European Commission

Partnership Evaluation Report: **Clean Energy Transition Partnership (CETP)**

Horizon Europe and the Green Transition
Interim evaluation support study

Independent Expert Report

Research and Innovation

Partnership Evaluation Report: Clean Energy Transition Partnership (CETP)

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Partnership Evaluation Report: Clean Energy Transition Partnership (CETP)

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2024 Directorate-General for Research and Innovation EN

Table of contents

Table of Figures

Table of Tables

Key definitions, acronyms and glossary

Acronym	Description
AIT	Austrian Institute of Technology
BIPV	Building-Integrated Photovoltaics
CCS	Carbon Capture and Storage /Sequestration
CCU	Carbon Capture and Utilisation
CETP	Clean Energy Transition Partnership
CM	Call Module
CSP	Concentrated Solar Power
DOE	US Department of Energy
DUT	Driving Urban Transitions
EC	European Commission
ERA-NET	European Research Area Network
ETIP	European Technology & Innovation Platform
EU	European Union
IWG	Implementation Working Group (of the SET plan)
JPI	Joint Programming Initiative
MI	Mission Innovation
PV	Photovoltaics
RDI	Research, Development, and Innovation
R&I	Research & Innovation
RTDI	Research, Technology Development, and Innovation
SET plan	Strategic Energy Technology plan
SRIA	Strategic Research and Innovation Agenda
TRI	Transition Initiative
TRL	Technology Readiness Level

1. Introduction

This evaluation report is part of the interim evaluation of Horizon Europe's activities related to the Green Transition. The purpose of this evaluation report is to provide an assessment of the Co-Funded European Partnership Clean Energy Transition (CETP) against the evaluation criteria relevance, coherence, effectiveness, EU added value, additionality, directionality, international positioning and visibility, transparency, and openness, phasing out preparedness, and efficiency.

Co-funded Partnerships involve EU Member States and Associated Countries, with research funders and other public authorities at the core of the consortium. The partnership is based on a grant agreement between the Commission and the consortium of partners, resulting from a call for proposals for a programme co-fund action in the work programme of Horizon Europe[1].

The assessment of the partnership is based upon a mixed-method approach of both quantitative and qualitative data analysis comprising an overview of funding and project-related data, desk research activities and text analysis of the partnership strategic documents and related material, as well as material related to the monitoring progress of the partnership. We note that only limited material for CETP has been available, as the partnership has started only in 2022, and a first call for R&I projects was launched. The project selection of the first call took place in June 2023 during the interview and first drafting phase of this analysis.

The data collection process for the partnership evaluation comprised two phases, incorporating information from both H2020 and the initial phase of the partnerships in Horizon Europe. The primary data collection was concluded by July 2023. Supplementary data from the forthcoming Biannual Monitoring Report 2024 was incorporated in December 2023. Due to the short runtime of the Horizon Europe Partnerships, it is noteworthy to bear in mind that many of the partnerships' activities are still ongoing and have not yet been fully accomplished.

For this report, six expert interviews were performed to gain insights and validate the findings of the analysis. The interviews were conducted with representatives of the partnership's management board, coordinating managers of the transition pathways, call management, funding agencies, an applicant to CETP, as well as a representative of the European Commission. Beneficiaries of CETP were not interviewed, since the first R&I projects supported under CETP have started their work only as of September 2023.

[1] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en

1.1. Objectives

CETP is a transnational initiative on joint Research, Technology Development, and Innovation (RTDI) programming to boost and accelerate the energy transition. It contributes to the EU's goal of becoming the first climate-neutral continent by 2050 by pooling national and regional RDTI funding for a broad variety of technologies and system solutions required to make the transition. It fosters transnational innovation ecosystems from the local and regional level up to the transnational European level, thus aiming to overcome a fragmented European landscape.

The CETP is structured in seven Transition Initiatives (TRI): TRI1: Net-zero emissions energy system, TRI2: Power technologies, TRI3: Storage technologies, renewable fuels and CCU/CCS (Carbon Capture and Utilisation and Carbon Capture and Storage), TRI4: Heating and cooling, TRI5: Regional energy systems, TRI6: Industrial energy systems, TRI7: Built environment.[2]

1.2. Intervention Logic

The CETP intervention logic is based on the need to achieve climate neutrality for the EU and its energy transition. It focuses on specific objectives as outlined in the figure below.

Table 1: CETP intervention logic

Needs	Objectives	Impacts
Achieving climate neutrality in Europe by 2050 and achieving the clean energy transition in Europe	Fostering transnational innovation ecosystems from the local and regional level up to the transnational European level, thus aiming to overcome a fragmented European landscape.	Coordination and collaboration towards the green transition among national funding organisations from the EU, countries associated with Horizon Europe and international partners.
Implementation of the EU's Strategic Energy Technology Plan (SET plan) and strategies of the European Technology and Innovation Platforms related to Energy (ETIPs)	Pooling national and regional RDTI funding for a broad variety of technologies and system solutions required to make the transition happen	Generating knowledge and capacity building through the funding of R&I projects, and stimulating market uptake through Knowledge Community and Impact Network

[2] A detailed description of the Transition Initiatives (TRIs) is included in the Annex.

2. Implementation state of play

CETP launches annual calls for Research & Innovation (R&I) project proposals. It implemented the first call for proposals in 2022, and the second call was published in September 2023. Calls are implemented in a two-step procedure, with a pre-proposal and full proposal stage. Opening of submission for preproposals takes place in September with a deadline in November. Eligible preproposals will be evaluated and, if successful, invited to submit a full proposal in March of the following year. The full proposals will be evaluated and selected in June, and the start of funded projects is foreseen again in September. The whole call cycle, from call announcement to project start, takes a bit more than a year.

In the call 2022 there were 11 call modules opened. The total expected funding of the Joint Call 2022 was planned to reach over EUR 140 million and consisted of national/regional budgets and European Commission (EC) contribution, the so-called top-up. National/regional Funding Partners provide funding for entities based in their country/region, while the EC contribution will be used to top-up project budgets where national/regional funding has been exhausted. The funding target could by far not be reached. In the first call, EUR 86 million have been invested in 47 projects, co-funded at 70% from national and 30% from EC resources. The success rate in the call was about 40%.

The CETP Joint Call 2023 is the second annual co-funded call under this partnership. To cover different topics and Research, Development, and Innovation (RDI) types, the call is structured into 12 Call Modules aimed at different energy technologies and/or systems as well as both research and innovation-oriented approaches on different Technology Readiness Levels (TRLs), complementing and completing each other. For the 2nd joint call the number of pre-proposals (206) was almost double of the first joint call (112). The requested funding of all pre-proposals together was in total almost 369 million Euro.

Each project proposal must include at least three independent legal entities from at least three different countries participating in the CETP Joint Call 2022, out of which at least two must be EU Member States or Horizon Europe Associated Countries. Consortia may consist of partners from organisations such as universities, companies, industry organisations, local/regional governments, research organisations and NGOs. Some Call modules specify additional requirements or restrictions regarding the types of partners to be included.

The call structure is relatively complex for proposers because of TRIs that are subdivided into call modules, funding organisations that participate only in certain call modules or can fund only certain types of organisations (e.g. universities or businesses), different Technology Readiness Levels, and additional conditions on participants (e.g. innovation actors) that need to be considered.

A significant number of countries and funding organisations participated in the first call in 2022: 22 EU Member States, 5 countries associated with Horizon Europe, and 4 international partners (Canada, UK, Switzerland, USA).

3. Findings

3.1. Relevance

The Clean Energy Transition Partnership contributes to the Green Transition in that it funds research and innovation in the energy transition field. It is embedded in and underpins various European initiatives and strategies for the energy transition: it supports the implementation of the European Strategic Energy Technology Plan (SET-Plan)[3] and builds on existing SET Plan initiatives (ERA-NETs, IWGs, ETIPs, etc.). The partnership intends to contribute to the achievement of the EU decarbonisation targets set in the EU's longer-term strategic vision, A Clean Planet for All and in the Fit-for-55 package. It supports the implementation of EU energy and climate strategies such as the EU strategy for energy system integration, the EU strategy on hydrogen, the EU strategy on offshore renewable energy and the REPowerEU Plan.

The Strategic Research and Innovation Agenda (SRIA) of the CETP was elaborated in 2020 by the management of the partnership with the support of researchers from the Austrian Institute of Technology (AIT) and based on a stakeholder involvement and consultation process. Interested Member States and Associated Countries, SET Plan Implementation Working Groups (IWGs), ERA-NETs, EERA Joint Programs, European Technology and Innovation Platforms (ETIPs) and national stakeholders were involved through several workshops and meetings.

An update of the SRIA is not yet on the agenda of the CETP because the partnership is still early in its implementation. The continuous update of call topics is ensured through the involved partners in CETP, who are experts in the energy field, and through the close links and involvement of the IWGs and, ETIPs, and the EC (e.g. in the governing board). For the future, an update of the SRIA is envisaged for taking into account developments in the energy transition field on the market (e.g. circularity, critical raw materials, manufacturing technologies) and at the policy level; the exact process has still to be specified.

CETP is also relevant in that it fills a funding gap for researchers and innovators. With its mid-size project budgets, it is situated between large European projects financed, e.g. in Horizon Europe and nationally funded projects with usually smaller budgets and single-country consortia.

3.2. Coherence

Coherence is a significant challenge for CETP, internally in the first place, as well as externally towards other partnerships. The internal challenge is because CETP builds on nine predecessor ERA-NETs and Joint Programming Initiatives (JPIs) on wind, ocean, solar energy, and others. The heterogeneity of these predecessors is reflected in the current structure of seven Transition Initiatives, which cover a broad range of energy transition topics. However, it has been a clear policy aim at the outset of the CET Partnership to integrate various predecessor ERA-NETs on energy into this co-fund partnership. This approach supports the pooling of resources in the frame of a bigger partnership, better coordination of call procedures, and the establishment of continuity in calls. Annual calls for R&I projects will be launched by CETP, in difference to the predecessor ERA-NETs, where some were launching one-off funding activities, and some were facing the challenge of reduced partnerships and smaller call budgets in self-sustained calls (without EU co-funding). Still, integrating these different topics, methods and approaches towards R&I funding is difficult, as once-established procedures tend to be perpetuated. The interaction between the TRIs is limited, and as one interviewee formulated this finding, they remain still in “silos”. The full

[3] https://energy.ec.europa.eu/topics/research-and-technology/strategic-energy-technology-plan_en

integration into a coherent partnership with a shared culture and coherent implementation procedures will require significant efforts from the partnership management and TRI leaders.

What concerns the external component, coherence needs to be ensured with other partnerships that overlap on TRIs, such as the Clean Steel and the Clean Hydrogen partnership, the Sustainable Blue Economy partnership, as well as Driving Urban Transitions (DUT) partnership (which overlaps, e.g. with TRI7 of CETP). Creating synergies among partnerships and other initiatives is a challenge because of their variety (e.g. public-public, public-private partnerships) and the number of these initiatives with their strategic processes and documents. CETP is actively tackling this challenge; for example, the funding activities in CETP and DUT, which are both working on energy efficiency in the built environment, are closely coordinated (which is facilitated by the fact that both partnerships are coordinated by the Austrian Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology – BMK). In practice, call documents include references to other partnerships; e.g. the DUT call 2023 refers to specific topics supported under CETP. Structured cooperation has been established (by August 2023) also with the partnerships Processes4Planet, Clean Hydrogen, Zero-Emission Waterborne Transport, Circular bio-based Europe, and with the EIT InnoEnergy.

3.3. Efficiency

The portfolio of activities includes funding R&I projects in the first place, which is certainly suitable for the funding agencies involved. The call topics and the procedure of topic selection are supported by interviewees, although planning more time for input from funding agencies was suggested. In the future, a stronger connection to the EU Innovation Fund, the EU Investment Bank, and other funding sources for the implementation of technologies developed under CETP will be required. This connection could be ensured, e.g. by personal contacts to these funding bodies, by organising information and training events on how to apply these instruments, pre-selecting suitable high TRL technologies for innovation funding, and other measures. This will help secure funding for upscaling, for bringing technologies at high TRL faster to the market, and for speeding up the Green Transition. CETP normally funds TRL 3-7; CETP cannot fund the higher TRL 8-9 because these will be big demo plants with investments of up to and above 100 million Euro.

After this first year and as a result of the first call in CETP, funding agencies face a limited number of funded projects, while the effort for implementing the call has been relatively high because all documents and call promotion measures had to be set up anew. Once the calls have been implemented 2-3 times, the learning effect and routine should reduce the effort required from funding agencies and smoothen the overall implementation.

A challenge for efficiency is the difference in procedures among the funding partners. Some partners require national application or national evaluation procedures. These national requirements result in a rather long period of implementing a call; the funding partner with the most time-consuming procedure determines the overall time required for the CETP call implementation.

The efficiency of call management procedures is tackled with external support: an independent expert monitors the call procedures (call documents, etc.), and a CETP internal task force deals with the suggestions and oversees the implementation of improvements.

Cost Effectiveness

After the first call round in CETP, we cannot assess whether the available resources will be sufficient for the implementation of its Strategic Research and Innovation Agenda (SRIA). The availability of resources may become a challenge in the future as the programme becomes better known in the R&I community and as the urgency of speeding up the green transition will be better understood. At this stage, however, in the first call round in 2022, the available resources could by far not be spent (60% of the national commitments of Euro 143 million only), and the success rate in the call reached about 40%.

The reasons for this result need to be closely investigated and lessons learned for stimulating more project submissions to the CETP. One of the reasons is that it was the first call in the CETP, and that the programme was not well known yet in the R&I community. Also, the first call had to be implemented quickly after the CETP launch. Short deadlines have played a role in limiting submissions. But the call rules should also be considered, as these are complex with a range of call modules under different TRIs, with funding agencies supporting different TRLs, and only certain topics and not the whole range of call modules, and involving different Technology Readiness Levels.

Overall, the EU has indicatively planned Euro 210 million for co-funding of CETP calls; if the national funding share is 70% then the total budget would be Euro 700 million throughout CETP from 2022-2028. But national funding shares may of course, exceed the EU contribution, and a higher budget be reached. It remains to be seen in the upcoming calls in which demand CETP stands in the R&I community and whether these resources will be required and invested in clean energy projects.

3.4. Effectiveness

The pooling of national programmes for a joint partnership on the clean energy transition has been the main driver behind CETP. And with its many countries and funding partners involved, this has been a major achievement at this point. The CETP topics are very actual and coordinated with key stakeholders at the EU and international level (e.g. SET plan, ETIPs, Mission Innovation). One of the main barriers reported by interviewees is that CETP is a relatively new programme and not well known yet in the R&I community. This information barrier should, therefore, be addressed in upcoming calls. Another issue is that there are significant resources available at the national level in EU countries to support R&I on the energy transition. This may inhibit some potential proposers from applying for a more complex transnational programme such as CETP, which requires more effort (e.g. for consortium building) in the proposal phase.

In terms of outcomes and impact, the CETP is focused for the moment on generating knowledge and capacity building through the funding of R&I projects and on coordination and collaboration towards the green transition among national funding organisations from the EU, countries associated with Horizon Europe and international partners. The business and innovation side is, of course, involved in the development of CETP TRIs and call topics, as well as in funded R&I projects. The specific stimulation of market uptake will kick in at a later stage when its Knowledge Community and Impact Network will be operational based on projects funded under CETP.

3.5. EU added value & additionality

The CETP has been very successful in pooling national and regional programmes from 22 EU Member States and in generating herewith added value for the EU and its member states.

It has been less successful in the first call to invest the available financial resources into projects though. The reason for this strong coordination effect relies on the integration of nine predecessor ERA-NETs and JPIs, on which CETP is built. CETP could in the future, try some more efforts to involve also the Central and Eastern European EU members, which are not yet involved. These are Bulgaria, Croatia, Slovenia, and Slovakia. Also, an outreach to countries in this region which are important for the EU and associated with Horizon Europe, such as Moldova, Georgia, Ukraine, Serbia, and North Macedonia could be envisaged. But there should, of course, also be readiness and an effort from the side of these countries to become involved with the CETP and dedicate national financial R&I resources to it.

CETP creates added value for the EU through its contribution to the implementation of major EU strategies, the SET plan or the Repower EU plan[4]. For these aims, the partnership provides funding for R&I, for businesses, and even for communities and municipalities.

3.6. Directionality

CETP covers a broad range of topics on the clean energy transition and fills a gap between Horizon Europe (HE) and national calls with its mid-range project size. It supports R&I projects, which are highly important for the Green Transition: in the Call 2022, 47 projects were selected for funding. Among those, 11 projects on solar energy were supported, as well as 10 projects on Carbon Capture and Sequestration, and 5 projects each on hydrogen and heating & cooling. CETP is expected to deliver herewith important results for the EU and its citizens. CETP moves clearly forward to achieving its strategic vision of funding for a broad variety of technologies and system solutions required to make the clean energy transition happen. European strategic autonomy and technological sovereignty are highly relevant for CETP, as the field of energy is a critical and potentially highly vulnerable sector. This is reflected by the overarching challenge identified by CETP, which is a “sustainable, safe, secure and resilient energy system”.

3.7. International positioning and visibility

The positioning of CETP among international partner countries is certainly a strong point of CETP. It involves important international funding agencies, the US Department of Energy (DOE), the UK Scottish Enterprise, the Swiss National Science Foundation, and Emissions Reduction Alberta from Canada. Contacts to additional international partners are actively sought, e.g. Tunisia and India have been attracted as new funding partners to the call 2023. Importantly, international outreach is ensured and can be developed in the frame of CETP calls through its link to Mission Innovation (MI). MI is an international partnership with more than 23 countries, including Chile, the United States, China, Japan, South Korea, and Australia, and it deals with the energy transition at the international level. In the first call round in 2022, there were two projects supported with US participation, but no one yet with Canadian partners. The EC promotes the international positioning of CETP and refers international partners to the partnership for joint funding activities on energy R&I.

The visibility of CETP among the R&I community needs some improvement; the first call in 2022 had to be prepared in a short period, which did not allow for sufficient information and promotion activities.

[4] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en

3.8. Transparency & Openness

The CETP is open towards new members of the partnership. Several regional funding partners at the subnational level have been involved in the partnership, which demonstrates the flexibility of integrating smaller partners catering for specific regional target groups. Contacts to new funding partners are being established through the Transition Initiatives and then followed up at the Governing Board and coordinator levels or directly via top-level coordination.

The CETP call modules (CM) and their specific topic descriptions are developed in the frame of the seven Transition Initiatives under the guidance of the TRI leaders. They are then circulated within the partnership to the funding organisations for comments. This is followed by coordination with the EC and collecting possible revisions. The transparency towards the national funding partners and the EC is ensured herewith, as well as coordination with the Framework Programme for the complementarity of topics. The timing of this process was, however, described as rather tight, which limits possible input to the specific call topics from funding parties. This may also be due to the hurried implementation of the first call in 2022, but an improvement should be considered in the future.

Gender has not been discussed in the SRIA of the CETP. Nevertheless the requirement of a gender equality plan is included in the CETP call documents and described accordingly. Furthermore, gender is included as a selection criterion for projects to be funded; gender balance will be considered in case projects are placed in an equal position. The management of the seven TRIs is distributed among three female colleagues and two male colleagues (status November 2023); for two TRIs, no coordinating person is listed on the CETP website.

3.9. Phasing out preparedness

Phasing out preparedness is not an issue for the CETP after just one year of existence and a timeline of about 7 years of implementation. Given the importance of the energy transition, the challenge may rather be about preparedness for continuity.

4. Conclusions

The CETP is highly relevant for the EU's green transition in that it supports the implementation of the SET plan with R&I projects on the clean energy transition. It generates important EU-added value by involving 22 EU Member States and 5 countries associated with Horizon Europe. It has a strong international positioning and is open to a variety of partners; it involves funding partners from Canada, the USA, Switzerland and the UK, and it is linked to Mission Innovation. Regional funding partners at the sub-national level have been integrated, too. Bringing all these different players together, as well as linking up R&I communities of the involved countries on a key aspect of the green transition, creates value for the EU. In terms of efficiency and effectiveness, it is after one year of CETP early for assessing the situation. In the first call, 2022 the effort of implementing the call in relation to funded projects was high. The call documents and call promotion had to be set up, while the available call budget could by far not be spent (only 60% of available national funding commitments were invested). However, in the 2nd year of CETP, the partnership already received many more pre-proposals to its Call 2023: the figures nearly doubled to 206 pre-proposals (as compared to 112 in the Call 2022), which is an encouraging sign.

The main challenge for CETP is coherence, especially its internal coherence. The reason for this situation is that CETP is based on 9 predecessor initiatives in the energy field and some procedures and approaches of these initiatives are perpetuated in CETP. While CETP is very flexible towards its involved funding partners, for the proposers of the programme the different TRIs, Call Modules and call conditions seem a bit complicated. A simplification could help make the programme more attractive, generate more interest and streamline the internal management. For example, funding agencies could be motivated to support all call modules and all TRLs per involved country so that navigating of funding opportunities in CETP would be made easier for proposers. Terminology is another issue: while the terms "TRI" and "call modules" reflect the origins of CETP and its structure, proposers need to get used to yet another set of terminology in a European funding programme. Just mentioning the topical fields supported under CETP (e.g. solar energy, energy efficiency) would simplify CETP for proposers. For internal management, the strong subdivision into TRI and call modules could be tackled, and more integration could be aimed for.

A continuity of implementation procedures from the predecessor initiatives and separation of TRIs in this respect hampers effectiveness. Efforts should be made to better integrate the different call cultures and procedures into a common CETP approach to R&I funding. Finally, the visibility of CETP among the R&I community should be improved to generate more interest among proposers and take advantage of the available financial resources for the CETP calls.

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6. Annexes

6.1. Supplementary evidence: Background to the initiative

6.1.1. Predecessor Initiatives

The Clean Energy Transition Partnership is based on a range of 9 predecessor initiatives, which are European Research Area Networks (ERA-NETs) and Joint Programming Initiatives in the energy field. These predecessors are:

- Accelerating CCS Technologies (ACT), an ERA-NET co-fund supported in H2020 and operational since 2016 with the aim to establish CO2 capture, utilisation and storage (CCUS) as a tool to combat global warming (https://www.act-ccs.eu/).

- ERA-NET Bestf3 for large scale investment in close-to-market implementation of bioenergy, an ERA-NET co-fund supported in H2020 and running from 2016-2020 (https://www.era-learn.eu/network-information/networks/bestf3).

- CSP ERANET on bridging the gap between research and commercial deployment in the Concentrated Solar Power (CSP) technology, an H2020 ERA-NET co-fund running from 2019-2024 (https://csp-eranet.eu/.

- Demowind2 on economic development and cost reduction targets for European offshore wind, an ERA-NET co-fund supported in H2020 and running from 2016-2020 (https://www.era-learn.eu/network-information/networks/demowind-2)

- GEOTHERMICA on promoting research and innovation in geothermal energy to make geothermal energy reliable, safe and cost-competitive; an H2020 ERA-NET co-fund running since 2017 (http://www.geothermica.eu/).

- OCEANERA-NET COFUND working on ocean energy and focusing on the demonstration and validation of innovative technologies for the generation of electricity from waves, tidal current, tidal range, salinity gradient and ocean thermal energy conversion, an H2020 ERA-NET co-fund running from 2017-2022 (https://www.era-learn.eu/network-information/networks/oceanera-net-cofund).

- Smart Energy Systems ERA-Net on developing technologies and solutions in thematic areas like smart power grids, regional and local energy systems, heating and cooling networks, digital energy and smart services, (https://www.eranet-smartenergysystems.eu/).

- SOLAR-ERA.NET is working in the field of solar electricity generation, i.e. photovoltaics (PV) and concentrating solar power (CSP) / solar thermal electricity (STE), an H2020 ERA-NET co-fund running since 2016 (https://www.solar-era.net/.

- JPI Urban Europe, which defines itself as a knowledge hub on urban transitions. This Joint Programming Initiative (JPI) has been established in 2010 (https://jpi-urbaneurope.eu/).

6.1.2. Governance of CETP

The Governance of the CETP includes the following elements:

- The CETP Governing Board, which includes the CETP coordinator, the EC, and other selected participants.
- The CETP General Assembly, which represents all involved funding organisations.
- The CETP Advisory Board

6.1.3. CETP Transition Initiatives (TRI)

CETPartnership	
System integration	Enable technologies
TRI1 Net-zero emissions energy system	TRI2 Power technologies
TRI5 Regional energy systems	TRI3 Storage technologies, renewable fuels and CCU/CCS
TRI6 Industrial energy systems	
TRI7 Built environment	TRI4 Heating and cooling

Figure 1: CETP Transition Initiatives

The seven Transition Initiatives (TRIs) focusing on RDI Challenges that address various technologies and system aspects connected to the clean energy transition, as well as cross-cutting dimensions.

- TRI1: Net-zero emissions energy system
- To develop optimised, integrated net-zero emissions energy systems, with electricity distribution and transmission grids as the “backbone” and with a high level of integration among all energy carrier networks, supported by energy storage and power conversion processes.
- TRI2: Power technologies
- To develop a pool of zero-emission power technologies and solutions based on renewable energy sources as the backbone of the future energy system, being able to deliver carbon-neutral electricity accessible to all and to contribute to the resilience of the system.
- TRI3: Storage technologies, renewable fuels and CCU/CCS
- To provide cleaner technological solutions for storage technologies, renewable fuels, CCU (Carbon Capture and Utilisation) and CCS (Carbon Capture and Storage) contributing to significant CO2 reduction by 2030 and climate neutrality by 2050.
- TRI4: Heating and cooling
- To provide enhanced and improved heating and cooling technologies and systems for all major parts of Europe by 2030 and to enable 100% climate-neutral heating and cooling by 2050.

- TRI5: Regional energy systems

- To develop and validate integrated regional and local energy systems that efficiently enable a secure, resilient and CO2-free regional energy supply for a specific regional context (up to and beyond 100% in the dynamic regional or local supply by 2030) and provide tailor-made solutions for individual regional and bring them together at European level.

- TRI6: Industrial energy systems

- To develop and demonstrate a set of technical solutions for integrated industrial energy systems that enable efficient carbon-neutral industrial production sites as parts of the entire energy system.

- TRI7: Built environment

- To provide solutions and technologies for existing and new buildings to become an active element

6.1.4. Mechanisms for engagement /Innovation

Knowledge Communities

The concept of Knowledge Communities in CETP has been inspired by similar activities in Smart Energy Systems ERA-NET. As it will be based on projects funded under CETP, it is not yet operational. It will be implemented through joint workshops and knowledge exchange among projects in a certain field, possibly according to TRIs, and a virtual platform.

Impact Network

An Impact Network is planned to be established in the frame of the CETP for accelerating the upscaling, replication and market diffusion of innovative solutions. This will foster the uptake of cost-effective clean energy technologies.

6.2. Supplementary evidence: Implementation state of play

Funded projects

In the first CETP call implemented in 2022, 47 projects were selected for funding and a budget of 86 million Euro allocated. The distribution of these projects over the TRIs shows that most were supported under TRI 3 storage technologies, renewable fuels, CCS with 15 projects, followed by TRI 2 power technologies with 14 projects; all other TRIs have 5 or less projects supported. This distribution depends on the open call topics, but also on availability of funding for a certain TRI.

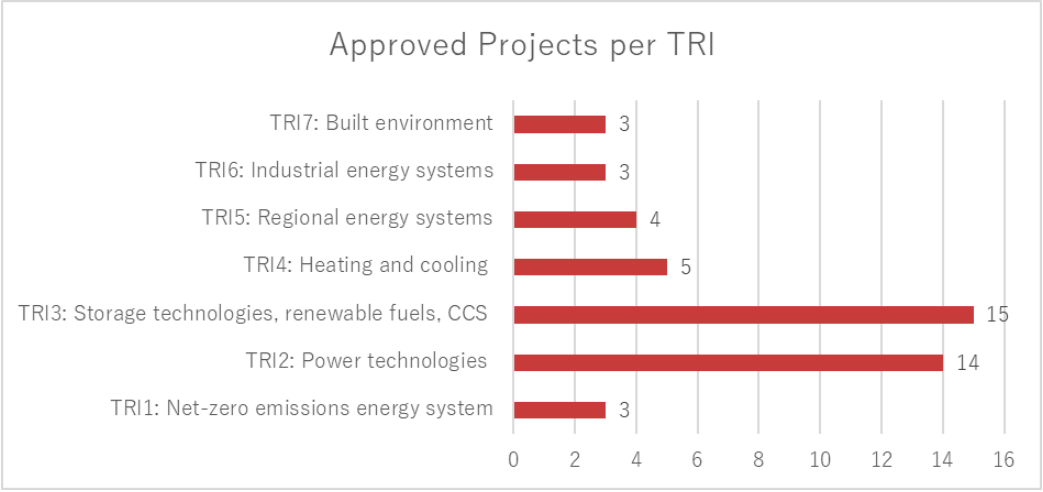

Figure 2: CETP call 2022 – approved projects per TRI

The distribution of approved projects per call module shows that the call module on CCS and the module on Renewable Energy (RE) technologies have each 10 supported projects. A search on keywords per project indicates that the most frequently funded renewable energy technology is solar energy: 11 projects are dealing with Photovoltaics (PV), Concentrated Solar Power (CSP), solar-thermal technology, or building-integrated PV (BIPV). 3 projects work on wind energy, and two projects on wave energy. Among clean energy technologies, Carbon Capture and Sequestration has been most important with 10 projects, and hydrogen, as well as heating and cooling with 5 projects each come second.

The country most involved in funded projects is Germany with 25 projects, followed by Spain with 19. Among the smaller countries it is Sweden with 17 projects and Norway with 14 projects, which have the highest involvement shares. The involvement ranking among countries associated to Horizon Europe is led by Norway, followed by Turkey (4 projects), Iceland, Israel and UK (Scotland) with 1 project each. Switzerland and USA are not

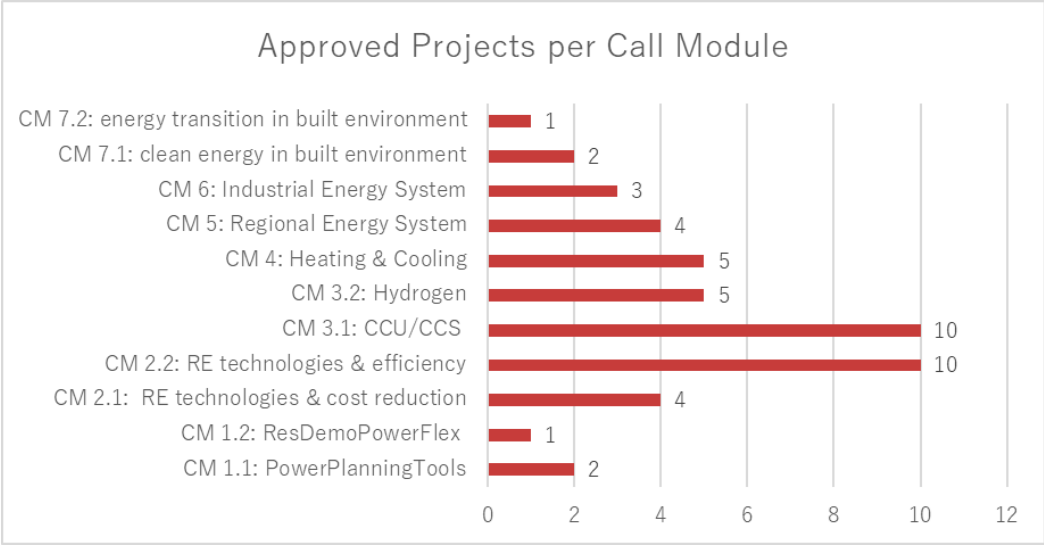

Figure 3: CETP call 2022 – approved projects per call module

associated to Horizon Europe; they participate in 4 and 2 projects respectively funded under the CETP.

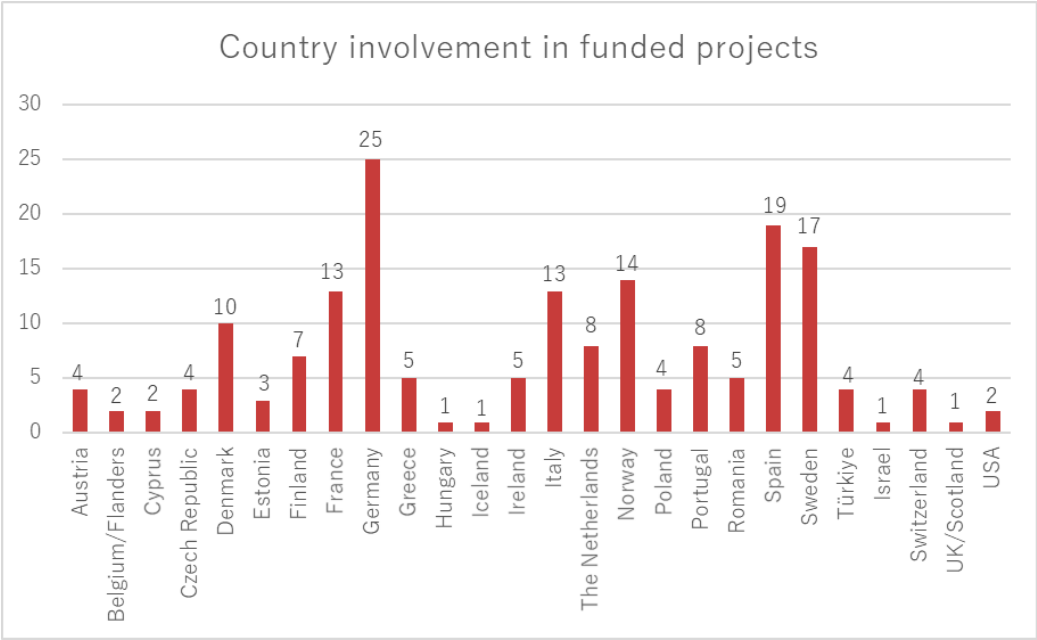

Figure 4: CETP call 2022 – country involvement in funded projects

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This evaluation report is part of the interim evaluation of Horizon Europe activities related to the Green Transition. It presents the assessment of the Co-Funded European Partnership Clean Energy Transition (CETP) against the evaluation criteria of relevance, coherence, efficiency, effectiveness, EU added value, additionality, directionality, international positioning and visibility, transparency and openness as well as phasing out preparedness. The evaluation of the partnership is based upon a mixed-method approach including quantitative and qualitative data analysis.

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