of new concentrator systems

TRL: 6 to 8.

Topic 3: Parabolic trough with silicon oil

Scope: Proposals should aim at demonstrating all sub-components such as collectors, mirrors, receivers, valves, heat exchanger and steam generator in a pre-commercial scale with up to 2 complete solar collectors loops. The accompanying research actions should answer all open questions concerning performance and durability of all involved elements of the system to reach bankability at the end of the project.

Envisaged time to market for technologies supported (Timeline): 3 years.

Areas / subtopics:

3.1. Construction of up to 2 loops of full scale parabolic trough collectors including oil/salt heat exchanger and steam generator.
3.2. Long term operation to identify durability issues.
3.3. Assessment of performance of collector and its subcomponents.
3.4. Analysis of solar flux and heat transfer at receivers.
3.5. Analysis of heat transfer fluid composition and verification of its durability and chemical stability during commercial plant operation.
3.6. Optimization of (oil/salt) heat exchanger for increased temperatures up to 430°C.

TRL: 6 to 8

Topic 4: Solar tower power plant to commercially scale-up and optimize the core components of the open volumetric air receiver technology

Scope: Proposals should aim at the implementation of an open volumetric receiver technology in a plant size of at least 50 MW. A plant like this would incorporate a receiver with a thermal output of 360-400 MW thermal and a thermal storage capacity of at least 1 GWh. The plant would have a surrounding 360° heliostat field and four individual receivers (~80-100 MW thermal each) pointing in four directions. A reasonable intermediate step for the receiver would be one fourth of the 300-400MW thermal receiver with a 90° heliostat (north-)field. The actions proposed should support the commercial implementation of such plant

Envisaged time to market for technologies supported (Timeline): 2 years

Areas / subtopics:

4.1. Design of scaled-up open volumetric receiver (50-100 MW thermal) and optimization of the receiver design for increased efficiency.
4.2. Design of scaled-up fixed bed thermal energy storage.
4.3. Design of cost and performance optimized heliostats by optimizing drive units, mirror reflectivity and optical properties.
4.4. Detailed overall plant design for an intermediate commercial plant size of approximately 10 MW (50-100 MW thermal) including the up-scaled and optimized components.
4.5. Optimized plant and operational concepts in order to balance electricity production with other renewables and market the produced electricity.

TRL: From 6 to 8

Topic 5: Improved Central Receiver Molten Salt technology

Scope: Proposals should aim at covering some of the main systems of a commercial central receiver plant using molten salt (i.e., the solar field, the storage system, the solar receiver, the control and monitoring systems, the steam generating system and turbine) as well as operation and maintenance issues.

Envisaged time to market for technologies supported (Timeline): 3 years.

Areas / subtopics:

5.1. Increase nominal and annual performance of heliostats and heliostat field by 5% and reduce heliostat cost to < 100€/m2.
5.2. For the solar receiver: Identification and selection of new suitable materials. Reduction of total receiver surface required for a given output.
5.3. For the control: Completely automated procedure must be developed to calibrate the whole heliostat field in a short time. Develop methods to measure receiver temperature and flux distribution. Determination of atmospheric attenuation on line.
5.4. For the storage system: Improvements in heat tracing. Improvements of storage tanks designs.
5.5. For the steam generation and turbine: Optimization of steam generator design. Improvement of operational flexibility of the turbine. Improvement of the life of the turbine components.
5.6. In terms of operation and maintenance (O&M): Development of predictive maintenance tools, systems and procedures to reduce maintenance costs.

TRL: From 7 to 9

Topic 6: Next Generation of Central Receiver Plants with molten salt receiver

Scope: Proposals should aim at contributing to the development of the next generation of CSP plants by achieving additional cost reduction and open new business opportunities. These R&D actions are focused on the central receiver technology with molten salts. Since most of the R&D activities proposed can be implemented in both small and large size plants there is no additional constraint due to the plant size.

Envisaged time to market for technologies supported (Timeline): 5 years.

Areas / subtopics:

6.1. Innovative solar field configurations should be considered to optimise the plant design.
6.2. Development of different low-cost heliostat designs according to their specific requirements as a function of their position in the solar field.
6.3. Smart independent heliostat developments (self-calibrated, self-diagnosis).
6.4. Wireless and autonomous commercial heliostat field developments.
6.5. Higher temperature solar receiver according to the needs of new power cycles to guarantee reliability and performance
6.6. Use of innovative molten salts to allow a wider operation range.
6.7. Development of new control tools to handle and optimize the operation of the innovative solar field configurations.
6.8. Development of methodologies for online heliostat field characterization and diagnosis.
6.9. Increase of accuracy of instrumentation for high temperatures: 1- Steam generation and turbine 2- Monitoring of molten salt degradation status and potential corrosion of molten salt loop 3- Low-water or waterless cleaning systems developments 4- New pumping equipment to recover gravitational energy 5- Optimization of O&M procedures

TRL: From 6 to 8.

Topic 7: Multi-tower central receiver beam down system

Scope: Proposals should aim at improving the "beam down" solution that simplifies the construction of the receiver as well as the tower with very positive impact on the CSP plant costs. Simplicity, modularity and robustness can result in a strong reduction of CSP installation costs and of operative cost.

Envisaged time to market for technologies supported (Timeline): 3 years.

Areas / subtopics:

7.1 Industrial optimization of mirror design and manufacturing.
7.2 Optimization of cavity integrated with storage.
7.3 Industrial optimization operating at very high temperatures.
7.4 Cost reduction and optimization (O&M) of tracker.
7.5 Study and test of high temperature components.
7.6 Operating control strategies for components, plant with thermal energy storage.
7.7 Operate a 2 MW thermal solar receiver.

TRL: From 6 to 8

Topic 8: Advanced Thermal energy storage

Scope: Proposals should aim at developing innovative thermal storage concepts and materials (media) with either affordable cost or outstanding volumetric energy density or higher working temperatures, paying special attention to the reliability of the systems, subsystems associated and storage materials available, including pumps, valves, instrumentation, tank(s) and heat exchanger equipment.

Envisaged time to market for technologies supported (Timeline): 2-3 years.

Areas / subtopics:

8.1. Development and testing of new storage concepts and/or media with potential to provide efficient, reliable, and economic thermal energy storage.

8.2. Identification and selection of storage subsystems materials with suitable characteristics such as compatibility with the storage.
8.3. Design and testing of main subsystems and components.
8.4. Detailed analysis of storage integration in CSP plants.
8.5. Different plant scheme analyses,
8.6. Detailed operation and performance analysis.
8.7. Detailed cost reduction analysis and impact in LCOE.
8.8. Demonstrator at a representative scale.

TRL: From 4 to 6-7

IMPORTANT: Not all programmes / funding agencies will accept applications in all topics (see Table 2 and in the Annex "National / Regional Requirements") and for all Technology Readiness Levels (TRL's), and some will prioritise some topics over others. Lower TRL research activities necessary to support demonstration and validation activities might be potentially in scope for CSP ERA NET funding, where they are a minor but integral part of wider projects, which progress a technology though to TRL's of this topic. **Applicants have to check with their national / regional contact points whether the project idea fits within the national / regional constraints as early as possible but at least before submitting a preproposal.**

Table 2: Matrix of eligible topics and subtopics per country / region resp. funding agency

	Germany	Germany-NRW	Spain-AEI	Spain-CDTI	Turkey-TUBITAK	Switzerland-SFOE	Israel-MoE
1. Advanced linear Fresnel technology							
1.1	X	X	X	X	X	X	X
1.2	X	X	X	X	X	X	X
1.3	X	X	X	X	X	X	X
1.4	X	X	X	X	X	X	X
1.5	X	X	X	X	X	X	X
1.6	X	X	X	X	X	X	X
1.7	X	X	X	X	X	X	X
1.8	X	X	X	X	X	X	X
1.9	X	X	X	X	X	X	X
2. Parabolic trough with molten salt							
2.1	X	X	X	X	X	X	X
2.2	X	X	X	X	X	X	X
2.3	X	X	X	X	X	X	X
2.4	X	X	X	X	X	X	X

2.5	X	X	X	X	X	X	X

3. Parabolic trough with silicon oil

3.1	X	X	X	X	X	X	X
3.2	X	X	X	X	X	X	X
3.3	X	X	X	X	X	X	X
3.4	X	X	X	X	X	X	X
3.5	X	X	X	X	X	X	X
3.6	X	X	X	X	X	X	X

4. Open volumetric air receiver

4.1	X	X	X	X	X	X	X
4.2	X	X	X	X	X	X	X
4.3	X	X	X	X	X	X	X
4.4	X	X	X	X	X	X	X
4.5	X	X	X	X	X	X	X

5. Improved central receiver molten salt technology

5.1	X	X	X	X	X	X	X
5.2	X	X	X	X	X	X	X
5.3	X	X	X	X	X	X	X
5.4	X	X	X	X	X	X	X
5.5	X	X	X	X	X	X	X
5.6	X	X	X	X	X	X	X

6. Next generation of central receiver power plants

6.1	X	X	X	X	X	X	X
6.2	X	X	X	X	X	X	X
6.3	X	X	X	X	X	X	X
6.4	X	X	X	X	X	X	X
6.5	X	X	X	X	X	X	X
6.6	X	X	X	X	X	X	X
6.7	X	X	X	X	X	X	X
6.8	X	X	X	X	X	X	X
6.9	X	X	X	X	X	X	X

7. Multi-tower beam down system

7.1	X	X	X	X	X	X	X
7.2	X	X	X	X	X	X	X
7.3	X	X	X	X	X	X	X
7.4	X	X	X	X	X	X	X
7.5	X	X	X	X	X	X	X
7.6	X	X	X	X	X	X	X
7.7	X	X	X	X	X	X	X

8. Advanced TES (Thermal Energy Storage)							
8.1	X	X	X	X	X	X	X
8.2	X	X	X	X	X	X	X
8.3	X	X	X	X	X	X	X
8.4	X	X	X	X	X	X	X
8.5	X	X	X	X	X	X	X
8.6	X	X	X	X	X	X	X
8.7	X	X	X	X	X	X	X
8.8	X	X	X	X	X	X	X

Eligible topics and areas / subtopics are shown in Table 2 for each funding organisation participating in the CSP ERANET Additional Call.

4. Application Issues for the CSP ERANET Additional Call

4.1 Timeline and Process

The call is set up as a two-step submission procedure, consisting of a pre-proposal phase and a full-proposal phase. Further information is available in the Guidelines for Users of the Electronic Submission System available on the CSP-ERANET website. It is a pre-screen of what will be required in the application. Applicants shall not fill in this PDF but enter data online in the Electronic Submission System (ESS). The most relevant dates and deadlines are given in Table 3.

Table 3: Dates and Deadlines for the CSP ERANET Additional Call 2021

Date	Activities
01.10.2021	Launch of the CSP-ERANET Additional Call 2021
21.10.2021	EU Sustainable Energy Days: Infodays - brokerage event
03.12.2021	Deadline for submission of pre-proposals
03.01.2022	Communication on applications selected for full-proposal stage
25.03.2022	Deadline for submission of full-proposals
30.06.2022	Final funding decisions communicated to proposers
01.10.2022	Start of projects funded

1. Before submitting a preproposal, all project partners **have to** contact their respective national / regional programme funding organisations in order to verify their national/regional eligibility and to discuss the project line-up and funding conditions.

2. A preproposal is mandatory. It has to be submitted by the coordinator and partners through an online application form accessible via www.csp-eranet.eu within the deadline set. Applicants are invited to register in the Electronic Submission System as early as possible.
3. National / regional organisations will then carry out their eligibility check based on the preproposal and the respective national / regional funding rules. More specifically, the CSP ERANET coordinator will inform the proposal coordinator of the application by e-mail by December 30, 2021. If the coordinator has not received any e-mail, he / she shall contact csperanet@agenex.net. Recommendations for the full-proposals according to the national / regional rules and principles may also be provided.
4. The full proposal has to again be submitted by the applicants through the Electronic Submission System within the deadline set. Additionally, national / regional funding applications may have to be submitted separately according to their specific rules (see Annex – National / Regional Requirements).
5. An evaluation will be performed by (at least 3) independent international evaluators and the funding organisations concerned, according to the evaluation criteria specified in the call. Based on the result of the international evaluation, proposals will be selected (or not) for funding.

4.2 Eligibility Issues

Different eligibility aspects have to be considered:

- Applications have to be submitted through the Electronic Submission System within the deadline set.
- Eligible consortia shall consist of a **minimum of 3 partners from 2 different countries** participating in the CSP ERANET Additional Call and providing funding to the project selected. At least one partner in the consortium has to be from the industry. The project consortia may involve as many partners as necessary to successfully deliver the project. Partners from countries that are not members of the CSP-ERANET Additional Call (see list of funding partners under section 2) can join a project consortium as additional partners providing added-value to the project. However, these additional partners have to finance their activities from other sources, as each Funding Agency will only fund partners from their own country. A letter of commitment must be included as an annex to the full proposal including the commitment of this partner to the project.
- **All applicants** have to fulfil (additional) eligibility criteria of their respective national / regional programme / funding organisation and **have to contact their national / regional agency as early as possible** in the process to understand if their project is within scope/eligible. Furthermore, all applicants must take into account that some funding organisations require a mandatorily submission of a national application in parallel with the international one.
- SME, large companies, non-profit research organisations, higher education institutions, public research organisations and public organisations may participate according to their national / regional financing regulations (see Annex – National / Regional Requirements).
- The project duration is limited to **max. 36 months.**

4.3 Funding Rules

Within this CSP ERANET Additional Call, the funding rules of the national / regional agencies apply. Prior to submitting a pre-proposal, all project partners seeking funds have to contact their funding agency / contact point. The level of funding available will be determined by the rules of the relevant funding agency. Information about the specific funding rules and applicable topics will be provided via the person in charge of the respective national / regional agencies (see Table 1). Some relevant information is provided in Annex – National / regional Requirements. IMPORTANT: Not all programmes / funding agencies will accept applications in all topics (see Table 2 and in the Annex "National / Regional Requirements") and for all Technology Readiness Levels (TRL's), and some will prioritise some topics over others. Lower TRL research activities necessary to support demonstration and validation activities might be potentially in scope for CSP-ERANET funding, where they are a minor but integral part of wider projects which progress a technology though to TRL's of this topic. Each project partner will receive funds from his / her national / regional agency. **Each project partner will be responsible for the preparation and submission of all necessary reports required by their funding agency in order to obtain funding in full accordance with national / regional rules.**

4.4 Confidentiality

Project proposals and any information relating to them shall be kept confidential in accordance with the applicable national / regional legislation. Project proposals shall not be used for any purpose other than the evaluation of the applications, making funding decisions and monitoring of the project. International experts, which will be invited to evaluate the proposals, are required to sign a confidentiality agreement prior to evaluating proposals.

Successful projects have to provide a non-confidential project summary that will be published on the CSP-ERANET website in the interests of knowledge exchange and contributions for the trans-national reporting (details of projects are strictly kept confidential, see section 5).

4.5 Consortium Agreement

A consortium agreement between the project partners will be required. In order to accelerate the selection and contract offer process, a statement on the signature of the consortium agreement should be submitted with the full proposal. Models for consortium agreements can be obtained from national / regional funding agencies or from the EC IPR Helpdesk: http://www.ipr-helpdesk.org. The project proposal has to be the foundation for the consortium agreement. The purpose of the consortium agreement is to clarify the responsibilities of the partners, decision processes inside the project, management of any change of partners, how to exploit and/or commercialise the results (for each partner) and IPR issues.

4.6 Evaluation

The evaluation is carried out on a national / regional level and by independent international evaluation experts **(only during the full-proposal stage).** The international evaluation criteria are listed in Table 4.

Table 4: Set of International Evaluation Criterion Used

Main criterion	Sub-criterion
Excellence	• Clarity and relevance of the project's objectives; • Credibility of the proposed technology/concept – including trans-disciplinary considerations, where relevant; • Credibility of the proposed project approach; • Ambition and innovation potential - e.g. beyond the current state of the art.
Impact	• Expected contribution to the reduction in the cost of CSP power, life-cycle environmental impact and other relevant Key Performance Indicators; • Expected impact on Work Programme (SC3-JA-1) objectives; • Expected ability of the project to enhance innovation capacity and integration of new knowledge in the European solar power industry; • Future market deployment potential of the proposed innovation; • Project's ability to strengthen the competitiveness and growth of European companies by developing innovations that meet the needs of European and global solar power markets and, where relevant, deliver these innovations to the market; • Strength of the proposed research data management, exploitation and dissemination plans (including IPR management proposals, where relevant); • Any other environmental or socially important impacts.
Quality and Efficiency of Implementation	• Coherence and expected effectiveness of the project plan, including the appropriateness of task and resource allocation; • Strength of management structures and governance procedures, including risk management; • Consortium strengths and complementarity of project partners. • Added-value through the transnational consortium

4.7 Funding Recommendation

Based on the evaluation results and funding budget available, projects will be recommended / selected for funding. The outcome of this process will be communicated by the call secretariat to the coordinator of the full proposal. The coordinator will then inform all project partners.

Formal funding decisions are made by the participating funding organisations. The funding recommendation of the call consortium is irrevocable and therefore no redress procedure is possible.

After a positive funding recommendation, the project partners must directly contact their national / regional contact points in order to start the contract negotiation and accomplish the remaining steps until the research project can begin. The project coordinator is responsible for synchronising the project start with his/her partners.

5. Funding and Reporting

5.1 Contract

Funding contracts for successful applications are dealt with directly between the project partners and their national / regional funding agencies.

5.2 Start and Instalments

Depending on the national / regional regulations, a pre-condition for transferring the first funding instalments is the existence of a consortium agreement that also includes IPR related issues.
As the national / regional funding contracts may not all become effective at the same time, the project parties i) usually do not receive the instalments and ii) usually are not reviewed / monitored on national / regional level at exactly the same time. The national / regional funders will however aim to agree a common start date and duration for recommended projects.

5.3 Monitoring

Each project partner will be responsible for the necessary reporting to their funding agency according to national / regional rules in order to obtain and maintain funding during the lifetime of their portion of the project. Besides the national / regional project review, the transnational cooperation aspects will be monitored on the CSP-ERANET level. The project coordinator is responsible for reporting according to the requirements (reporting at the start, during the course and at the end of project with publishable summary and further information for internal reporting, participation in questionnaires, provide the Consortium Agreement signed). The reporting and monitory shall not be conducted in paper form. The coordinator shall enter data online in the Electronic Monitoring System (ESS). Any substantial change in an on-going project has to be reported immediately to the involved funding organisations and the Call secretariat. The project partners should be aware that changes might have effects on funding.

5.4 Dissemination

Project partners are required to refer to CSP ERANET Additional Call 2021 in their publications, exhibitions, lectures and press information concerning results of the CSP ERANET Additional Call projects. Acknowledgement should be: Project “name” is supported under the umbrella of CSP ERANET Additional Call 2021 by (list of all national / regional agencies supporting the project).

To demonstrate the added value of transnational cooperation projects, results from the call shall be disseminated. This process can be tackled via different channels, e.g.:

- Conferences with relevant stakeholders to inform about the project results.
- Publication of a short outline of funded projects on the CSP-ERANET and national / regional websites. This information may also be used by CSP-ERANET for further dissemination. Further

details of projects are strictly kept confidential. They can be published only in agreement with the project partners and where there is value in doing so.

- Press conferences and workshops.

Annex – National / Regional Requirements

Germany - PtJ

Specifications for CSP ERANET Additional Call 2021

Agency	Project Management Jülich, Division Energy System: Renewable Energies / Power Plant Technology
Contact	Tarik Schwarzer: t.schwarzer@fz-juelich.de, +49 2461 61 9157 Electronic submission system: Renate Horbelt: r.horbelt@fz-juelich.de, +49 2461 61 9874 Kambulakwao Chakanga: k.chakanga@fz-juelich.de, +49 2461 61 9871
Topics	The Agency potentially supports projects in the following topics: • Topic 1: Advanced linear concentrator Fresnel technology with direct molten salt circulation TRL: 6 to 8 • Topic 2: Parabolic trough with molten salt TRL: 6 to 8 • Topic 3: Parabolic trough with silicon oil TRL: 6 to 8 • Topic 4: Open volumetric air receiver TRL: 6 to 8 • Topic 5: Improved central receiver molten salt technology TRL: 7 to 9 • Topic 6: Next generation of central receiver power plants TRL: 6 to 8 • Topic 7: Multi-tower central receiver beam down system TRL: 6 to 8 • Topic 8: Advanced Thermal energy storage TRL: 4 to 6/7
Type of RTD	The Agency potentially supports the following types of RTD, namely: • Industrial / applied research • Experimental Development
Eligible applicants	The Agency potentially supports all private and public applicants, namely: List the ones that can be supported • Private – SME • Private – large companies • Private – Non-profit research organisation • Higher education institution • Public research organisation • Public organisation The maximum rate of support for research organizations is 100% of total costs (for all type of R&D); for SMEs: max. 60% for Industrial research and max. 35% for Experimental Development of total costs; for LE's: max. 50% for Industrial research and max. 25% for Experimental Development
Budget	EUR 3'000'000 (national budget)
Further specifications	Only consortia with significant industrial participation are eligible for funding. National application forms ("easy-Online Antrag") have to be used for the full proposal phase, submission via https://foerderportal.bund.de/easyonline/ A financial viability check (if applicable) has to be carried out in parallel to the full proposal phase. **Please contact Projektträger Jülich in advance.**

Germany – ETN / North-Rhine-Westphalia

Specifications for CSP ERANET Additional Call 2021

Agency	Project Management ETN, Division for Energy,
Contact	Dr. Melanie Schulte, me.schulte@fz-juelich.de, +49 2461 690 504 Dr. Joachim Kutscher, jo.kutscher@fz-juelich.de, +49 2461 690 604
Topics	The Agency potentially supports projects in all topics.
Type of RTD	The Agency potentially supports the following types of RTD, namely: • Industrial / applied research • Experimental Development
Eligible applicants	The Agency potentially supports all private and public applicants, namely: List the ones that can be supported • Private – SME • Private – large companies • Private – Non-profit research organisation • Higher education institution • Public research organisation • Public organisation The maximum rate of support for education- and research organisations is 90 % of total expenditures (for all type of R&D, only in special cases 100 %); for SEs: max. 80% (S), for MEs max. 75 % (M), for LEs max. 65 % in case of Industrial Research and in case of Experimental Development for SEs max. 60%, for MEs max. 50 %, for LEs max. 40%. Depending on the type of applicant and the type of research.
Budget	EUR 500’000 (regional budget)
Further specification	NRW regional application forms have to be used by applicants who are recommended for funding in the full proposal phase. Please contact Project Management ETN in advance.

Spain – AEI

Specifications for CSP ERANET Additional Call 2021

Agency	Agencia Estatal de Investigación (AEI - State Research Agency), Spain
Contact	Representative: Name: Beatriz Gómez Miguel Email: beatriz.gomez@aei.gob.es Administrative and technical issues: Name: Irene Carlos Lorenzo / Julio Marchamalo Amado E-mail: era-energia@aei.gob.es Scientific issues: Dr. Pedro Rodríguez Cortés
Topics	The Agency potentially supports projects in all topics.
Type of RTD	The Agency potentially supports all type of RTD, namely: • Fundamental / basic research required for the specific project fulfilling the objectives of this call and necessary to support demonstration and validation activities
Eligible applicants	The **eligible entities** for the AEI funding are: Non-profit research organizations (such as universities, public research institutions, technological centres and other private non-profit institutions performing RDI activities in Spain), as per PCI call (or equivalent). **Important**: Although private enterprises are not funded by the AEI, CDTI participates in this call. It is strongly recommended that AEI applicants participate in transnational consortia with partners obtaining funds from the CDTI or other Spanish innovation and technological development funding agencies. **It is very important that companies comply with the requirements of the CDTI, since otherwise the consortium may be declared ineligible**. **Mandatory:** **The Spanish legal entities eligible for AEI must participate in a consortium involving at least two different countries participating in this call.** The Spanish Principal Investigators (PIs) must be eligible as per PCI call (or equivalent), must hold a Ph-D and must have experience as investigators in projects funded by the Plan Nacional I+D+i 2008-2011, the Plan Estatal I+D+i 2013-2016, the Plan Estatal I+D+i 2017-2020, ERC Grants, European Framework Programmes or other relevant international programmes. Spanish PIs must have a contractual relation with the beneficiary covering the expected total length of the project. **Incompatibilities:** These must be taken into account when participating in different ERA-Nets or other international initiatives. • Principal Investigators will not be eligible for funding if they apply in more than one proposal of this transnational joint call, in more than one proposal in the same PCI call (or equivalent) and in PCI calls (or equivalent) of consecutive years. • Principal Investigators must remain unchanged between the proposal of this transnational joint call and the national PCI call (or equivalent). Only research and innovation activities will be eligible. Mere diffusion, communication or

	other activities will not be eligible.
Budget	Maximum funding of the AEI for the CSP Additional Call 2021: 500.000 € **Eligible costs** • Personnel cost for temporary employment contracts (PI contract excluded). Statutory personnel are not eligible for funding. • Direct costs (VAT included) such as current costs, small scientific equipment, disposable materials, travelling expenses, coordination costs, and other costs that can be justified as necessary to carry out the proposed activities. • Overheads (maximum 15% of eligible direct costs). • Subcontracting special tasks to EU and non-EU countries (i.e. IT services, etc.) is allowed within the limits legally established. The AEI will avoid double funding (overlapping with other EU or National funding), and will not grant projects or part of projects already funded. IMPORTANT: a maximum of two Spanish partners requesting funding to the AEI in the same proposal are allowed. **Funding rate**: 100% of eligible costs. **Maximum direct costs per proposal** (indirect costs can be added to these amounts in the proposal budget): - If the Spanish partner is NOT the Main Applicant (Coordinator) of the transnational project and: o There is only one Spanish applicant in the proposal: € 150,000 o There are two Spanish applicants in the proposal: € 200,000 altogether - If a Spanish partner IS the Main Applicant (Coordinator) of the transnational project and: o There is only one Spanish partner in the proposal: €250,000 o There are two Spanish partners in the proposal: €300,000 altogether These amounts refer to 3 years projects. In case of shorter projects, the amounts will be adjusted accordingly. Centers formed by different Spanish legal entities will be considered as a unique entity, and thus the maximum funding should not exceed the limits per proposal established above (for example mixed centers). The final funding will take into account the transnational evaluation of the collaborative proposal, the scientific quality of the Spanish group, the added value of the internal collaboration, the participation of the industrial sector, and the financial resources available.
Further specifications	**Instrument for funding the Spanish groups**: The instrument for funding Spanish groups is the Spanish call on RDI projects “programación Conjunta Internacional (PCI)”, applicants are encouraged to consult the call PCI2020-1, PCI2020-2 and PCI2021-1 since the requirements will be similar.

	Funding programme: The framework for this funding action is the Plan Estatal de Investigación Científica, Técnica e Innovación 2021-2023. On a national level, the Call will be managed by the *Subdivisión de programas Científico-Técnicos Transversales, Fortalecimiento y Excelencia* of the AEI **Data protection:** By submitting a grant application to the AEI, the applicants consent to communication of the data contained in the application to other public administrations, with the aim of further processing of the data for historical, statistical or scientific purposes, within the framework of the Organic Law 3/2018, of December 5, on Personal data Protection and Guarantee of Digital Rights. **Mandatory acknowledgement** Any publication or dissemination activity resulting from the granted projects must acknowledge funding by the Agencia Estatal de Investigación: “Project (reference nº XX) funded by the Agencia Estatal de Investigación through the PCI XX call (or its equivalent)”.

Spain – CDTI

Specifications for CSP ERANET Additional Call 2021

Agency	CDTI - Centro para el Desarrollo Tecnológico Industrial, E.P.E.
Contact	Marina Sopeña: marina.sopena@cdti.es
Topics	• The Agency potentially supports projects in all the call topics as long as the activities to be developed are technology-based (especial attention to this approach should be taken in subtopics 2.4 and 8.7)
Type of RTD	Technology-based industrial research and/or experimental development activities (in accordance with the definitions of EC Regulation nº 651/2014), representing outstanding scientific-technical quality and high innovative potential. The Spanish part of the proposed work plan must be developed in Spain. Management and dissemination activities and non-technological activities related to business models or processes are explicitly excluded for funding.
Eligible applicants	For-profit companies (being large or SMEs) established and carrying out R&D activities in Spain. Other entities such as universities, public research institutions, technological centres and other private non-profit institutions may participate if subcontracted by Spanish companies (provided that the entity or respective researcher is not requesting funding simultaneously from the AEI for the same activities). Subcontracting cannot exceed the 50% of the national project budget.
Budget	EUR 500'000
Further specification	**The eligible costs include:** ▪ Personnel costs, to the extent employed on the research project. ▪ Instrument and equipment costs, to the extent and during the period in which they are used for the RTD activities of the project. ▪ Contractual research costs, technical knowledge and patents bought or licensed from outside sources at market prices, as well as costs of consulting services intended exclusively for the research project. ▪ Other costs (operating expenses) including materials, supplies and similar products, exclusively used for the research project. Audit costs for the national reporting of the project (when applicable). ▪ Additional general expenses (indirect costs, as a percentage of personnel costs). Applicants must check the detailed description published on CDTI website. Please note that management and dissemination costs are not eligible for funding. **Project duration:** 12 to 36 months. **Project transnationality:** projects should be transnational by nature, therefore, each country/ region will be responsible for no more than 70% of the total budget project costs. **Compulsory Minimum Eligible Budget**: € 175,000 per partner (this amount applies to the project budget per partner, not the requested funding). **Mandatory National Application** Additionally to the international application process, those applicants requesting funding from CDTI must submit a formal application via the **CDTI electronic submission system** (*https://sede.cdti.gob.es*). The application must include a detailed description, in Spanish Language, of the activities to be undertaken by the company and the respective budget. Applicants must indicate their VAT (CIF) number in all their respective applications (both international and national). Further guidance will be published on CDTI website. **Deadline**

	for national application: 03.12.2021 17:00 CET. **Financial conditions** CDTI funding will be based on a financing package, entailing soft loans (up to 75% of the eligible budget, 85 % in exceptional cases) with a non-repayable part, up to 33 % of the loan. Specific financial conditions for ensuring the beneficiary's solvency would be required according to CDTI funding rules. CDTI will avoid double funding, and will not finance projects, or parts of projects, which have been already, funded through other national, transnational or EU calls. CDTI will be responsible for making the final decision regarding the awarding of funds to those Spanish applicants aiming to receive funding from CDTI, taking fully into account the assessment of the national full proposals, the transnational evaluation of the collaborative project, the previous funds received by the participants for other related projects, the fulfilment of eligibility and funding rules, and the financial resources available. **Further information** Applicants are strongly advised to check the detailed information available on CDTI website and to contact the NCP for getting advice about national funding rules, before submitting a proposal. Please check the complete national funding rules and relevant information about the call on the following links: *"Financiación CDTI para Proyectos de Investigación y Desarrollo"* http://www.cdti.es/index.asp?MP=100&MS=802&MN=2 *"Financiación CDTI para Proyectos Transnacionales en el marco de acciones ERA-NET"* *http://www.cdti.es/index.asp?MP=101&MS=831&MN=2* For further information, please contact the NCP or visit CDTI website: https://www.cdti.es/

Turkey

Specifications for CSP ERANET Additional Call 2021

Agency	TÜBİTAK
Contact	Cagri YILDIRIM / Hanife TUZCUOGLU Tel. +90 312 298 1884/1126 e-mail: ncpenergy@tubitak.gov.tr website: www.tubitak.gov.tr
Topics	The Agency potentially supports projects in all topics.
Type of RTD	The Agency potentially supports the following types of RTD, namely: Basic research, applied research, experimental development and innovation.
Eligible applicants	Calls are open for public institutions and private companies of all sizes as well as for universities and research institutes in Turkey.
Budget	EUR 700.000 (national budget)
Further specifications	Applicants from Turkey would be supported via: **1071 Programme - Support Programme for Increasing Capacity to Benefit from International Research Funds and Participation in International R&D Cooperation** The purpose of the 1071 programme is to support research and innovation activities of the Turkish stakeholders via enabling the cooperation of academy and industry for the international R&D projects. National application forms have to be used for the full proposal phase – download from http://www.tubitak.gov.tr.

Switzerland

Specifications for CSP ERANET Additional Call 2021

Agency	Swiss Federal Office of Energy (SFOE)
Contact	Stefan Oberholzer, stefan.oberholzer@bfe.admin.ch
Topics	The Agency potentially supports projects in all topics.
Type of RTD	The Agency potentially supports the following types of RTD, namely: • Industrial / applied research • Experimental Development
Eligible applicants	The Agency potentially supports all private and public applicants, namely: List the ones that can be supported • Private – SME • Private – large companies • Private – Non-profit research organisation • Higher education institution • Public research organisation • Public organisation Funding is primarily provided for pilot and demonstration project with TRL>5 (exceptionally TRL4) which underlie the national rules for such projects: - Funding is limited to 40% of the eligible project costs, which are the additional project costs that cannot be amortized over the expected lifetime of the developed installation or solution. Additional project costs are the additional costs compared to the costs of implementing an equivalent, conventional technology or solution. - Eligible funding recipients are private and public sector entities (companies, research institutes, municipalities, or communities consisting of several of the former). - Project topic contributes to increasing energy efficiency or use of renewable energy; - High application and success potential; - Project topic in line with the Swiss energy policy; - Gathered results are publically accessible and disseminated. - More criteria might be added depending on the topic / adjudication mode. In exceptional cases, smaller research type projects can be supported through the SFOE research programme application rules. The maximum funding rate for applied research is max. 100% of total costs for non-profit research organisations, max. 50% of total costs for SMEs and LEs; for experimental development is max. 50% of total costs for non-profit research organisations and max. 50% of total costs for SMEs and for LEs.
Budget	EUR 250.000 (national budget)
Further specification	Consortia should have significant industrial participation. National application forms have to be used for the full proposal phase A national proposal has to be worked out in parallel to the full proposal phase. Please contact SFOE before submitting pre proposal.

Israel

Specifications for CSP-ERANET Additional Call 2021

Agency	Ministry of Energy, the chief scientist office (CSO)
Contact	Dr Gideon Friedman, Gideonf@energy.gov.il Dr Yael Harman, yaelh@energy.gov.il
Topics	The Agency potentially supports projects all eligible topics and subtopics.
Type of RTD	The Agency potentially supports all types of RTD.
Eligible applicants	The Agency potentially supports all Israeli private and public applicants, namely: List the ones that can be supported • Private – SME • Private – large companies • Private – Non-profit research organisation • Higher education institution • Public research organisation • Public organisation • Municipalities
Budget	EUR 600’000 (national budget)
Further specification	The submission should follow the requirements presented in the CSO's tenders (Academia, Start-up and pilot & demonstration) according to the proposal TRL level, type of institution and the requested budget.