



# Renewable Heating & Cooling

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European Technology and Innovation Platform

Deliverable 4.4

## Final report on research policy achievements and next steps

WP4 - RD&I Framework for the RHC sector

Grant agreement: 825998

From: December 2018 to May 2023

Prepared by: Philippe Dumas (EGEC)

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## European Technology and Innovation Platform on Renewable Heating and Cooling

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### ABBREVIATIONS

**RHC ETIP:** European Technology and Innovation Platform on Renewable Heating and Cooling

### PARTNERS

**EUREC:** the Association of European Renewable Energy Research Centres

**Bioenergy Europe/AEBIOM:** Association Européenne pour la Biomasse

**EGEC:** European Geothermal Energy Council

**EHP:** Euroheat &Power

**Solar Heat Europe/ESTIF:** European Solar Industry Federation

**EHPA:** European Heat Pump Association

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# INTRODUCTION

This document is an updated activity report to promote research policy priorities of the RHC Platform. It identifies relevant policy and regulatory initiatives, and Research & Innovation (R&I) funding programmes in the heating and cooling sector and provides a list of actions undertaken by the RHC platform.

The heating and cooling sector represents almost half of EU's energy consumption. Moreover, the reality shows that heat consumption is even higher considering that part of electricity is used for heating (domestic hot water, direct heating, heat pumps). However, in 2021 renewable energy accounted for only 23 % of the total energy used for heating and cooling (H&C) in the European Union.<sup>1</sup> In order to fill this gap, the EU still needs to tackle the barriers and actively support the development of an adequate financing and regulatory framework that will take into account the particularities of the H&C sector.

## The EU Energy Policy Framework

### THE EUROPEAN GREEN DEAL AS KEY POLICY FRAMEWORK

Over the last few years, the EU legislative framework has been updated with a more ambitious plan especially for the decarbonisation of the H&C sector. For example, Art. 23 of the recast of the *Renewable Energy Sources Directive* recognises the importance of setting well defined targets to develop and deploy renewable H&C solutions<sup>2</sup>. Another important milestone is that Member States must comply with the *Governance framework*, according to which they outline in their National Energy and Climate Plans (NECPs) their national contributions to achieving the EU climate and energy targets.

Considering the above-mentioned developments, the European Commission has set even more ambitious policies that are impacting climate and energy sectors. The new mandate of the European Commission (2019 – 2024) started with the announcement of the **European Green Deal** – the key climate and energy policy framework that consists of policy proposals that have an overarching aim of making Europe the first climate neutral continent by 2050. It covers several policy areas, including clean energy, sustainable industry, building and renovating and climate action. All the new initiatives within these areas will have an impact on the H&C sector as well.

<sup>1</sup> EUROSTAT 2020

<sup>2</sup> DIRECTIVE (EU) 2018/2001, [https://eur-lex.europa.eu/legal\\_content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=EN](https://eur-lex.europa.eu/legal_content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=EN)

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The European Green Deal is the EU's long-term growth plan to make Europe climate neutral by 2050. This target is enshrined in the European Climate Law, as well as the legally binding commitment to reduce net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. The Commission presented its 'Fit for 55' package of legislation in July 2021 to implement these targets; these proposals would already lower our gas consumption by 30% by 2030, with more than a third of such savings coming from meeting the EU energy efficiency target.

The EU Green Deal Roadmap and a full list of actions are available [here](#).

### The REPowerEU Plan

On 18 May 2022, The European Commission presented the REPowerEU Plan, its response to the energy crisis caused by Russia's invasion of Ukraine. There is a double urgency to transform Europe's energy system: ending the EU's dependence on Russian fossil fuels, which are used as an economic and political weapon and cost European taxpayers nearly €100 billion per year, and tackling the climate crisis.

With the launch of the European Green Deal, Europe started an ambitious policy framework that will transform industries, economies, and services. To achieve the proposed climate and energy targets, REPowerEU plan will have to make significant progress in its legislative support for the H&C sector, as this sector still mostly relies on fossil fuels. Considering the new plan for 2030, the EU is now aiming to achieve at least 45% share for renewable energy, but much more initiatives are needed for supporting the uptake of H&C sector by renewable energy sources.

Moreover, the Commission proposes to enhance long-term energy efficiency measures, including an increase from 9% to 13% of the binding Energy Efficiency Target under the 'Fit for 55' package of European Green Deal legislation.

Research and Innovation activities are crucial to reach the REPowerEU objectives, accelerating the clean energy transition for a more affordable, secure and sustainable energy by 2030, in line with the European Green Deal objectives. As stated by the EC Communication: "Currently, only half of the technologies necessary to achieve full decarbonisation are ready for the market. R&I activities respond to this need by supporting new and existing technology solutions become market-ready and roll-out full decarbonisation."

### THE NECPs

National energy and climate plans (NECPs) are part of the 'Clean energy for all Europeans' package. They describe strategies and measures through which the European Union Member States intend to address energy efficiency, renewable energy, greenhouse gas emission reductions, interconnections, and research and innovation. EU Member States were required to submit their final NECPs to the Commission by the end of 2019.

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## European Technology and Innovation Platform on Renewable Heating and Cooling

This report analyses Member States' plans and measures related to renewable energy and energy savings in the heating and cooling (H&C) sector from 2020 to 2030. Among other things, it analyses how Member States intend to meet the targets specified in articles of the renewable energy directive (RED II) and the energy efficiency directive (EED). For example, according to Article 23 of RED II, countries should report their annual increase in the share of renewable energy sources in the H&C sector and the role of waste heat and cold.

Under the Governance Regulation, Member States submitted their integrated national energy and climate plans, including shares of renewable energy in final energy consumption, in heating and cooling and transport sectors, as well as information on their policies and measures to achieve the targets. The Updated NECPs are due in 2024.

The first set of NECPs neglects the H&C sector and not enough attention and measures are given to RHC technologies. The R&I dimension is also missing.

## THE EU'S RECOVERY STRATEGY

The COVID-19 crisis that started in early 2020 has produced major impacts on the EU economy. Significant financial instruments and legislative support are needed to relaunch EU economy, as well as to build and reinforce a prosperous recovery. In terms of financial assistance, the European Commission proposed a new recovery instrument – [Next Generation EU](#). It will generate a total of €750 billion, that will be used to support the recovery strategy. More details can be found below in this document.

In this context on the policy side, the European Green Deal will serve as EU's recovery strategy. All the money raised through Next Generation EU will be channelled through EU programmes within the long-term EU budget 2021 – 2027. As part of its recovery strategy, the EU is bringing forward the following priorities:

- Renovation wave of buildings and infrastructure;
- Reinforcement of circular economy;
- Rolling out renewable energy projects;
- Cleaner transport and logistics, including the installation of one million charging points for electric vehicles and a boost for rail travel and clean mobility in our cities and regions;
- Reinforcement of the Just Transition Fund to support re-skilling, helping businesses create new economic opportunities.

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### The RHC PLATFORM ACTIVITIES

To promote the research priorities of the RHC platform, two letters have been sent to policy makers

- 1) A letter was sent on 2 November 2020 to EC- DG Energy Director-General Juul Jørgensen, asking to “Establishing a Directorate in DG Energy to advance Renewable Heating and Cooling investments”



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## European Technology and Innovation Platform on Renewable Heating and Cooling



2 November, 2020

Dear Director-General Juul Jørgensen

### Establishing a Directorate in DG Energy to advance Renewable Heating and Cooling investments

We welcome your continued emphasis on renewable heating and cooling to address the climate crisis and rejuvenate sustainable economic growth. Renewables are the glue that bind public acceptance for the energy transition because they lower the overall cost of energy for consumers, remove geopolitical threats to the security of supply, as well as the burdensome volatility and expense of fossil imports.

Whilst heat accounts for half of the EU's energy consumption, only 20% of this comes from renewable sources. We call for the creation of a dedicated **Directorate on renewable heating and cooling** to give this important sector institutional recognition and adequate capacity to design effective policy and support measures. This will help to increase the pace of investment in renewable solutions and delivery of the EU's 2050 climate targets as well as the flagship Renovation Wave initiative.

We look forward to working with you to deliver this outcome.

Yours sincerely,

Pedro Dias, Secretary General, Solar Heat Europe  
Philippe Dumas, Secretary General, European Geothermal Energy Council  
Jean-Mark Jossart, Secretary General, of Bioenergy Europe  
Paul Voss, Secretary General, Euroheat & Power  
Thomas Novak, Secretary General, European Heat Pump Association  
Javier Urchegui, Chair of the Renewable Heating and Cooling ETIP (RHC-ETIP)  
Greg Arrowsmith, Secretary General, Association of European Renewable Energy Research Centers  
Claire Roumet, Director, Energy Cities  
Justin Wilkes, Executive Directive, ECOS  
Jeremy Wates, Secretary General, European Environmental Bureau  
Martha Myers, Energy Efficiency and Energy Poverty Campaigner, Friends of the Earth Europe  
Dörte Fouquet, Director, EREF

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- 2) A letter has been sent to EU institutions on the IEA net zero report and the implications for fossil gas in the EU climate taxonomy, on 23 September 2021

### LETTER TO EU INSTITUTIONS ON THE IEA NET ZERO REPORT AND THE IMPLICATIONS FOR FOSSIL GAS IN THE EU CLIMATE TAXONOMY

Brussels, 23 September 2021

Dear President von der Leyen,

Dear Executive Vice-President Timmermans,

Dear Executive Vice-President Dombrovskis,

Dear Commissioner McGuinness,

Dear Ambassadors to the European Union,

Dear Members of the European Parliament,

The publication of the International Energy Agency's (IEA) [Net Zero by 2050 Roadmap for the Global Energy Sector](#) in May 2021 was a watershed moment for global climate action. The report maps out concrete milestones that need to be met to enable a 2050 world with net zero emissions and limit global temperature rise to 1.5 °C.

**The IEA report finds that in order to limit global temperature increase to 1.5°C, we must ensure:**

- **No investment in new fossil fuel supply beyond projects committed in 2021:** As the Executive Director of the IEA put it: *"there is no need for new oil, gas and coal development, which includes no need for oil and gas exploration investments."*
- **Zero-emission electricity:** Electricity generation must be 100% zero-emission in the OECD by 2035, and globally by 2040. This means a phase out of all oil and gas-fired power plants within the same timeframes (while coal-fired power has to be phased out sooner).
- **For heating, there are no new fossil fuel boilers sold from 2025.**

These IEA findings confirm once and for all that **new gas investments cannot be deemed compatible with a 1.5°C pathway**. In addition, given that the average lifespan of gas-fired plants is 25 years, it makes clear that **there is no room in the EU and OECD's carbon budget for any new fossil gas-fired plant producing power and/or heat to be installed between now and 2035**.

This has serious implications for the EU taxonomy: given that there is no room for new gas power in the IEA 1.5°C scenario, **gas cannot be included in the EU sustainable finance taxonomy**, which itself refers to a 1.5°C pathway in both its Article 10(2) on transitional activities and Article 19 on technical screening criteria.

Finally, it should be noted that the IEA's findings on fossil gas are fully consistent with the Commission's own [Impact Assessment for the 55% climate target](#), which finds that **EU gas consumption needs to be cut by around 30% by 2030** and that gas supply to residential buildings must fall even faster, by 44%.

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**With COP26 nearing, we call on you not to include fossil gas in the EU sustainable taxonomy: it would ruin the taxonomy's credibility<sup>1</sup>, undermine the European Green Deal, and send a disastrous global signal at odds with the urgent need for climate mitigation efforts.**

The US is already aiming for clean power by 2035, which is consistent with the IEA report. The EU must not send a signal, with its own taxonomy, that goes in the opposite direction.

The Annex of this letter provides more evidence on electricity and heat sectors from the IEA Net Zero report.

Please do not hesitate to ask us any questions you may have. With our best regards,

### Signatories

- Philippe Dumas, Secretary General
- 136. **ETIP RHC**,  
Marco Calderoni, President
- 137. **FoE Finland**,  
Tanja Pulliainen, Chairperson
- 138. **The Shift Project**,  
Matthieu Auzanneau, Executive Director
- 139. **350.org**,  
Nicolò Wojewoda, Regional Director
- 140. **EUREC**,  
Greg Arrowsmith, Secretary General
- 141. **Polish Zero Waste Association**,  
Piotr Barczak, Board Member and Circular Economy Advisor
- 142. **RED SRL**,  
Luc Pockele, Managing Director
- 143. **Shecco**,  
Marc Chasserot
- 144. **ECCO - The Italian climate change think tank**,  
Luca Bergamaschi, Co-Founder

# EU Energy Regulatory Framework

Policies are contributing to developments within RHC R&I by creating regulatory frameworks, setting out targets, and providing opportunities for public funding for research and innovation projects. The following list outlines the main regulatory frameworks that the RHC-ETIP focused on in order to ensure that ETIP's priorities were embedded within the EU policy framework. The RHC-ETIP was mainly monitoring these policy developments, while industrial associations played a more pro-active role in the definition of lobbying actions.

## Revised Renewable Energy Directive

<b>Overview</b>	<p>The update of Renewable Energy Directive (REDII) was presented in July 2021.</p> <p>In RED III, the EU target for Renewable Energy Sources consumption has been raised to 45% by 2030 with REPowerEU plan. The Directive also defines conditions for supporting renewable energy projects, where financing should be provided as a premium on top of market price. Moreover, Member States can also choose to support specific technologies according to certain criteria. In addition, the text allows the provision of specific support for small-scale projects and to those demonstrating innovative renewable technologies. It also prevents retroactive changes to support schemes and requires that upcoming support scheme changes are announced at least 3 years in advance.</p>
<b>Relevant provisions for RHC</b>	<p><b>Art.15</b> is about mainstreaming renewable energy in buildings: “with an indicative target of at least a 49 % share of energy from renewable sources in the buildings sector in the Union’s final consumption of energy in 2030”</p> <p><b>Art.16 and 17</b> insert new provision on simplification of the permit-granting process in renewables go-to areas.</p> <p><b>Art.22</b> for Mainstreaming renewable energy in industry: “by an indicative average minimum annual increase of 1.1 percentage points by 2030.”</p> <p><b>Art.23</b> introduced new provisions for mainstreaming renewable heating and cooling</p>
<b>Suggested Actions</b>	<ul style="list-style-type: none"> <li>• Monitor negotiation</li> <li>• Support promotion of RHC</li> <li>• Ensure proper integration of RES-HC provisions in NECPs</li> </ul>

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<b>Timeline</b>	Monitoring policy developments and drafting advocacy actions where needed in order to achieve the proposed 2030 RES targets
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### Revised Energy Efficiency Directive

<b>Overview</b>	The update of Energy Efficiency Directive (EED) was presented in July 2021, the proposal for a recast of the Directive on energy efficiency adopted on 14 July 2021 already raised the Union energy efficiency target for 2030 to 9% compared to the projections of the 2020 Reference Scenario. REPowerEU Plan raises the 2030 target for energy efficiency to 13%
<b>Relevant provisions for RHC</b>	<ul style="list-style-type: none"> <li>Article 7, Annex VIII of EED</li> <li>Under the amending directive, EU countries will have to achieve new energy savings of 0.8% each year of final energy consumption for the 2021-2030 period.</li> <li>The amended Directive also requires Member States to have in place transparent, publicly available national rules on the allocation of the cost of heating, cooling and hot water consumption in multi-apartment and multi-purpose buildings with collective systems for such services</li> </ul>
<b>Suggested Actions</b>	<ul style="list-style-type: none"> <li>Monitor and ensure consideration of RD&amp;I in RES-H&amp;C</li> </ul>
<b>Timeline</b>	Monitoring policy developments and drafting advocacy actions where needed in order to achieve the proposed 2030 EE targets

### Revised Energy Performance in Buildings Directive

<b>Overview</b>	The update of EPBD was presented in July 2021, and REPowerEU Plan proposes new provisions. The revised EPBD proposes new policy measures to achieve a highly energy efficient and decarbonised building stock by 2050
<b>Relevant provisions for RHC</b>	<p>The EPBD covers a broad range of policies and measures that are aiming to help national EU governments to boost energy performance of buildings and improve the existing building stock:</p> <ul style="list-style-type: none"> <li>Member States must establish strong long-term renovation strategies, aiming at decarbonising the national building stocks by 2050, with indicative milestones for 2030, 2040 and 2050. The strategies should contribute to achieving the national energy and climate plans (NECPs) energy efficiency targets</li> </ul>

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	<ul style="list-style-type: none"> <li>Member States must set cost-optimal minimum energy performance requirements for new buildings, for existing buildings undergoing major renovation, and for the replacement or retrofit of building elements like heating and cooling systems, roofs and walls</li> <li>All new buildings must be nearly zero-energy buildings (NZEB) from 31 December 2020. Since 31 December 2018, all new public buildings already need to be NZEB</li> <li>Energy performance certificates must be issued when a building is sold or rented, and inspection schemes for heating and air conditioning systems must be established</li> <li>Smart technologies are promoted, including through requirements on the installation of building automation and control systems, and on devices that regulate temperature at room level</li> </ul>
<b>Suggested Actions</b>	<ul style="list-style-type: none"> <li>Monitor the transposition of EPBD on the Member State level and react with advocacy measures when needed</li> <li>Monitor and ensure consideration of RD&amp;I in RES-H&amp;C</li> </ul>
<b>Timeline</b>	Monitoring policy developments and drafting advocacy actions where needed in order to achieve the proposed 2030 targets

## Governance of the Energy Union Regulation

<b>Overview</b>	In December 2018, the Governance of the Energy Union Regulation entered into force. The aims of this legislation are to simplify the process of monitoring and to address weaknesses in implementing the goals of Energy Union, in particular the 2030 EU targets on renewables, energy efficiency and greenhouse gas emissions.
<b>Relevant provisions for RHC</b>	<ul style="list-style-type: none"> <li>According to the Regulation, national energy and climate plans are to be prepared for the 2021-2030 period, followed by progress reports.</li> <li>Article 1-4. Article 32, 33.</li> </ul>
<b>Suggested Actions</b>	➤ Monitor the implementation of NECPs and ensure an adequate consideration of RES-H&C in NECPs (notably compliance with REDII art 23).
<b>Timeline</b>	



### The RHC Platform activities

One of the main aims was to ensure the EU Energy Regulatory Framework is reflected in funding programmes. New regulatory provisions must be implemented through the funding instruments described below.

## KEY FUNDING INSTRUMENTS. TIMELINE & ACTIONS

This part of deliverable outlines an overview of key funding programmes that directly affect investments in R&I in renewable H&C.

Investments and financing are one of the key enabling factors for implementation of renewable H&C projects. Designing the right financing instruments are crucial to lower the costs and improve the competitiveness of the RHC sector.

The list below outlines key research and innovation policy priorities for RHC-ETIP. The Platform compiled an action plan to ensure that the RHC-sector is properly represented and receives support for research and deployment of innovative projects within the renewable H&C sector.

### Horizon Europe

<b>Overview</b>	The EU's next funding programme for research and innovation for the next seven years (2021-2027) with a proposed budget of €100 billion.
<b>Relevance for RHC</b>	<p>Committing at least 35% of its budget for climate priorities, Horizon Europe is the main financing instrument for research and innovation at EU level. Projects focused on renewable H&amp;C will also benefit from Horizon Europe financing.</p> <p>The Horizon Europe programme has a new feature: research and innovation mission-oriented areas. <b>Mission on climate-neutral and smart cities</b> will be the most relevant for the H&amp;C sector.</p> <p>Moreover, European Partnerships are listed as new features of the Horizon Europe programme. These partnerships will bring together EU institutions, associated Member States, private sector, and other</p>

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	<p>stakeholders in order to deliver on ongoing overarching European challenges.</p> <p>The Horizon Europe proposal lays down the conditions and principles for establishing European Partnerships. Currently, from the full list of partnerships the following can be considered as of relevance to the RHC sector:</p> <ul style="list-style-type: none"> <li>- <a href="#">Clean Energy Transition Partnership</a></li> </ul> <p>It aims to foster joint actions between Horizon Europe and national funding programmes on common R&amp;I priorities, building on – and bringing forward – the work carried out in the SET-Plan.</p> <ul style="list-style-type: none"> <li>- <a href="#">Build4People</a></li> </ul> <p>This partnership provides a cross-cluster structure, bringing together public and private sectors to create research pathways based on a holistic view of the built environment for sustainability and better living.</p> <p>Clean energy technologies will be considered in both partnerships. These are planned to start in 2021.</p> <ul style="list-style-type: none"> <li>- <a href="#">Mission on climate-neutral and smart cities</a></li> </ul> <p>Cities Mission will involve local authorities, citizens, businesses, investors as well as regional and national authorities to deliver 100 climate-neutral and smart cities by 2030 and to ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050</p>
<b>Policy Actions</b>	<ul style="list-style-type: none"> <li>➤ The RHC Platform has published its position towards the new Horizon Europe framework programme in 2019.</li> <li>➤ Provide inputs/ priority list of topics for WP2021-2022 &amp; 2023-2024</li> <li>➤ The next step would be to provide inputs for the mission on climate-neutral and smart cities to ensure the visibility of RHC priorities</li> <li>➤ Monitor the implementation of European Partnerships</li> </ul>
<b>Timeline</b>	<p>WP 2021-2022 publishes and calls open</p> <p>WP 2023-2024 : under negotiation</p>

## Cohesion Policy 2021 - 2027

<b>Overview</b>	<p>For the long-term EU budget 2021-2027, the Commission proposes to modernise Cohesion Policy. Thematic Objectives (TOs) of the new Cohesion Policy will be reduced from 11 to 5 (Paragraph 5, Title II proposed CPR):</p> <ul style="list-style-type: none"> <li>• Smart Europe (innovation, digitalisation, support for SMEs);</li> </ul>
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	<ul style="list-style-type: none"> <li>• Green Europe (carbon free economy, implementation of the Paris Agreement, promotion of renewable energy sources);</li> <li>• Connected Europe (strategic transports and digital networks);</li> <li>• Social Europe (social rights, quality employment, education, social inclusion etc);</li> <li>• Citizens' Europe (supporting locally-led development strategies, urban development, etc).</li> </ul>
<b>Relevance for RHC</b>	<b>TO II: Greener Europe:</b> implementing the Paris Agreement and investing in energy transition, renewables and the fight against climate change
<b>Policy Actions</b>	➤ Monitor the implementation process and ensure proper funding for RHC projects
<b>Timeline</b>	<b>2021-2027</b>

### Innovation Fund

<b>Overview</b>	Designed to support innovative low-carbon technologies. The Innovation Fund will focus on <b>highly innovative and small-scale and large-scale projects</b> that can significantly reduce greenhouse gas emissions. The size of the fund is expected to be around EUR 10 billion (the final amount depends on the ETS carbon price)
<b>Relevance for RHC</b>	The Innovation Fund finances breakthrough technologies and projects that will contribute to EU's energy transition. RHC projects are in line with this criterion.
<b>Policy Actions</b>	➤ Follow and provide input for designing calls for projects
<b>Timeline</b>	<ul style="list-style-type: none"> <li>➤ <b>First calls for projects in 2020 -2021</b></li> <li>➤ <b>Second and Third calls in 2022</b></li> </ul>

### Modernisation Fund

<b>Overview</b>	The Modernisation Fund is a new fund introduced within the revised ETS Directive that will support projects in 10 eligible Member States that will help modernise their energy systems and improve energy efficiency. It functions as of 1st of January 2021.
<b>Relevance for RHC</b>	70% of the funds must be spent on priority investments that will: <ul style="list-style-type: none"> <li>• Improve energy efficiency (including in transport, buildings, agriculture and waste)</li> <li>• Modernise energy networks, including district heating pipelines, grids for electricity transmission, increase of interconnections between EU Member States</li> </ul>

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	<ul style="list-style-type: none"> <li>Just transition in carbon-dependent regions to support the re-skilling and up-skilling of workers</li> </ul>
<b>Policy Actions</b>	<ul style="list-style-type: none"> <li>➤ Monitor call for projects</li> <li>➤ Advocacy meetings with the European Commission to highlight the potential and contribution of renewable H&amp;C projects</li> </ul>
<b>Timeline</b>	<b>2021-2027</b>

### The Just Transition Mechanism

<b>Overview</b>	<p>The Just Transition Mechanism (JTM) is a key financial tool that will mobilise at least €100 billion (over the period 2021-2027) to support the targeted EU regions that are most affected by the transition towards the zero-carbon economy.</p> <p>It is part of the recovery package proposal elaborated by the Commission.</p>
<b>Relevance for RHC</b>	<p>This funding instrument provides finances for projects that will help EU regions in energy transition. Renewable energy sources are key to deliver decarbonisation for these regions.</p>
<b>Policy Actions</b>	<ul style="list-style-type: none"> <li>➤ Monitor Multiannual Financial Framework (MFF) ;</li> <li>➤ The RFF</li> </ul>
<b>Timeline</b>	<b>2021-2027</b>

### LIFE Programme

<b>Overview</b>	<p>LIFE is the only EU funding programme dedicated to environmental and climate objectives. The <b>Clean Energy Transition sub-programme</b> is a new feature of LIFE 2021-2027. It is the first time that the clean energy transition is specifically covered within LIFE programme.</p>
<b>Relevance for RHC</b>	<p>It is a continuation of the market uptake activities that are currently funded under Horizon 2020.</p> <ul style="list-style-type: none"> <li>The aim is to support the shift towards a clean energy, especially in regions that lag behind and have difficulty to absorb funding from the European structural and investment funds. It will encourage investments in projects focusing in particular on energy efficiency and small-scale renewables.</li> </ul>

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<b>Policy Actions</b>	<ul style="list-style-type: none"> <li>• Monitor the implementation process of LIFE 2021 – 2027 to identify opportunities for renewable heating and cooling projects</li> <li>• Provide input to LIFE Work programmes to reinforce the potential of RHC projects</li> </ul>
<b>Timeline</b>	<b>2021-2027</b>

### The RHC Platform activities

In 2021, RHC Platform published its position on the official launch of the Horizon Europe Work Programme 2021-2022.

In a letter dated 11 February 2022 and another one dated 5 April 2022, the RHC platform highlighted its priorities for the WP2023-2024.

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## European Technology and Innovation Platform on Renewable Heating and Cooling



European Technology and Innovation Platform on Renewable Heating and Cooling

### More R&I funding for the renewable heating and cooling sector is needed in Horizon Europe

ETIP RHC position on the official launch of the Horizon Europe Work Programme 2021-2022

ETIP RHC welcomes the official launch of the Horizon Europe Work Programme 2021 – 2022. We recognise the European Commission's efforts to outline an ambitious programme that will contribute to achieving a 100% sustainable, secure and affordable energy system.

We highlight the progress that has been made towards the integration of renewable energy sources (RES) and technologies in the calls related to the energy system integration, as well as an enlarged approach towards energy efficiency in buildings, that also considers local and nearby renewable sources to decarbonise the building stock.

Importantly, we particularly welcome the Work Programme's emphasis on the **role of renewable energy technologies in Destination "Sustainable, secure and competitive energy supply"**. It provides the right policy narrative by recognising that renewable energy technologies are the baseline on which to build a sustainable European and global climate-neutral future. Moreover, it also highlights that **"Renewable energy technologies provide major opportunities to replace or substitute carbon from fossil origin in the power sector and in other economic sectors such as heating/cooling, transportation, agriculture and industry. Their large scale and decentralised deployment is expected to create more jobs than the fossil fuel equivalent. Renewable energy technologies are the baseline on which to build a sustainable European and global climate-neutral future"**.<sup>1</sup>

While the RES policy narrative correctly outlines the potential use of renewable energy technologies, the calls listed in the Work Programme fail to address the specific R&I needs of the renewable heating and cooling sector that are essential for its full deployment. Particularly:

- **Renewable heating and cooling was not considered as a self-standing topic in the Work Programme**
  - In June 2019, ETIP RHC strongly advocated for the inclusion of a specifically dedicated topic for R&I in the heating and cooling sector in its [position paper on Horizon Europe](#). This is a crucial step to ensure a more efficient allocation of resources within the work programme that would deliver a more coherent view of the sector priorities both in terms of supply (technologies) and demand (i.e. tackling decentralised thermal needs with decentralised thermal supply). We regret that this recommendation was not reflected in the official Work Programme 2021-2022.

<sup>1</sup> Horizon Europe Work Programme 2021-2022, Cluster on Climate, Energy and Mobility, [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-8-climate-energy-and-mobility\\_horizon-2021-2022\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-8-climate-energy-and-mobility_horizon-2021-2022_en.pdf), pag. 130

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### European Technology and Innovation Platform on Renewable Heating and Cooling

- **Market uptake measures dedicated to renewable heating and cooling sector are still missing.** This has been a major barrier to a further deployment of RHC solutions. ETIP RHC concluded in its [Strategic Research and Innovation Agenda \(SRIA\)](#) that there is a critical need to address:
  - **Innovative business models** (that move from the conventional approach of “heat as a commodity” towards the **emerging concept of “heat as a service”**) must be developed to increase the investments in RHC solutions. Business models and tariffs should benefit consumers who want to contribute to demand-side management. Moreover, it is also essential to mobilise private investments (pension, insurance funds etc). To be economically viable in the future, RHC projects must have the capacity to attract further investments. This requires novel financial approaches.
  - **Circularity:** R&I projects are needed to tackle the potential of applicability and use of recycled/secondary materials/waste in RHC installations; to define the best monitoring systems to track the availability of raw materials; to develop new technologies for waste and water management; to investigate standardisation procedures and quality labels for RHC components (such as geothermal pipes, collectors, pumps, etc). Furthermore, the principle of circularity can also be applied to the energy consumption, as RHC technologies reduce primary energy consumption by applying the energy efficiency first principle (e.g., through the recovery of waste heat). R&I actions in this area are essential to improve the confidence of consumers and legal authorities in sustainability of RHC products.
  - **Digitalisation** is also crucial for large scale adoption of RHC applications. Technology advancements in digitalisation will lead to radically lower costs, higher efficiency, better system design and integration, enhanced operations, and increased resilience, as well as security of supply.
- **No dedicated calls for renewable cooling,** despite the rising cooling demands. EUROSTAT indicates that the needs for cooling in buildings increased over the last decades, while the EU Heating and Cooling Strategy foresees a strong increase in residential cooling consumption – up to 137 TW h in 2050<sup>2</sup>. Most cooling services are currently supplied by electricity. Addressing increasing demands with thermal cooling will alleviate pressure on electricity grid and supply cooling demand with renewable energy sources. R&I on renewable cooling and support for cooling related actions would allow the creation of a basis for forward-looking actions that will tackle this increasing cooling demand with renewable energy sources. As a world leader in RHC, Europe has the responsibility to develop renewable cooling solutions to address this challenge.

<sup>2</sup> An EU Strategy for Heating and Cooling, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0051&from=EN>



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### European Technology and Innovation Platform on Renewable Heating and Cooling

R&I actions are crucial for increase the share of renewable energy sources/technologies in the heating and cooling sector: **75% of heating and cooling is still generated from fossil fuels while only 21% comes from renewable energy** (EUROSTAT, 2019 figures).<sup>3</sup>

The share of RES in the heating and cooling sector has increased steadily since the beginning of the EU data collection in 2004, when the share was 12%. However, according to the European Environment Agency, the **heating and cooling sector does not perform as well as the electricity sector**: the share of RES in electricity has been growing on average by 6% between 2005 and 2016, **while the RES share in the heating and cooling sector has been growing annually by an average of 4%**.<sup>4</sup> This shows that the EU must now prioritise further R&I actions to support the increase of RES in the heating and cooling sector.

*We call on the European Commission services to further address these R&I gaps that persist in the renewable heating and cooling sector and to reflect these in the next Horizon Europe Work Programmes.*

#### About the ETIP RHC

The European Technology and Innovation Platform on Renewable Heating & Cooling ([ETIP RHC](#)) brings together experts on biomass, geothermal, solar thermal, and heat pumps, as well as the related industries such as district heating and cooling (DHC) and thermal energy storage (TES), to define a common strategy for increasing the use of RE technologies for heating and cooling (H&C) in Europe. The ETIP RHC aims at playing a decisive role in maximising synergies and strengthening efforts towards research, development, and technological innovation, which will consolidate Europe's leading position in the H&C sectors.

<sup>3</sup> EUROSTAT, Renewable heating and cooling, <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20200211-1>

<sup>4</sup> ETC/ACM Report 17/2018: Policies and Measures on Renewable Heating and Cooling in Europe, [https://www.eionet.europa.eu/etcs/etc-cme/products/etc-cme-reports/eionet\\_rep\\_etcacm\\_2018\\_17\\_res\\_pams\\_heating\\_cooling-1](https://www.eionet.europa.eu/etcs/etc-cme/products/etc-cme-reports/eionet_rep_etcacm_2018_17_res_pams_heating_cooling-1)

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## European Technology and Innovation Platform on Renewable Heating and Cooling



Dear member of the Cluster 5 Horizon Europe Programme Committee,

On Monday afternoon 14 Feb your committee will meet to discuss Destinations 3&4 of the Cluster 5 Work Programme 2023-24.

EUREC is coordinator of the secretariat of the [ETIP on Renewable Heating Cooling \(RHC\)](#) and a member of the secretariat of [ETIP-PV](#). Both ETIPs have information they would like to share with you before your meeting.

### **Renewable Heating and Cooling**

Please take into consideration this position paper of the ETIP: [More R&I funding for the renewable heating and cooling sector is needed in Horizon Europe's Work Programme 2023-2024](#)

### **Photovoltaics**

The European Innovation Platform for Photovoltaics ([ETIP-PV](#)) in collaboration with [EERA-PV](#) has recently completed a European Strategic Research and Innovation Agenda (E SRIA) detailing research topics in photovoltaic science, technology, and applications. ETIP-PV invites you to read a [pre-print version of the report](#).

The E SRIA, co-authored with around 90 PV experts, is organised into 5 "Challenges" - thematic chapters covering the following themes:

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- Challenge 1: Performance Enhancement and Cost Reduction through Advanced PV Technologies and Manufacturing
- Challenge 2: Lifetime, Reliability and Sustainability Enhancements (through advanced photovoltaic technologies, manufacturing and applications)
- Challenge 3: New Applications through Integration of Photovoltaics (for diversified and dual-purpose deployment and enhanced value)
- Challenge 4: Smart Energy System Integration of Photovoltaics (for large-scale deployment and high penetration)
- Challenge 5: Socio-Economic aspects of the transition to high PV contribution

The E SRIA is a pre-print version and therefore is not meant for public distribution. A finalised version, with graphic design elements, will be publicly disseminated at a later date. Please download the [pre-print version of the report here](#).

Wishing you a pleasant weekend,

Greg Arrowsmith,  
Secretary General, EUREC

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### *RHC ETIP Position Paper April 2022*

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*This RHC position paper details RHC-ETIP's position on the preparation of the Horizon Europe Work Programme 2023-2024.*

*The RHC ETIP Secretariat*



**More R&I funding for security of heat supply and affordable heat with renewable heating and cooling**

5 April 2022

*RHC-ETIP's position on the preparation of the HE WP 2023-2024*

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## European Technology and Innovation Platform on Renewable Heating and Cooling

Dear programme committee member,

Ahead of the next preparatory meeting for the Horizon Europe work programme 2023-2024, the RHC Platform is calling upon the EU to allocate more funding for renewable heating and cooling in buildings and industry.

An amount corresponding to 60% of Russia's gas exports to the EU (i.e. corresponding to 94 bcm) was burned in the gas boilers of EU homes in 2021. As the European Commission is reviewing its research agenda to reflect EU-wide policy changes following Russia's invasion of Ukraine, EU must invest more money in research on Heating & Cooling (H&C), aiming for an accelerated switch from fossil fuels to Renewable Heating & Cooling (RHC).

As the budget allocated to RHC technologies for the next 2 years (i.e. 2023-2024) must increase significantly in order to face the gas crisis and high heating prices due to increased prices for electricity, gas and oil, it is crucial to tackle the issues in the heating sector for smart sector integration.

The amount allocated for RHC technologies must allow for development of several types of actions to switch fuels and at different TRLs for the destination "Global leadership in renewable energy":

1. Triple the budget allocated for the topics already in the draft WP 2023/2024, to allow for more projects to be funded
2. Propose more topics for RHC technologies in the following focus areas:

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## European Technology and Innovation Platform on Renewable Heating and Cooling

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- “Highly energy-efficient and climate neutral EU building stock”:
  - “Accelerated fuel switch from gas to RHC in buildings”
  - “Accelerated fuel switch in District heating and cooling systems”
- “Switch fuel in industry: H&C supply for low- and medium-temperature processes”
- “Increased resilience in energy systems with renewable heating & cooling supply, networks & storage”

This configuration intends to stimulate the research and technological innovation of the RHC sector to face the current crisis in the energy sector, particularly as 50% of the energy consumed in Europe is in the form of heating and cooling.

The RHC-ETIP is available for any requests the European Commission or Programme Committee may have on this position.

### **Supporting innovation via the Renewable Energy Directive**

The Renewable Energy Directive is being revised. The Member States are now formulating their position on it in the Council of Ministers.

Several RHC ETIP secretariat members signed a [joint letter in 2021](#) calling for a target for the deployment of innovative renewable energy technologies to be inserted into the Directive. This idea has gained traction in the European Parliament and we request that you ask your colleagues negotiating your country’s position in the Council to support it too.

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## European Technology and Innovation Platform on Renewable Heating and Cooling

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### About the ETIP RHC

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Download the position paper [here](#)

UPCOMING EVENTS

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