



CETPartnership Joint Call 2022

Webinar from RCN, Norway, 29 September 2022



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Agenda 29.09.2022

- Velkommen, *Ragnhild Rønneberg*
- Introduksjon av CETP-teamet hos Forskningsrådet
- Litt generelt om CETP, *Ragnhild*

- TRI1. European Energy system, *Marianne Haavardsholm Aandahl*
- TRI2. Power technologies, *Marianne*
- TRI3. CCU/CCS-technologies, *Aage Stangeland*
- TRI3. Hydrogen & Renewable fuels, *Åse Slagtern*
- TRI4. Heating and cooling, *Per Arne Karlsen*

- Generelle krav til søknader, *Ragnhild*
- Spørsmål og svar



The CETPartnership a transnational collaboration ...



- enables more than **50 national and regional** RTDI programme owners and managers from more than **30 countries** to align their priorities
- **pools** national and regional **RTDI funding**
- initiates and **funds transnational RTDI projects** for a broad variety of technologies and system solutions required to make the transition
- **empowers the clean energy transition** and contributes to the EU's goal of becoming the first climate-neutral continent by 2050
- A total of **140 M€** from funding agencies is available for the 2022 call

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TRIs
and the
call modules

The CETPartnership has established **7 TRIs** which address the seven CETPartnership RTDI Challenges as described in the Strategic Research and Innovation Agenda (SRIA).

Each of the TRIs is led by one of the CETPartnership partners, known as the TRI Lead.

 TRI 1: Integrated Net-zero-emissions Energy System	 TRI 2: Enhanced zero emission Power Technologies	 TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS	 TRI 4: Efficient zero emission Heating and Cooling Solutions
 TRI 5: Integrated Regional Energy Systems	 TRI 6: Integrated Industrial Energy Systems	 TRI 7: Integration in the Built Environment	

 Funding from RCN



Submit your proposal



Documents



Matchmaking Platform



Carefully read the **full call text**, the call text for the **various call modules** as well as the **national annexes !!!!**

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Joint Call
2022
Call
Procedure

Timeline for call procedure

14 September 2022
The call opens
• Call text is published

23 November 2022
Step 1 (Pre-proposal)
• Expert evaluation
• General eligibility check
• National/regional eligibility check

20 mars 2023
Step 2 (Full proposal)
• Expert evaluation
• General eligibility check
• National/regional eligibility check

June 2023
Decision
Communication
with
national/regional
Funding Partner



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TRIs
and the
call modules

In the following we will only concentrate on the four TRIs (TRI1, TRI2, TRI3 and TRI4) where Norway/RCN is involved.

Research partners from Norway can join other TRIs, but then with their own funds.



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TRI 1

TRI 1: Integrated Net-zero-emissions Energy System

The main objective of TRI 1 is to **develop the optimised, integrated European net-zero emissions energy system**, where electricity distribution and transmission grids are seen as the “backbone” of the future low-carbon energy systems with a high level of integration among all energy carrier networks, by e.g. coupling electricity networks with gas, heating and cooling networks, supported by energy storage and power conversion processes.

TRI 1 Lead

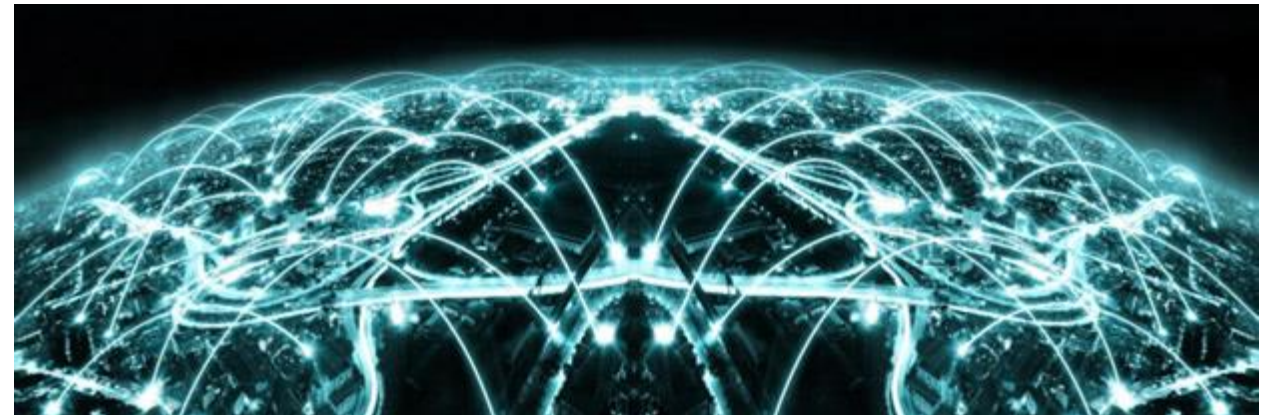
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TRI 1: Integrated Net-zero-emissions Energy System

Call modul 1.1: (Power Planning Tools) Foster the development and use of **the tools, methods, and advanced modelling** necessary to plan and operate future integrated energy systems enhancing inclusiveness, sustainability and resilience

TRL do not apply (non-technological work)

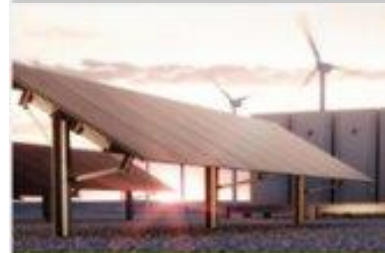
Call modul 1.2: (RESDemoPowerFlex) Develop, design, test and demonstrate advanced inclusive, sustainable and resilient **technologies, systems, control mechanisms and solutions to efficiently manage high shares of renewables** in the European system at distribution and transmission level by 2030 and a high level of seamless integration of different energy vectors and networks

TRL 5-7 or lower if aimed at reaching higher TRLs in course of the project



TRI 1: Integrated Net-zero-emissions Energy System

Call Module: TRI1
PowerPlanningTools



TRI 1: Integrated Net-zero-emissions Energy System

Call Module: TRI1
RESDemoPowerflex

TRI 2: Enhanced zero emission Power Technologies

TRI 2's Mission is 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.

TRI 2 Lead

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TRI 1 at RCN:

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TRI 2: Enhanced zero emission Power Technologies

Call module 2.1: (Cost reduction) Addresses the technological, environmental, social and economic challenges; Reduce the LCoE by **decreasing the cost per unit of power** (CAPEX = Euro per kW installed capacity) / Demonstrate the reliability of a scale up or an increase of the power unit with a positive impact on LCoE or Increase overall efficiency (at the system level) reducing the LCoE.

TRL 6 or above

Call module 2.2: (Efficiency/performance) Addresses the strategic challenges of **performance and technology development (efficiency and cost)** of all RES technologies: Increase the conversion of energy to power and/or technology performance and/or lifetime by use of new materials / Develop innovative components ensuring higher efficiency / Increase the efficiency and reliability of the energy transfer/conversion technology towards power production / Develop modelling approaches and features able to **increase system energy efficiency**.

TRL 4 or above



TRI 2: Enhanced zero emission Power Technologies

Call Module: TRI2
Advancing RE technologies for power production through cost reduction



TRI 2: Enhanced zero emission Power Technologies

Call Module: TRI2
Breakthrough R&D to increase RE power technologies efficiency

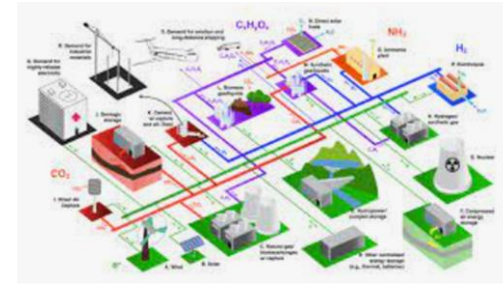
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Specific requirements for Norwegian activities in TRI1 and TRI2

- | | |
|--------------------------------------|-------|
| - National & European perspective(s) | TRI 1 |
| - Quantum computing is out of focus | TRI 1 |
| - On/offshore wind | TRI 2 |
| - PV | TRI 2 |
| - Floating PV | TRI 2 |

Wind (on/offshore): Improving the understanding of atmospheric and wind power plant flow physics for designing novel wind turbine systems

Offshore renewables: Development of wind or PV floating systems; design of innovative solutions for coupling different RE source



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Specific requirements for Norwegian activities in TRI1 and TRI2

TRI1 Energy Systems :

- The Norwegian activities must comply with topics within Energy Systems as listed in the [Portfolio Plan for Energy, transport and low emissions](#) and the priorities in the revised [Energy 21 strategy](#).

TRI2 Power Technologies :

- The Norwegian activities must comply with topics within Power technologies as listed in the [Portfolio Plan for Energy, transport and low emissions](#) and the priorities for sun PV and onshore/offshore wind as described in the [revised Energy 21 strategy](#).

We will support projects up to a range of NOK 4-6 M pr project (but not strictly limited to this) for TRI 1 and TRI2 Call Modules.



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TRI 3

TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

The main aim of TRI 3 is to **provide technological cleaner solutions for storage technologies, hydrogen and renewable fuels, CCS** (Carbon Capture and Storage) **and CCU** (Carbon Capture and Utilisation), promoting RD&D and innovation projects until 2030, to achieve the European goal of climate neutrality by 2050.

Two call modules: 3.1. **CCU/CCS - technologies** 3.2. **Hydrogen and renewable fuels**

TRI 3 Lead

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TRI3 at RCN

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Hydrogen & Renewable fuels – Åse Slagtern (asl@rcn.no)



EUROPEAN PARTNERSHIP



Co-funded by
the European Union

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Call module 3.1: CCU/CCS technologies – R&D targets

- Advancing **lower cost capture** technologies and technologies that can effectively handle flue gases with lower CO₂ concentration.
- **CO₂ transport and storage**, including elements that are needed for characterization and management of large-scale permanent storage of CO₂
- **Enabling CCUS** technologies of significant importance and relevance for the industry
- **Negative emission** technologies (NETs), including Carbon Dioxide Removal (CDR), Direct Air Capture technologies (DAC), and Bioenergy with CCS (BECCS)

- Projects should aim at **TRL5 or higher** – smaller parts at lower TRL are allowed
- Projects should provide **significant results to the CCUS domain by 2030** (show significant CO₂ reduction)
- aims to support projects with an expected requested grant (but not limited to) in the range of **1 to 5 MEUR**



TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3
CCU/CCS technologies



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Call module 3.1: CCU/CCS technologies – specific requirements

- Projects must address one or several of the research and innovations activities in the SET-Plan Implementation Plan and/or the Priority Research Directions (PRDs) identified at the Mission Innovation CCUS
- The consortia are required to demonstrate the interest of industry partner(s) by actively involving them in the project.
- Projects focusing on developing new pilot and demonstration facilities are required to illustrate the potential for upscaling to industrial size either in a demo phase or early commercial phase.
- In addition to providing technological solutions, projects are required to address cross-cutting dimensions.
- Where relevant, CO₂ utilisation projects should include documentation to show that the project processes result in reductions of CO₂ emissions.
Further information is provided in a number of the relevant funding partners' national/regional requirements.



TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3 Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS



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Specific National requirements for Norwegian activities in TRI3.1 CCU/CCS

- Read the CLIMIT Program Plan carefully.
- Norwegian activities have to comply with the CLIMIT Program plan
- CCS can be supported
- CCU cannot be supported unless long-term CO₂ storage can be documented
- Projects should be beneficial for further development of Longship

Economical constraints

- NOK 60 mill. available to Norwegian partners (in total)
- Maximum support per project is NOK 15 mill



TRI 3: Enabling Climate
Neutrality with Storage
Technologies,
Renewable Fuels and
CCU/CCS

Call Module: TRI3
CCU/CCS technologies



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Call module 3.2: Hydrogen and renewable fuels

Scope

Important for a net-zero energy system is the cost-effective provision of hydrogen from various sources, thermo-, photo- and electrochemical solar fuels, as well as the supply of advanced biofuels from sustainable biomass.

- **Hydrogen** plays a key role in any industrial society, since hydrogen can be used directly as a fuel and for many essential chemical processes, as an input to produce e-fuels, biofuels and other hydrogen carriers like ammonia, or to power gas turbines.
- **Biomass** can be used to produce different kinds of fuels. Hydrogen production with BECCS is attractive as it would deliver negative emissions.
- The use of **renewable ammonia** is also expected to increase not only for fertiliser but also for e-fuels.

Expected impacts

- Projects are expected to have a significant bearing on accelerating the development and use of hydrogen and renewable fuel technologies and provide results showing significant CO₂ reduction by 2030.



TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3
Hydrogen and
renewable fuels



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Call module 3.2: Hydrogen and renewable fuels – R&D targets

This call module will focus on the development and demonstration of innovative and cost-, energy and carbon-/resource-efficient technologies for hydrogen and renewable fuels along the whole value chain:

- Production of hydrogen and renewable fuels including conversion into synthetic fuels. Hydrogen production may differ with respect to available resources and system requirements.
- Transport
- Storage
- End use



TRI 3: Enabling Climate
Neutrality with Storage
Technologies,
Renewable Fuels and
CCU/CCS

Call Module: TRI3
Hydrogen and
renewable fuels

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Call module 3.2: Hydrogen and renewable fuels – Requirements

- The consortia are required to demonstrate the interest of industry partner(s) by actively involving them in the project.
- Developing new pilot and demonstration facilities are required to illustrate the potential for upscaling to industrial size either in a demo phase or early commercial phase.
- Cross-cutting dimensions should be considered as parts of the project
- Addressing one or several of the research and innovations activities in the SET-Plan Implementation Plan.
- Support projects aiming to **TRL5 or above**
- The Call Module aims to support projects with an expected requested grant (but not limited to) in the range of **1 to 5 MEUR**.



TRI 3: Enabling Climate Neutrality with Storage Technologies, Renewable Fuels and CCU/CCS

Call Module: TRI3
Hydrogen and
renewable fuels



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National requirements for Norwegian activities in TRI3.2: Hydrogen & Renewable fuels project

- A total of up to 3 M € (approx. 30 Mill NOK) is available for Norwegian applicants
- We will support projects up to maximum NOK 10 M pr. project for this call module
- The Norwegian activities must comply with topics within hydrogen as listed in the [Portfolio Plan for Energy, transport and low emissions](#) and/or the topics within hydrogen as listed in the [CLIMIT Program Plan](#)



TRI 3: Enabling Climate
Neutrality with Storage
Technologies,
Renewable Fuels and
CCU/CCS

Call Module: TRI3
Hydrogen and
renewable fuels



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TRI 4

TRI 4: Efficient zero emission Heating and Cooling Solutions

The Transition Initiative Heating & Cooling (TRI4H&C) will contribute to Challenge 4 “Efficient zero-emission Heating and Cooling Solutions”, formulated in the SRIA of the CETP. The overarching goals of this initiative are the **provision of 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.

TRI 4 Lead

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- **Climate-neutral resources for heating and/or cooling**, including subsurface (shallow and deep geothermal, solar thermal, and other sources of renewable heating and cooling) and utilisation of local and regional excess resources, for application in the built environment or for industrial or other processes or a combination.
- **A resource-efficient and sustainable distribution, storage and utilisation of heating and/or cooling.** This includes short time and seasonal thermal storage options, innovations for heating and cooling networks, and conversion technologies such as heat pumps to distribute the heating and cooling and adjust the temperature level where needed for application in the built environment and industrial and/or other processes.
- **Integration of heating and/or cooling in the local and regional energy systems**, including aspects of sector coupling, intelligent integration and control tools that shall leverage synergies and utilise flexibilities in locally and regionally available energy sources



TRI 4: Efficient zero emission Heating and Cooling Solutions

Call Module: TRI4 Heating & Cooling

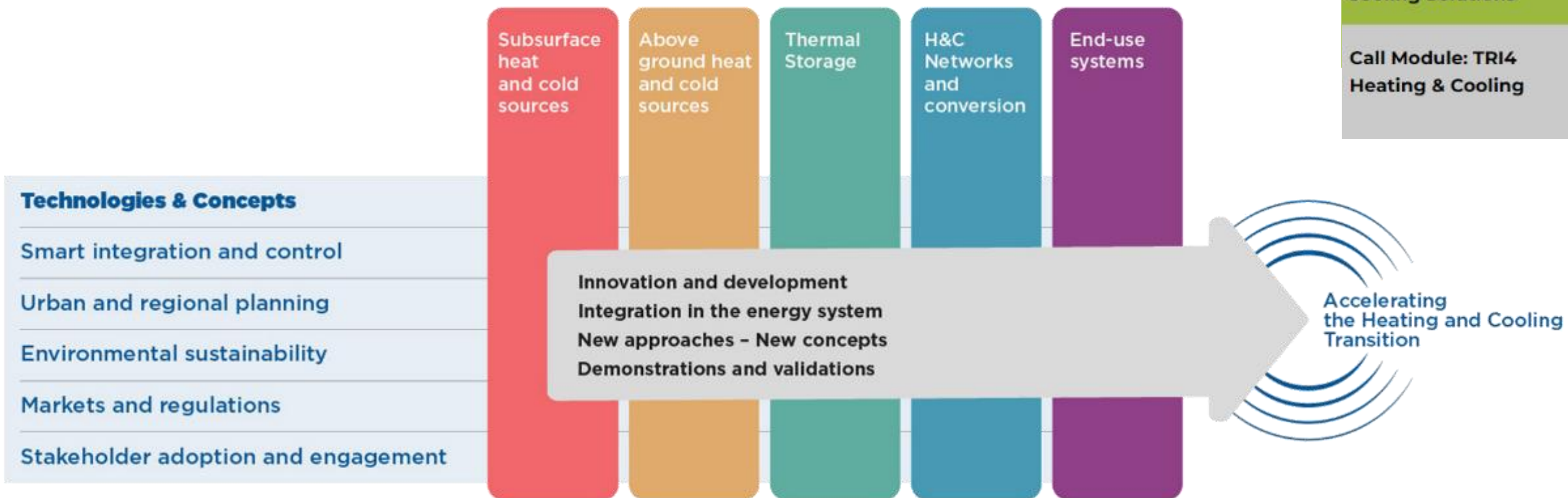


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TRI 4: Efficient zero emission Heating and Cooling Solutions

Call Module: TRI4 Heating & Cooling



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Specific national requirements – Norway TRI 4

- TRI1, 2 and 4 (together): in total up to NOK 30 M (approx. € 3 M)
- We will support projects up to range of NOK 4-6 M pr project (but not strictly limited to this) for TRI 4 H&C Call Module
- For the TRI 1, 2 and 4 call modules, the work packages/subproject involving Norwegian Partners should be in the area from TRL 2/3 up to TRL 5/6
- The Norwegian activities must comply with topics within heating and cooling as listed in the Portfolio Plan for Energy, transport and low emission
- Project proposals should include industrial partners, as far as possible and sensible



TRI 4: Efficient zero emission Heating and Cooling Solutions

Call Module: TRI4 Heating & Cooling



Requirements for Norwegian activities in TRI1, TRI2, TRI3 and TRI4

Norwegian sub-project must comply with one of the following project types

- Collaborative Project to meet Societal and Industry-related Challenges (KSP-S)
- Knowledge-building Project for Industry (KSP-K)
- Innovation Project for the industrial sector (IPN)

Eligible partners:

- Approved Norwegian research organisations, actors from public sector entities, non-governmental organisations, actors from the business sector, and other private organisations
- The main Norwegian partner must be either an approved Norwegian research organisation or a Norwegian company



Funding rates - for Norwegian activities

- State Aid Guidelines must be followed
- Maximum funding rates:

	Basic research	Industrial/Applied Research	Experimental development/innovation
Large Enterprises		50	25
Medium Enterprises		50	25
Small Enterprises		50	25
Universities, public research organisations	100	100	
Public authorities	100	100	
Associations without economic activities, NGOs	100	100	

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Joint Call
2022
Submission
of proposals

General issues – Read the call text and the national annexes carefully

- Two-step procedure – submission of a pre-proposal followed by an invitation to submit a full-proposal
- Submission through [CETPartnership Application System](#) **online only** - Choose one Call Module per proposal
- Additional documents and/or local proposal submission may be requested by some Funding Partners
- At least **three independent legal entities from three different countries participating in the CETPartnership Joint Call 2022**, of which at least two must be EU Member States or Horizon Europe Associated Countries.
- The total effort of one partner **cannot exceed 60% of the total project efforts**.
- The total effort of partners from one country/region **cannot exceed 75% of the total project efforts**. *Efforts = person months*



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B2match

Registration to the Matchmaking platform

- To use the CETPartnership matchmaking platform, please register [here](#)
 - When you first register for our event your profile will be activated automatically
 - BUT: organisers will have rights to **deactivate** your profile if you do not provide enough infos
- Please create a **strong profile** that will raise your visibility to others on this platform

Your profile should contain the following:

- A **photo**, a **logo** of your organisation,
- a **short and clear description** of your activities and interests.
- Please add at least **one cooperation profile**
in the Marketplace



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We are looking forward receiving
good applications !

<https://cetpartnership.eu>

Thank You !