2 Policy

From recognition to large-scale heat pump deployment

After the Commission President Ursula von der Leyen in 2020 set the European Green Deal as one of priorities for her legislature, the European Climate Law entered into force in July 2021. This sets into law the objective of a climate-neutral EU by 2050 and a collective, net greenhouse gas emission reduction target of at least 55% by 2030.

To achieve this target, the European Commission proposed the 'Fit for 55' package in June 2021. This package aims at making the key energy legislative files much more ambitious – including by increasing the energy efficiency and renewable energy targets. It is there of major importance to the energy sector as a whole – including heat pumps.

However, other proposals will have an even bigger impact if they are overhauled in the way that the European Commission intends. Extending the carbon market – the EU Emissions Trading System - to buildings would be a major step towards making the most sustainable heating systems the most cost-effective ones. A more ambitious Energy Taxation Directive , which requires electricity to be less taxed than other energy carriers would add to the business case for heat pumps. A more ambitious Energy Performance of Buildings Directive, setting higher efficiency standards for buildings and their technical building systems is another important factor contributing to the further roll-out of heat pumps.

While these revisions are still ongoing, another unexpected – but terrible and deeply regrettable - factor has accelerated ambition even more. Russia invaded Ukraine in February 2022. The EU reacted with a plan – called 'REPowerEU' - to cut dependency on Russian fossil fuel imports by boosting energy savings and renewables in Europe.

Heat pumps, which replace fossil fuel boilers, are a key part of the REPowerEU plan – so crucial, in fact, that the Euroepan Commission's accompanying visual puts a heat pump next to solar, wind and storage for the first time ever.

REPowerEU says the EU must double the current roll-out rate of heat pumps in the next five years. It sets targets for water-based heat pumps which, when applied to all types, come to 20 million installed heat pumps by 2027 and 60 million by 2030.

A key factor in the success of this roll-out will be to avoid disruption from product related or technical legislation such as ecodesign requirements, the F-gas Regulation and the revision of the REACH Regulation. Policy-makers can ensure this by publicly and clearly confirming that heat pumps are an accepted and widely support political choice.

The new targets, building on the already record-breaking numbers of heat pumps being installed - as this report shows - plus the widespread support for them, show the heat pump sector is moving from being simply recognised as

useful, to mass deployment.

It is a real tipping point for an industry which brings climate action, sustainable jobs and energy security to Europe.

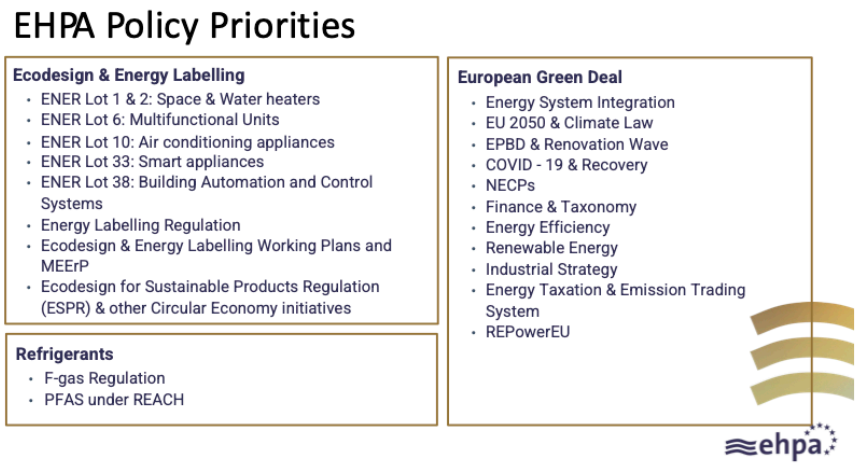
EHPA's policy priority areas are:

1. European Green Deal
2. Ecodesign & Energy labelling
3. Refrigerants-related policies

The invasion of Russia into Ukraine and the EU's reaction in the form of the RE-PowerEU Communication in the first quarter of 2022 reinforced the determination that a large scale heat pump roll-out is essential to re-enforce the proposed EU green deal and increase the EU's independence from fossil fuels. Heat pump technology is ticking all the boxes answering to Europe's biggest challenges and EHPA's policy work is crucial for the future of our industry.

This chapter offers a summary of the current state of the major policy files that are affecting or could affect the heat pump industry and summarises EHPA's views.

Figure 2.0-1: Policy priorities



2.1 European Green Deal

The European Green Deal focuses on those files relevant for the long-term contribution of the heat-pump industry to the Green Deal, the energy and climate targets and to REPowerEU.

Energy System Integration

The European Commission published its EU Energy System Integration Strategy in July 2021. This document aims at a more integrated planning and operation of the energy system as a whole across multiple energy carriers, infrastructures,

and consumption sectors, by creating stronger links between them with the objective of delivering low-carbon, reliable and resource-efficient energy services, at the least possible cost for society.

The strategy includes for the first-time clear objectives for the electrification of heating: 40% of residential buildings and 65% of all buildings in the service sector are foreseen to be heated by electricity by 2030. Assuming that the "energy efficiency first" principle is applied, most of these buildings should be equipped with one or several heat pumps.

The strategy also identifies very clearly the barriers that still exist for the large-scale deployment of heat pumps such as the need for carbon pricing and a balanced energy taxation. The European Parliament has prepared an own-initiative report under the same name as a response to the Commission's Strategy. This was adopted in May 2021.[1]. On 9 November 2021, the European Commission issued a response document to the text adopted in the plenary session.

[1] *(Legislative Observatory, '2021/2241(INI) A European Strategy for Energy Integration')*

Relevance of the topic for the heat pump sector:

- The electrification of heating through heat pumps is an important opportunity to accelerate the transformation and integration of the energy system.
- Heat pumps incorporate the energy efficiency first principle .
- Central role of heat pumps in electrification with targets is mentioned in the document:
    - 40% electrification in residential heating by 2030
    - 65% electrification in services sector by 2030
- The importance of industrial heat pumps.
- The identification of barriers for heat pump roll-out such as pricing.

EU 2050 Climate Action and Climate Law

The Commission set out its vision for a climate-neutral EU in November 2020. The Commission's vision covers nearly all EU policies and is in line with the Paris Agreement objective to keep the global temperature increase to well below 2°C and pursue efforts to keep it to 1.5°C.

The European Parliament and Council agreed to setting into law the objective of a climate-neutral EU by 2050, and a collective, net greenhouse gas emissions reduction target (emissions after deduction of removals) of at least 55% by 2030 compared to 1990.[2] In June 2021 the, EC proposed the 'Fit for 55' package, with proposals for the revision of certain legislative measures to properly implement climate law.

[2] *(Council of the EU 'European climate law : Council and Parliament reach provsional agreement' (2021), https://www.consilium.europa.eu/en/press/press-releases/2021/04/21/european-climate-law-council-and-parliament-reach-provisional-agreement/ (Last accsessed 27/04/2021).)*

The European Climate Law entered into force on 29 July 2021.

All Parties to the Paris Agreement were invited to communicate, by 2021, their mid-century, long-term low greenhouse gas emission development strategies. After the European Parliament and the European Council endorsed the net-zero greenhouse gas emissions objective, the EU submitted its long-term strategy to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2021.

EU Member States are required to develop national long-term strategies on how to achieve the greenhouse gas emissions reductions needed to meet their commitments under the Paris Agreement and EU objectives.

Relevance of the topic for the heat pump sector:

The heat pump industry indirectly benefits from – and is strongly supportive of – high targets on greenhouse gas reduction (but also on renewable energy and energy efficiency) since heat pump technologies offer solutions as of today to meet these targets.

Our Objectives:

- To make sure that heating and cooling are seen as top priorities.
- To support a 100% emission free heating and cooling sector by 2050.
- To introduce a carbon pricing mechanism that would put electric heat pumps on the same level as all thermal energy providers.

Buildings: EPBD and renovation wave

The 2010 Energy Performance of Buildings Directive (EPBD) aims to reduce the energy consumption of buildings. It sets several obligations to Member States, among which: that all new buildings must be nearly zero energy buildings (NZEB) by 31 December 2021, that minimum energy performance requirements must be set for new buildings, for the major renovation of buildings and for the replacement or retrofit of building elements (including heating and cooling systems), and that compulsory inspection schemes must be established for heating and air conditioning systems (or equivalent measures).

A revised version of the 2010 EPBD was transposed by Member States in March 2021.[3] The revised Directive aims to accelerate building renovation rates by reinforcing provisions on long-term building renovation strategies (submitted in March 2021), with a view to decarbonising the building stock by mid-century.

The text promotes the use of high-efficiency alternative systems in new buildings, when feasible, and foresees the creation of a Smart Readiness Indicator for Buildings, which should incentivise the use of smarter building technologies.

The introduction of the new EPBD has been accompanied by some European Commission initiatives, such as a buildings database - the EU Building Stock Observatory - (to track the energy performance of buildings across Europe) and the Smart Finance for Smart Buildings initiative (to direct investment towards the renovation of building stock). In the first half of 2021, the European Commission also published a Recommendation on building renovation and a Recommendation on building modernisation to facilitate the implementation process at national level.

In the framework of the EU Green Deal, the European Commission published the Renovation Wave Communication in October 2021 to make renovation a priority by addressing efficiency and affordability, the electrification of buildings and decarbonisation of heating and cooling. The document aims to double the annual energy renovation rates in the next ten years and to renovate the 35 million least performing buildings by 2030.

[3](EUR-LEX 'amending Directive 2010/31/EY on the energy performance of buildings and Directive 2012/27/EU on energy efficiency (Text with EEA relevance) (EU) 2020/844' (2020), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2020.156.01.0075.01.ENG (Last accessed 27/04/2021).)

One of the legislative actions announced in the Renovation Wave Communication is the revision of the EPBD. On 15 December 2021, the European Commission proposed a revision of the EPBD which is now being considered by the European Parliament and the Council. The proposal introduces the zero-emission building concept and the target of all new buildings to be zero emission by 2030. The revised EPBD would give member states a legal basis for banning fossil fuel boilers and aims to end all financial support for them by 2025. National Building Renovation Plans (previously 'Long-Term Renovation Strategies') would need to be revised to include a roadmap and national targets by 2030, 2040 and 2050. EHPA is advocating to have the REPowerEU targets for heat pumps included in the EPBD and to make the zero-emission buildings concept as heat pump friendly as possible.

Relevance of the topic for the heat pump sector:

Buildings account for approximately 40% of the EU's overall energy consumption and for 36% of the EU's overall GHG emissions. With its efficient and renewable solutions, the heat pump industry can greatly contribute to the effort of reducing the energy consumption of buildings and to reaching the nZEBs (nearly Zero Energy Buildings) goals.

EHPA is in favour of ambitious renovation strategies and a 2050 vision towards a decarbonised building stock, as it is in line with the objectives of a 100% emission free heating and cooling sector by 2050.

The heat pump industry is also enthusiastic about strengthened focus on smart readiness of buildings and the new financial tools.

Financial instruments that promote renovations and the introduction of smart, efficient and innovative technologies in existing buildings are an appropriate way of encouraging investments in higher energy efficiency and energy savings.

Our objectives:

- To make heat pumps the most preferred technology in renovations.
- To increase the renovation rates and the quality of renovated buildings, where heat pumps can offer optimal thermal comfort and air quality.
- To call for the strengthening of financial instruments to promote a green and digital recovery.

COVID-19 & Recovery

Since the outbreak of COVID-19, the European Commission has been taking urgent measures and has modified its work programme to prepare long-term measures to cope with the effects of the crisis and prepare a “green” and “digital” economic recovery.

In May 2021, the European Commission adopted their ‘recovery plan for Europe', which provides a reinforced EU long-term budget for 2021-2027 (Multi Annual Financial Framework) of €1100 billion in combination with Next Generation EU, a recovery fund of €750 billion. This is the largest ever EU stimulus fund, and 30% of funds will go towards preventing climate change, which is the highest share in any EU budget.[4]

[4] *(European Commission, ‘Recov-*

In November 2021, the European Parliament and the Council reached an agreement on the Next Generation EU and on the Multiannual Financial Framework Regulation.

In February 2021, the Council adopted the Regulation establishing the Recovery and Resilience Facility (RRF), a €672.5 billion facility that is part of the Next Generation EU. In order to receive support from the RRF, Member States had until 30 April 2021 to submit their national recovery and resilience plans setting out their reform and investment agendas until 2026.[5]. In March 2022, the European Commission published a report on the Implementation of the RRF.

[5] *(European Council 'A Recovery Plan for Europe', https://www.consilium.europa.eu/en/policies/eu-recovery-plan/ (Last accessed 27/04/2021).)*

Relevance of the topic for the heat pump sector:

EHPA has been promoting the recognition of HVAC as a "critical infrastructure" for the health of EU citizens in times of COVID-19 pandemic to be given specific consideration.

Our objectives:

- To opt for a "green" and "digital" economic recovery, where heat pumps would play a key role (#EUGreenRecovery).
- To promote our position at Member State level

National Climate & Energy Plans

To meet the EU's energy and climate targets for 2030, EU Member States had to establish a 10-year integrated national energy and climate plan (NECP) for 2021 to 2030. Introduced under the Regulation on the Governance of the Energy Union and Climate Action (EU/2020/1999), the rules require the final NECP to be submitted to the European Commission by the end of 2021.

The European Commission will, monitor EU progress as a whole towards achieving these targets. To better develop and implement the plans, Member States must consult citizens, businesses and regional authorities in the drafting and finalisation process. Each country must then submit a progress report every two years. Member States all submitted their NECPs by the end of 2021, and the European Commission is using these as a basis for assessment. The NECPs will be visited again in 2023.

Relevance of the topic for the heat pump sector:

- The final NECPs submitted by Member States to the European Commission lacked ambition with regard to measures in favour of smart, efficient and renewable heating and cooling in general. It is therefore important to keep reinforcing a favourable regulatory environment for heat pumps, which improve the national performance with regard to several targets and objectives simultaneously.

Finance & Taxonomy

Sustainable finance is aimed at supporting the European Green Deal by channelling private investment, to complement public money. A Regulation to create a unified classification system ('taxonomy') on what can be considered an environmentally sustainable economic activity, the Taxonomy Regulation was ap-

proved on 18 June 2021.

The European Commission proposed two draft delegated acts, one on climate change mitigation and one on climate change adaptation under the Taxonomy Regulation. The publication of the final delegated acts was delayed because several Member States were hopeful of more liberal gas and nuclear requirements. The European Commission has asked the Platform on Sustainable Finance for advice on 'gas as a transition activity' in the delegated acts.

A first delegated act on sustainable activities for climate change adaptation and mitigation objectives was published in the Official Journal on 9 December 2021 and is applicable since January 2022. In February 2022, the EC approved a complementary delegated act on the conditions for gas and nuclear to be considered green investments. This is now undergoing scrutiny by the European Parliament. An EU Taxonomy Compass has been created to easily navigate the lists of green investments. By the end of 2022, the EC is planning to adopt Delegated acts on water and marine resources, circular economy, pollution prevention and control, and biodiversity & ecosystems under the taxonomy regulation.

Relevance of the topic for the heat pump sector:

- It is important for Europe's sustainable development that heat pumps are properly recognised as "sustainable activity" in the taxonomy in order to channel private investments where needed.
- The delegated acts on climate change mitigation and adaptation include heat pumps as sustainable investments. Some chapters concerning heat pumps include specific requirements among which a GWP (Global Warming Potential) threshold.

Energy efficiency

In 2020, as part of the 'Clean energy for all Europeans package', the new amending Directive on Energy Efficiency (2020/2002) was agreed to update the policy framework to 2030 and beyond.

The key element of the amended directive is a headline energy efficiency target for 2030 of at least 32.5%. 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.

Other elements in the amended directive include stronger rules on metering and billing/allocation of costs of thermal energy, an updated primary energy factor (PEF) for electricity generation of 2.1 and new rules on "comprehensive assessments on heating and cooling" (see point 1.4 above). Member States had until June 2021 to transpose these into law.

In July 2021, the European Commission put forward a proposal for a new directive on energy efficiency as part of the Green Deal package. It is now under consideration by the European Parliament and the Council. The new proposal intends to raise the targets to 39% of energy efficiency savings in primary energy consumption and 36% of energy efficiency savings in final energy consumption, the general implementation of the energy efficiency first principle, Member States shall encourage and support regional and local to prepare local heating and cooling plans. It contains increased requirements on waste heat in the

comprehensive assessments for heating and cooling. And most important, energy savings as a result of policy measures regarding the use of direct fossil fuel combustion shall not count towards the fulfillment of energy savings obligation as from 1 January 2024.

Relevance of the topic for the heat pump sector:

- The heat pump industry strongly supports high energy efficiency targets from which it indirectly benefits and strongly contributes. Furthermore, the Energy Efficiency Directive (EED) contains specific provisions that promote efficiency in heating and cooling.
- Concerning the PEF, the heat pump industry is satisfied with the current PEF calculation methodology and final PEF of 2.1. A lower PEF better reflects the efficiency of heat pumps and the industry supports its revision on a regular basis for consistent use in EU energy product regulations, such as Ecodesign.

Renewable energy

The original Renewable Energy Directive (2009/28/EC) establishes an overall policy for the production and promotion of energy from renewable sources in the EU. It requires the EU to fulfil at least 20% of its total energy needs with renewables by 2021 – to be achieved through the attainment of individual national targets. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2021.

In December 2020, the revised Renewable Energy Directive 2020/2001/EU entered into force, as part of the Clean Energy for all Europeans package. The Directive establishes a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023.

In July 2021, the European Commission proposed a revision of the renewable energy directive (RED III) which is currently in the legislative process, being discussed by the European Parliament and the Council. The proposal is focused on increasing the EU-wide target for renewable energy sources in the overall energy mix to at least 40% by 2030 and also establishes a comprehensive framework for the deployment of renewables in all sectors of the economy. The proposal would make the +1,1% annual increase target for renewables in heating and cooling binding, it would add a new target for 49% of energy use in buildings to come from RES and it would increase RES use in industry by +1,1% annually.

At the end of 2021, the European Commission adopted a delegated act establishing a methodology for calculating the quantity of renewable cooling and district cooling that can be counted towards EU renewable energy targets.

Relevance of the topic for the heat pump sector:

The heat pump industry strongly supports high renewable energy targets from which it indirectly benefits. Heat pumps are a renewable energy technology making using of ambient, geothermal energy or energy in sewage water. Heat pumps also contribute to renewable energy targets, both the overall targets and the specific (yearly increase) target on renewable heating and cooling. The renewable energy directive also promotes minimum shares of renewable ener-

gy in buildings, which is supported by EHPA.

Our objectives:

- To advocate for the overall target, the target for renewables in buildings and the sectorial target for heating and cooling to be increased and made binding.
- Alongside the heat pump industry, to look at the implementation of the Directive at national level.
- To ensure that Member States take intco account renewable cooling in their statistics.

Industrial strategy

In March 2021, the European Commission published the Industrial policy Package which includes several initiatives: the new industrial strategy for Europe together with a new SME Strategy, the Single Market Barriers Report and the Enforcement Action Plan for the Single Market.

The European Commission established fundamentals for Europe's industrial transformation to support the industry towards climate neutrality. Modernising and decarbonising energy intensive industries is one of the top priorities.

In November 2021, the European Parliament adopted an INI report "A new industrial strategy for the EU: Recovery, Reconstruction and Transformation", taking also into account the need for a strong recovery of the EU after the COVID-19 pandemic.

In May 2021, the European Commission published a Communication - "Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery ". This document focuses on the development of new solutions in the renewables ecosystem (ex. PPAs) and on protecting the construction industry from excessive price growth and improving its sustainability efficiency. In the first half of 2022, DG GROW is working on the transition pathways for different industrial ecosystems among which the renewables ecosystem is most important for the heat pump sector.

Relevance of the topic for the heat pump sector:

Particular visibility should be also given to parts of the industry that help other industries to meet Europe's climate ambitions. Large and commercial heat pumps are excellent examples worth promoting.

Our objectives:

- It is important for EHPA that sufficient visibility is given to the heating and cooling sector (and heat pumps in particular) for the industrial recovery in Europe.
- To create a heat pump alliance
- To highlight the role of large heat pumps used in industry
- Increased attention to skilling and reskilling of installers

Energy Taxation & ETS

In October 2003, the EU set out a number of rules on the taxation of energy products through the Energy Taxation Directive. These energy products include electricity, motor fuels, heating fuels and more.[6]

After evaluating the directive in September 2021, the European Commission concluded that the current rules do not contribute to the climate and energy policy objectives (see European Commission 'Commission report : Evaluation of the Energy Taxation Directive'. To align taxation of energy products and electricity with EU energy and climate policies, the European Commission proposed a revision of the Energy Taxation Directive in the framework of the fit for 55 package in June 2021. The new proposal is now being discussed by the Council. The proposal would ensure that electricity is lower taxed than other energy carriers such as fossil gas.

As part of the EU Green Deal and the fit for 55 package, the European Commission is proposing to revise and possibly expand the scope of the EU ETS to transport and the building (heating) sector.

The EU ETS works on the 'cap and trade' principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by installations covered by the system. The cap is reduced over time so that total emissions fall. Within the cap, companies receive or buy emission allowances, which they can trade with one another as needed. The limit on the total number of allowances available ensures that they have a value. After each year a company must surrender enough allowances to cover all its emissions, otherwise heavy fines are imposed. If a company reduces its emissions, it can keep the spare allowances to cover its future needs or else sell them to another company that is short of allowances. Trading brings flexibility that ensures emissions are cut where it costs least to do so.

The sectors and gases currently covered by the current EU ETS are among others CO_2 from power and heat generation, energy intensive industry and commercial aviation.

The proposed introduction of an ETS extended to buildings and transport is combined with the introduction of a Social Climate Fund (SCF) that would be worth 72.2 billion euros for the period 2025-2032. The SCF aims to support households in Europe that will be most affected or at risk of energy or mobility poverty. The extension of the ETS and the SCF are currently being discussed by the Council and the Parliament.

Relevance of the topic for the heat pump sector:

- It is a priority for EHPA that a level playing field between the different energy carriers is created by balancing the taxation of different energy carriers and by internalising carbon costs. That way, the most energy-efficient and sustainable heating and cooling options will become cheaper, making it natural to switch to these solutions when renovating.
- ETS2, the Energy Taxation Directive and a lower VAT on heat pumps and electricity used for heat pumps would help creating this level playing field.

[6](KPMG 'Shifting the narrative of the EU's energy taxation directive' (2021), https://home.kpmg/xx/en/blogs/home/posts/2021/11/shifting-the-narrative-of-the-eu-energy-taxation-directive.html (Last accessed 27/04/2021).)

REPowerEU

In the REPowerEU Communication of 8 March 2022, the European Commission proposes an outline of a plan to make Europe independent from Russian fossil fuels well before 2030, starting with gas, in light of Russia's invasion of Ukraine.

This plan also outlines a series of measures to respond to rising energy prices in Europe and to replenish gas stocks for next winter. REPowerEU will seek to diversify gas supplies, speed up the roll-out of renewable gases and replace gas in heating and power generation. This can reduce EU demand for Russian gas by two thirds before the end of the year. In May 2022 the European Commission will publish a detailed plan with measures on how to achieve this.

Relevance of the topic for the heat pump sector:

The REPowerEU Communication includes a fast forward target of 10 million hydronic heat pumps to be installed by 2026 aiming at doubling the installation rate, and a total of 30 million newly installed hydronic units by 2030. Extrapolating this to all heat pump technologies covered in EHPA statistics, would represent more than 20 million heat pumps by 2026 and 60 million heat pumps by 2030.

Our objectives:

To stress that the sector is ready to scale up but empowerment is needed in the form of:

- Creating trust in long term ambition for all heat pump technologies
- Making clean heating economically the most attractive,
- Avoiding disruption through legislation (F-gas regulation, Ecodesign)
- Focusing on skills for the energy transition
- Increased R&D
- Creating a heat pump accelerator to bring all stakeholders together and push this forward

2.2 Ecodesign and Energy labelling

The Ecodesign Directive and the Energy Labelling Regulation are elements of a broader product policy aiming at increasing the energy efficiency of products, reducing their overall environmental impacts, promoting the free-movement of energy-related products within EU, and providing consumers with information allowing them to select the more energy efficient products.

EHPA has been actively involved in the development and implementation of the Ecodesign Directive and the Energy Labelling Regulation over the past years. It constitutes one of the core policy priorities of EHPA.

An Ecodesign and Energy Labelling Working Plan points out the European Commission's working priorities for the identified period by presenting ongoing work and upcoming reviews of existing product-specific measures, identifying additional product groups to be further examined and by setting out how

Ecodesign would better contribute to circular economy objectives. The European Commission is now operating under the Ecodesign Working Plan for the 2022-2024 period, adopted in March 2022 to ensure that this successful policy will continue to contribute to the EU's energy efficiency targets.

2.2.1 Ecodesign

[7] *(Directive 2009/125/EC of 21 October 2021, repealing Directive 2005/32/EU)*

The Ecodesign Directive 2009/125/EC[7] establishes EU-wide implementing measures for improving the environmental performance of products placed on the EU market. Products-specific implementing regulations set requirements for individual product groups under the Ecodesign Directive, a process managed by the European Commission. EU Ecodesign regulations require manufacturers to decrease the energy consumption of their products by establishing minimum energy efficiency standards.

EHPA is actively involved in the development of the product groups targeting heat pump technologies. The aim is to monitor the ongoing activities in the different legislations and standards and to seize the opportunity to influence and shape the EU developments.

Relevance of the topic for the heat pump sector:

- Ecodesign is of the highest importance to the heat pump industry as it sets requirements to be met directly by manufacturers. It ensures that inefficient and outdated technologies will be kept out of the European market, thus fostering continuous innovation. Therefore, the heat pump sector favours the standards imposed on heating and cooling solutions. Heat pumps are already encompassed in several specific Ecodesign regulations (Lot 1, 2, 6 and 10).

ENER Lot 1 (hydronic space heating) & ENER Lot 2 (Water heating)

Under these two specific regulations implementing the Ecodesign Directive 2009/125/EC, Ecodesign requirements are mandatory for all space and combination heaters (see Commission Regulation (EU) No 813/2013 of 2 August 2013), and all water heaters and storage tanks (see Commission Regulation (EU) No 814/2013) manufacturers and suppliers wishing to sell their products in the EU.

A review study for the regulations concerning these products was launched in 2017 and was expected to be finalised in July 2019. However, the European Commission decided to add a step to the revision process: a follow-up project for space and water heaters has started in October 2019 providing technical support to the European Commission in carrying out the impact assessment. Many working group meetings have been organised on specific and technical topics (hydrogen, testing, calculation, and water heaters). EHPA is among the consulted stakeholders in the four working groups.

The impact assessment is now ongoing until September 2022. In the meantime, the European Commission is organising some technical meetings on self-monitoring and the compensation method to finalise its proposal. The European Commission proposal should be ready in September for the inter-service consultation phase and should be adopted in Q3 2023.

ENER LOT 6 (Multifunctional Units)

Over the past years, in collaboration with other industry associations, EHPA has been working on the integration of Multifunctional Units in the scope of ENER Lot 6 on Ventilation Units (see Commission Regulation (EU) No 1253/2014 of 7 July 2014). Originally, they were meant to be part of the scope of Lot 10 on air conditioners and comfort fans.

In March 2021, the European Commission presented its proposal of introducing Multifunctional Units into the ongoing revision of Lot 6 on Ventilation Units. The publication of the impact assessment has been delayed for a year. The European Commission decided to add a step to the revision process: a dedicated technical support study which will start before the summer and will last less than twelve months.

ENER Lot 10 (Air conditioners and comfort fans)

Under the Ecodesign regulation 206/2012 (see Commission Regulation (EU) No 206/2012 of 6 March 2012), specific Ecodesign requirements for room air conditioning appliances entered into force in 2012. The regulation is being revised jointly with the labelling regulation.

The preliminary proposals for updated regulations were issued in July 2019 and followed by a Consultation Forum meeting. However, the European Commission decided to add a step to the revision process to study further alternative methods for the testing method, comfort fans, fixed double ducts, and the merging of the labels.

The impact assessment is still ongoing and should be published in Q3 2023 together with the revised regulation. The publication has been postponed a second time to be in phase with the review of the Regulation (EU) 1186/2015 on Lot 20 local space heaters. The European Commission is considering the merging of the energy labels from Lot 10 and Lot 20 and this study should finish before the end of 2022.

2.2.2 Energy labelling

The Energy Labelling Regulation[8] complements those Ecodesign requirements with mandatory labelling requirements. The energy label is an EU tool to help consumers choose energy-efficient products.

A change in the scale and other labelling parameters has been foreseen in the new Energy Labelling Regulation, which came into force in 2017, thus replacing the previous directive. Under the new provisions, the scale spread for all energy-related products will be changed to a standardised one from A to G, to help consumers make better-informed purchasing decisions. A rescaling will be implemented and the top classes (for heating products, only the top class 'A') will be left empty in order to encourage industries to be more innovative and become more energy efficient.

Heat pumps were not immediately affected by these new provisions. The rescaling of the labels has been proposed in the revision of the Regulations 811/2013 (Lot 1), 812/2013 (Lot 2) and 206/2012 (Lot 10). For the moment, the rescaling of the labels is only a draft proposal from the European Commission.

[8] *(Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU)*

For Lot 1 and 2, the proposal should be adopted in Q3 2023 and implemented in 2025.

In addition, EPREL, a product database, has been set up under the new Regulation in order to make it easier to compare the energy efficiency of household appliances. EPREL is consisting of a public and a compliance part which have different access rights. The compliance part of the EPREL database is already in operation. Since 1 January 2019, heat pump manufacturers and suppliers have been required to upload the necessary data to ensure that their products are allowed on the market. The National Market Surveillance Authorities can verify that the products meet the requirements laid out in the Ecodesign and Energy Labelling Regulations. In March 2022, the public database (BETA version) was launched. Consumers are now able to consult the product database for energy labels and product information sheets. The database is accessible via the website or the product Qr code.

Relevance of the topic for the heat pump sector:

- The energy labelling aims to help consumers make informed choices and push consumers toward better products. Since heat pump technologies are in the highest classes of the energy label in heating, cooling, and domestic hot water, the sector indirectly benefits from this additional communication. EHPA strongly supports the rescaling of the energy label which gives more visibility to the most performant products on the market, the heat pump technologies.

2.2.3 Ecodesign for Sustainable Products Regulation

On 30 March 2022, the European Commission presented its sustainable products package proposal to make sustainable products the norm in the EU. This proposal is one of the cornerstones of the European Green Deal and the 2020 Circular Economy Action Plan. The package will contribute to reaching the EU's environmental and climate goals, doubling the circularity rate of material use and achieving energy efficiency targets by 2030.

The package includes a proposal for a Regulation on Ecodesign for Sustainable Products which is the most relevant for EHPA.

The new Ecodesign for Sustainable Products Regulation will amend the Market Surveillance Regulation (EU) 2019/1020 and repeal the Ecodesign Directive 2009/125/EC. The proposal aims to set standards to make products on the EU market greener, more durable and easier to repair, recycle or upgrade. The Regulation sets general minimum Ecodesign requirements, performance requirements, and information requirements (Digital Products Passport) which will then be tailored to the particular characteristics of the product groups concerned via delegated acts.

As part of this new Ecodesign Regulation, the European Commission proposed an EU Digital Product Passport to ensure that actors along the value chain, including consumers, economic operators, and competent national authorities, can access product information relevant to them. The Commission also wants to ban the destruction of unsold goods and to require companies to publicly disclose the number of unsold products discarded annually.

The proposal is going under the co-legislative procedure; the European Parlia-

ment and Council will propose amendments. We expect the Regulation to enter into force in 2025.

Relevance of the topic for the heat pump sector:

- In the same sense as the Ecodesign Directive, the Ecodesign for Sustainable Products Regulation is of the highest importance to the heat pump sector as it sets minimum Ecodesign, sustainability and information requirements to be met directly by manufacturers. It ensures that unsustainable technologies and business models will be kept out of the European market, thus fostering continuous innovation.
- Heat pumps are already performing well and are an example when it comes to long-lasting products, availability of spare parts, repair and maintenance.

2.3 Refrigerants related policies

Fluorinated gases (F-gases) are greenhouse gases with a strong global warming effect.

F-gas Regulation

To control those emissions, the EU adopted the 'F-gas Regulation'. The Regulation limits the total amount of the most important F-gases that can be sold in the EU from 2015 onwards and organises a phase-down in steps to one-fifth of 2014 sales in 2030. The Regulation also bans the use of F-gases in many new types of equipment where less harmful alternatives are widely available and prevents emissions of F-gases from existing equipment by requiring checks, proper servicing and recovery of the gases at the end of the equipment's life.

In September 2020 the European Union ratified the Kigali Amendment to the Montreal Protocol, which aims to bring about a global phasedown of hydrofluorocarbons (HFCs) - powerful greenhouse gases. Global implementation of the Kigali Amendment would prevent up to 80 billion tons CO2 equivalent of emissions by 2050. This would make a significant contribution to the Paris Agreement objective of limiting the global temperature rise to well below 2°C. The Kigali Amendment entered into force on 1 January 2021. For the objectives to be achieved effectively and cost-efficiently, all governments and relevant industries should already be taking action now to ensure that the most climate-friendly alternatives are being used.

By the end of 2022, the European Commission must present a comprehensive review on the effects of the regulation, including:

- A forecast of the continued demand for hydrofluorocarbons up to and beyond 2030;
- An assessment of the need for further action by the Union and its Member States in light of existing and new international commitments regarding the reduction of fluorinated greenhouse gas emissions;

- An overview of European and international standards, national safety legislation and building codes in Member States in relation to the transition to alternative refrigerants;
- A review of the availability of technically feasible and cost-effective alternatives to products and equipment containing fluorinated greenhouse gases for products and equipment not listed in Annex III, considering energy efficiency.

In that perspective, the European Commission issued 3 reports: on SF6, on air-conditioning & on availability of HFC.

By December 2021, the EC is to publish its proposal for a revised F-Gas Regulation by the end of 2021 and is expected to be adopted sometime in 2023.

Since the withdrawal of the United Kingdom (UK) from the EU in February 2021, the UK has become a third country. The transition period ended in December 2021, and the F-gas and Ozone-depleting Substance (ODS) regulations no longer apply to the UK, however most of the requirements have been transferred into UK law.

Relevance of the topic for the heat pump industry:

- Heat pumps traditionally use HFCs as refrigerants. The industry has, therefore, to directly comply with the obligations arising from the F-Gas regulation. The F-Gas regulation also expects the industry to develop and deploy alternative refrigerants, an action that EHPA has been strongly promoting.
- EHPA has started to work on the review of the F-Gas regulation that is most likely to affect the refrigerants' market and thus the heat pump industry. With this regard, EHPA submitted replies to the 2021 EC consultation papers and participated in several discussions with policy-makers.
- EHPA believes that the F-gas Regulation has delivered the expected results so far and that no major changes should brought to it. EHPA reiterates the importance of aligning all EU policies with the EU Strategy for Energy System Integration (and the need to quadruple the number of installed heat pumps in Europe by 2030).

PFAS

Since 2021, the authorities of five EU/EEA Member States (The Netherlands, Denmark, Germany, Norway and Sweden) have been preparing a joint REACH restriction proposal on the manufacture and use of a wide range of per- and polyfluoroalkyl substances (PFAS) which could affect fluorinated greenhouse gases (F-gases).[9]

The national authorities will prepare the restriction proposal (Annex XV dossier) over the coming two years. Once the proposal is submitted, which is planned for early 2023, it will move to ECHA's scientific committees for opinion making. Decisions on REACH restrictions are made in the European Commission by the EU Member States and scrutinized by the European Parliament and Council. The possible date of entry into force of this restriction is expected in 2025.

[9] *(Restrictions usually limit or ban the manufacture, placing on the market or use of a substance. https://echa.europa.eu/en/restriction-process)*

EHPA is closely following the discussions on this topic.

Relevance of the topic for the heat pump industry:

- Fluorinated greenhouse gases (F-gases) could fall into the remit of the new proposal on PFAS and consequently the REACH restriction could strongly affect the heat pump industry.

2.4 EU project Investment, Research and Innovation

Investment

The European Green Deal Investment Plan and Just Transition Mechanism represent the European flagship investment instruments of the decade. The European Green Deal Investment Plan (EGDIP), also referred to as Sustainable Europe Investment Plan (SEIP), is the investment pillar of the Green Deal. To achieve the goals set by the European Green Deal, the Plan will mobilise at least €1 trillion in sustainable investments over the next decade, with the Just Transition Mechanism targeting a fair and just green transition.

The European Green Deal Investment Plan has three main objectives:

- Increasing funding for the transition, and mobilising at least €1 trillion to support sustainable investments over the next decade through the EU budget and associated instruments, in particular InvestEU (which will dedicate at least 30% of mobilised investments to climate- and environment-related projects);
- Creating and enabling a framework for private investors and the public sector to facilitate sustainable investments;
- Providing support to public administrations and project promoters in identifying, structuring and executing sustainable projects.

Prompted by the ongoing pandemic, a recovery instrument worth 806.9 billion euro (current prices), the Next Generation EU (NGEU) and a revised Multiannual Financial Framework (MFF), were presented in mid 2020 (the revised MFF and NGEU total 2 017.8 billion euro). Highlighting that the recovery plan will be closely linked to the European Green Deal and including additional financing for climate-related instruments such as the Just Transition Fund. The share of the total resources to be devoted to climate-relevant measures has been raised from 20% (2014-2020 period) to 30%. This objective of climate mainstreaming will apply to both the MFF and NGEU, meaning climate-relevant projects could receive some 550 billion euro (2021-2027).

With the Just Transition Mechanism (JTM) mobilising around 55 billion euro of investments over 2021-2027 with financing coming from three pillars:

- The Just Transition Fund (of €19.2 billion in current prices, is expected to mobilise around €25.4 billion in investments);
- The InvestEU "Just Transition" scheme (will provide a budgetary guarantee under the InvestEU programme across the four policy windows and an InvestEU Advisory Hub that will act as a central entry point for

advisory support requests. It is expected to mobilise €10-15 billion in mostly private sector investments);

- European Investment Bank (EIB) public sector loan facility (will combine €1.5 billion of grants financed from the EU budget with €10 billion of loans from the European Investment Bank, to mobilise €18.5 billion of public investment).

Complementing the Just Transition Mechanism, other funding opportunities made available for the energy sector are: the European Energy Efficiency Fund (EEEF), a public-private partnership dedicated to mitigating climate change through energy efficiency measures and renewables; the Private Finance for Energy Efficiency (PF4EE), a joint agreement between the EIB and the European Commission which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments; the Connecting Europe Facility (CEF) for trans-European energy infrastructure projects (CEF Energy) and the call for Cross-Border Renewable Energy (CB RES) projects; the European Structural Investment Funds (ESIF), that comprises five funds including: the European social fund (ESF), supports employment-related projects throughout Europe and invests in Europe's human capital; the Cohesion fund (CF), funds transport and environment projects in countries where the gross national income (GNI) per inhabitant is less than 90% of the EU average. With the European Regional Development Fund (ERDF), showcasing initiatives such as the EU wide Urban Innovative Actions (UIA) or Regional such as the Kansen voor West in the Netherlands.

Additionally, the Innovation (large and small scale project grants) and Modernisation (supporting 10 lower-income EU Member States in their transition to climate neutrality by helping to modernise their energy systems and improve energy efficiency) funds, which are not part of the EU budget, but are financed by a part of the revenues from a key policy tool - the auctioning of carbon allowances under the EU Emissions Trading System, will provide some 25 billion euros for the EU transition to climate neutrality.

The Innovation Fund in particular, represents a key funding instrument for delivering the EU's economy-wide commitments under the Paris Agreement while supporting the European Commission's strategic vision of a climate neutral Europe by 2050. It focuses on: Innovative low-carbon technologies and processes in energy intensive industries, including products substituting carbon intensive ones; Carbon capture and utilisation (CCU); Construction and operation of carbon capture and storage (CCS); Innovative renewable energy generation; Energy storage. The Fund amounts to about 10 billion euro, depending on the carbon price. With a special interest in Small-scale projects (with total capital costs below EUR 7.5 million) and Large-scale projects (with a capital expenditure above EUR 7.5 million) and calls for them being opened every year. And the additional option of joining as an energy expert, to evaluate projects applying for funding from the Innovation Fund. In parallel to the Innovation Fund, the EU ETS provides the main long-term incentive for these technologies to be deployed. With an exclusive look into how the Innovation Fund applies to the HP sector (and potential project applications) via our "Innovative large scale Heat Pump projects: the 3rd Innovation Fund Large-Scale Call" webinar (information available HERE).

Lastly, private investment from cities and regions can also spur innovation and co-financing with one example being that of the 'Global one-million-euro chal-

lenge' offered by the city of Helsinki. While being supported by the New European Bauhaus, an environmental, economic and cultural project, aiming to combine design, sustainability, accessibility, affordability and investment in order to help deliver the European Green Deal. With hundreds of examples being available as part of the EHPA Heat Pump Award (HPA), former Heat Pump City of the Year (HPCY) Award.

Relevance of the topic for the heat pump industry:

- The European Green Deal Investment Plan and Just Transition Mechanism represent a massive commitment, both financially and politically, towards the green transition. This, in addition to CV-19 related national economic stimulus/bailout packages and NGEU, means that the potential for a radical change in direction is evident as the opportunity to create and accelerate the transition towards renewable, clean energy that will allow for sustainable heating and cooling, while relaunching economic development, technological progress and job creation.
- The priorities identified for InvestEU (promotion of recovery, green growth, employment and well-being, supporting investment that delivers real benefits and makes a difference at the local level) can also contribute to promoting the installation of HPs and trigger further broad and integrated investments in energy efficiency and renewable generating capacity.
- The large number of funding opportunities available show how important the energy sector is for the European Union from a technical, economic, security and strategic perspective. With an accelerated shift being made as a result of the geopolitical situation surrounding energy imports originating from the Russian Federation.
- The focus on skill creation and upskilling can directly impact the stakeholders in the design, manufacturing, retail, installation and servicing of HPs. As, promoting new knowledge can directly shift the market perception towards recommending HPs and the practical skills can ensure the capacity to install and service correctly the devices, increasing efficiency and customer satisfaction.
- The Innovation Fund can support new developments and design in the HP sector, while creating coupling opportunities with energy storage technologies and showcasing them in real world operation via its large- and small-scale grants (these grants can be supplemented by national funding schemes). Apart from the general call for proposals, three specific REPowerEU [10] windows will support (1) innovative electrification and hydrogen applications in industry, (2) innovative clean tech manufacturing (such as electrolysers and fuel cells, innovative renewable equipment, energy storage or **heat pumps for industrial uses**), and (3) mid-sized pilot projects for validating, testing and optimising highly innovative solutions.
- Competitions organized by cities and regions as per the Helsinki challenge can further fund the design, construction and deployment of sustainable HP based heating and cooling solutions.

[10](Press Release: REPowerEU: heat pump strategy required to help sector deliver 18 May 2022)

Research

The European Commission's Energy Union strategy dedicates one of its five dimensions to research, innovation, and competitiveness. The most relevant topics relating to research at EU level are the European Strategic Energy Technology Plan (SET-Plan), Horizon Europe (including European Technology and Innovation Platforms (ETIPs), Horizon Europe Partnerships (HEPs), Horizon Europe Missions, Horizon Europe Public Private Partnerships, Horizon Impact Award). With additional avenues of funding coming from Interreg - aiming to ensure that government investment, innovation and implementation efforts all lead to integrated and sustainable impact; the LIFE Programme - funding environmental and climate actions since 1992, with the current funding period of 2021-2027 having a budget of 5.4 billion euro (in current prices); JPI-Urban Europe designed for transdisciplinary research and innovation projects that enable capacity building; Mission Innovation (MI) that has members which represent over 90% of global public investments in clean energy innovation and have increased their annual investments by USD 5.8 billion since 2015, working to reinvigorate and accelerate global clean energy innovation with the objective to make clean energy widely affordable; IraSME focusing on transnational R&D projects; the Joint Programming Platform Smart Energy Systems (JPP SES), in cooperation with the GEOTHERMICA ERA-Net network, joint call for proposals for transnational projects.

The SET-Plan promotes research and innovation efforts across Europe by supporting the most impactful technologies in the EU's transformation to a low-carbon energy system. The EU Commission, together with the Member States and energy stakeholders, is currently working on implementation plans, which aim to give concrete guidelines to develop, in all EU countries, the targets identified in the declarations of intent. EHPA is part of the Implementation Working Group (IWG) 5 “Energy Efficiency in Buildings” and has contributed to the draft of the implementation plan. With HPs also being mentioned in: SET Plan action 4: on increasing the resilience and security of the energy system and SET Plan action 6: Continue efforts to make EU industry less energy intensive and more competitive. With work starting in 2022 on the next SET-Plan work programme.

With the first successful Horizon Europe (HE) calls already in the grant agreement stages, the Research and Innovation programme (Horizon Europe: 2021-2027) builds on the achievements and success of Horizon 2020. HE (the 9th Framework Programme) was proposed in June 2018 by the European Commission with a 95.5 billion euro budget as a part of the EU-long-term-budget (Multiannual Financial Framework) for the years 2021–2027. With the first Work Programme (2021-2022) being in full swing, while the preparations for the next one (2023-2024) being already underway.

Significant development of HE, being represented by the creation of Horizon Europe Partnerships (European partnerships with EU countries, the private sector, foundations and other stakeholders), with the aim of delivering on global challenges and industrial modernisation through concerted research and innovation efforts. Of particular interest to the energy sector being the HE partnerships for Buildings (Built4People), Clean Energy Transition Partnership (CETP) and Driving Urban Transitions (DUT), EHPA taking an active role in all three. Additionally, the continuation of the European Technology and Innovation Platforms (ETIPs), of which EHPA is part of the Renewable Heating and Cooling

(RHC) secretariat and chairs the Heat Pump Technology Panel (HP TP).

HE Missions that incorporate research and innovation to increase the effectiveness of funding by pursuing clearly defined targets. Of which, of particular interest, being the: 1) Resilient Europe - Prepare Europe for climate disruptions and accelerate the transformation to a climate resilient and just Europe by 2030 - preparing Europe to deal with climate disruptions, accelerating the transition to a healthy and prosperous future within safe planetary boundaries and scaling up solutions for resilience that will trigger transformations in society; 2) 100 Climate-Neutral Cities by 2030 - by and for the citizens - supporting, promoting and showcasing 100 European cities in their systemic transformation towards climate neutrality by 2030 and turning these cities into innovation hubs for all cities, benefiting quality of life and sustainability in Europe.

The European Innovation Council (EIC) pilot programme become a fully-fledged funding body in 2021, with a brief to inject hundreds of millions of euros into promising tech companies, to try and breed made-in-Europe 'unicorn' companies valued at 1 billion-plus euros. While part of the money will be in the form of traditional grants, EIC is also able to make direct equity investments. The EIC board requiring "at least €10 billion" from the Horizon Europe research programme, in order to attract a further 30-50 billion euros from private investors. The amount would make the commission one of the biggest investors in high-growth companies in Europe. With the first calls for application launched in March 2021 and continuing in 2022, the EIC supports all stages of innovation - from R&D to breakthrough technologies, validation and demonstration - through the following schemes:

- EIC Pathfinder [TRL 1-4] - consortia or single applicants
- EIC Transition [TRL 4-5/6] - small consortia or single applicants
- EIC Accelerator [TRL 5/6-8] - single start-ups and SMEs

The Public Private Partnerships under HE under the "New Industrial Strategy for Europe" 102 final.), tackling: 1) "Energy-intensive industries are indispensable to Europe's economy and are relied on by other sectors. Modernising and decarbonising energy-intensive industries must therefore be a top priority"; 2) "Industrial sectors should be invited and incentivised to define their own roadmaps for climate neutrality or digital leadership. These should be enabled by high quality research and skills and supported by the EU. Several sectors have already taken this approach since the launch of the European Green Deal. In the co-design and entrepreneurial spirit of this strategy, this should be supported through Public Private Partnerships to help industry develop the technologies to meet their goals, as has successfully been done in industrial alliances". With a special focus on the Processes4Planet Partnership, that represents an essential tool to deliver the required innovations, building on the achievements of SPIRE and aiming to enhance resource and energy efficiency in process industries.

The LIFE programme (2021-2027), departed from the previous research and funding areas, as market uptake activities previously funded under the Energy Challenge of Horizon 2020 will continue under LIFE, in a Clean Energy Transition sub-programme. Making it the only EU funding programme dedicated exclusively to environment, climate and energy. During the next programming period (2021-2027) LIFE will contribute to:

- The shift towards a circular, energy-efficient, renewable energy-based, climate-neutral and resilient economy;
- The protection and improvement of the quality of the environment;
- Halting and reversing biodiversity loss and tackling the degradation of ecosystems. With EHPA submitting the first proposals for this programme in January 2021.

The ERA-NET co-funded Urban Transformation Capacities (ENUTC), welcomes a broad range of research and innovation projects that enable capacity building for urban transformations, clearly build upon previous experiences of building capacity in practice and build upon existing knowledge of transformation capacities towards urban sustainability and resilience. Projects should study transformation processes and transformative capacity building for increased knowledge and understanding of such processes making it possible to develop this knowledge further using new technologies and tools for implementation of research and innovation and to ensure possibilities for scaling up. Additionally, the GEOTHERMICA Era-Net, in cooperation with the network Joint Programming Platform Smart Energy Systems (JPP SES), launched in May 2021 a joint call for proposals for transnational projects. Seeking to accelerate the heating and cooling transition by bringing together national and regional programmes aimed at energy system integration and technological progress in the various heating and/or cooling technologies, with a strong presence but not limited to geothermal energy technologies [11].

[11] *(http://www.geothermica.eu/joint-call-2021/)*

Mission Innovation, announced at COP21 in 2015, had already by the end of 2021, help deliver several outcomes:

- A substantial boost in public-sector investment in clean energy RD&D at the national level of MI members.
- Increased private sector engagement and investment in energy innovation, particularly in key Innovation Challenges.
- Many new or strengthened voluntary cross-border networks and partnerships on energy innovation, greater engagement from innovators, and accelerated progress in addressing specific Innovation Challenges.
- Greater awareness amongst MI members and the wider clean energy community of the transformational potential of energy innovation, the progress being made, and the remaining critical clean energy innovation gaps and opportunities.

IraSME, started in 2005 as an ERA-NET and until 2010 supported by the European Commission's 6th and 7th Framework Programme for Research and Development, has been since January 2011, a self-sustained network of several national funding agencies coordinated by the German AiF Projekt GmbH with financial means from the German Federal Ministry for Economic Affairs and Energy (BMWi). Funding being provided to states and regions from the EU as well as North and South America for:

- Development of new products, processes or technical services.
- Technical development from the first idea to a possible prototype.
- R&D with significant technical risks for each funded partner.

- Minimum constellation: 2 companies from 2 participating countries/ regions.

Note that the Innovation and Networks Executive Agency (INEA) has been officially replaced by the European Climate, Infrastructure and Environment Executive Agency (CINEA).

Relevance of the topic for the heat pump industry:

- The SET-Plan represents a unique opportunity for the R&I of the heat pump sector as it aims to deliver: recommendations for R&I funding priorities and policy measures at European, national and regional levels; concrete and refocused commitments of private sector stakeholders and research organisations in delivering better technologies/solutions. EHPA will be involved in shaping the next priorities.
- Horizon Europe gives the opportunity for the heat pump industry to deploy and adapt its technology to different applications (from industrial processes to smart buildings to district heating) in different countries and climates. And to take full advantage of the opportunities offered as part of the diverse HE Clusters. Of particular interest being: 1) Cluster 2: Culture, Creativity and Inclusive society; 2) Cluster 4: Digital, Industry and Space; 3) Cluster 5 - Climate, Energy & Mobility; 4) Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture & Environment
- HE partnerships represent a way of having a common voice as a group of relevant stakeholders. As in the case for the Buildings and Energy Transition related partnerships, HPs will have a key role to play. With Public Private Partnerships offering a new way for industry to engage and collaborate with policymakers.
- The LIFE programme and its Clean Energy Transition sub-programme, offers yet another portal for energy transition projects relevant to HP development and deployment. However, due to the move from HE to LIFE, these projects will not benefit from the same level of financing and will require additional co-financing from other stakeholders (e.g. at a national or regional administrative level), this increasing the requirements and complexity in managing and planning such projects.
- The EIC offers a good starting point to grow and expand the capabilities of SMEs working in the heating and cooling sectors. Providing funding for innovative management, manufacturing, automation, design and software solutions towards more efficient devices and processes in our sector. With additional SME funding coming from instruments such as IraSME.

To keep up to date with all the funding and investment instruments as well as the research, innovation and projects already underway in the HP field, EHPA launched its **Research and Innovation (R&I) Committee**. Which aims to establish a diverse and expanding group that can exchange information regarding research, innovation, project calls, initiatives, gaps in technology development and opportunities for advancement. To map HP related R&I at European level and to connect with diverse stakeholders that can offer different perspectives, skills and knowledge. The committee is open to EHPA members and non-mem-

bers, with more information on the EHPA website and its next meetings being scheduled for: 23rd of June 2022 and 10th of November 2022 (both online from 10:00 to 12:00 CET).

For more information on the current and future funding calls (Horizon Europe (multiple clusters), LIFE, Tenders (if available at this time), Innovation Fund, Interreg, and other types of funding (some region/country specific), please consult the EHPA's upcoming project calls available via an online form. While a database of Renewable Heating and Cooling projects is managed by EHPA as part of its work on the ETIP RHC, with additional projects being added on a regular basis.

For more information on these calls and funding opportunities, please contact: dan.stefanica@ehpa.org.