







National Expert Forum web meeting

HARP Heating Appliances Retrofit Planning

21 ottobre 2020 ore 10.30







- 1. Stato di avanzamento progetto HARP
- 2. Presentazione HARP-a (tool per l'etichettatura energetica)
- 3. Prima campagna di sensibilizzazione: materiali per consumatori e professionisti
- 4. Definizione delle modalità di supporto dei membri del NEF



STRATEGIA NAZIONALE: MATERIALI PER CONSUMATORI

1° campagna invernale

- 3 articoli: «about HARP», co-benefits e behaviour change model;
- 2 video: app HARP-a ed «efficient heating technologies on the market»;
- 6 factsheets sulle principali tecnologie per il riscaldamento;
- Brochure sulle tecnologie efficienti;
- 1 Infografica "10 misconceptions sul riscaldamento";
- 1 online serious games: quiz "the heat you know";
- social media campaign.

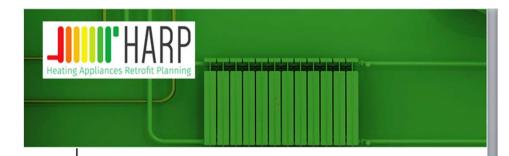
2° campagna invernale

- 2 articoli;
- 1 video TBD;

- 1 Infografica TBD;
- 1 online serious game: memory game "heat your memory";
- social media campaign.



ARTICOLI



Reduce your energy bill and your environmental footprint with efficient heating solutions

October 13,2020

By Jauné Vaitkevičiūtė, ENERGIES 2050

Climate change and heating technologies - what do they have in common?

Heating is a basic need which often appears as a synonym of higher energy bills in winter for a large part of European households. Imagine a space of 19.5 billion square metres: this is the total European residential surface that needs to be heated). Presently this surface is heated by 160.5 million heating units, 60% of which performing inefficiently. Unfortunately, "inefficient" in this context is a synonym of high energy bills, and high greenhouse gas emissions.

The continuously increasing greenhouse gas emissions highlight all the challenges that this brings to the fore. Indeed, climate change accelerates, having direct and indirect impacts on the diverse sectors: ecosystems, health, economic stability, migration, food security, lifestyles... and we pass.

To face these challenges the European Union, as well as European countries at national level, put in place policies and tools focusing on greenhouse gas emissions reduction and energy efficiency improvement. The heating sector is a critical one in this sense, and it should endorse efforts to tackle climate change, namely through the development of tools that help the consumer doing sustainable choices and help reduce harmful emissions, climate change by promoting energy efficiency.



(Source: Rudy and Peter Skitterians, Pixobay)

Heating systems in place in the European homes are mostly inefficient

Heating and hot water represent 80% of the energy demand of EU households weighing a large part in the household consumption, but also constitutes an important channel of action for the reduction of greenhouse gas emissions. Three main types of energy sources are used for central space and water heating in European dwellings:

. Fossil energy: Oil fuel, natural gas, and coal (solid fuel). Today fossil fuels are the most polluting ones, although these were originally promoted to offer poorer households the possibility to access energy at lower costs. Moreover, heating systems using exclusively fossil fuels are less efficient today than new alternatives on the market. However, today fossils fuel boilers represent 76% (121 million units) of the entire installed stock, with gas boilers representing the highest part (58%) of European heating installations (see Figure 1). Nevertheless, fossil fuel technologies on today's market can be distinguished for their efficiency - condensing boilers are more efficient than the traditional ones, as they require less energy to heat space and water compared to traditional boilers, thus, reducing pollution and operational costs.



ARTICOLI



What do you value the most when changing your heating appliance?

October 19, 2020

Energies 2050 & University of Nova

Space heating and hot water needs account for nearly 80% of European residential households' energy demand. A major part of the installed heating appliances is not efficient and, thus, increasing the energy consumption, inducing in parallel higher negative environmental impact, and increasing energy bills. However, today's market offers solutions to reduce the energy consumption by installing efficient heating system! Well... maybe it is time to change?



What does motivate you to change?

Heating appliances have a long-life period, with an average above 15 years old. This means the decision to replace these appliances with newer and more efficient solutions does not happen often. The most often the heating system replacement is an emergency decision upon the break or malfunction of the existing appliances. Therefore, there might be other factors that could motivate the change: Maybe it is to save money and to protect the environment? The increased comfort and lower noise impacts? Or maybe the social circle or the easy access to the information and to a professional support?

We have a response! A study was conducted in five European countries – France, Germany, Italy, Portugal, and Spain – to understand consumers decision process. Three key findings were identified regarding the motivations to replace an old and inefficient heating system:

Co-benefits

Did you know that efficient heating systems can offer more than direct benefits of saving money and reducing CO2 emissions? Consumers who are **aware of the additional benefits** related with the replacement of an old and inefficient heating solution brings to their home's quality of life (e.g. increased comfort, better air quality, lower noise, lower greenhouse gas emissions, etc) are more likely to look for information and change to a more efficient heating system.

You want to know more about co-benefits? Check out our article [Title of article on co-benefits]!

Influencers

Have you ever engaged some actions because your relatives advised you so? As the social circle and connections becomes more and more important in consumers life, in the change of heating equipment is not different. Consumers value their friends and relative's opinion when changing to an efficient heating equipment, considering it as one of the most trusted communication channels.

· Local organisations and energy agencies

Are you looking for a professional advice before engaging in renovation or appliances replacement? You are not alone to have this behaviour. Not only public opinion from social connections is important, but **specialized organizations** also play an important role. Investing in an efficient heating equipment brings more details and specifications than usual shopping, so specialized opinions and advices are still very relevant and represent one of the most credible sources of information.





ARTICOLI



CONSUMER BEHAVIOR CHANGE

What do you value the most when changing your heating appliance? – Look for more information on energy efficient heating and know what to

HARP wants to help consumers to be energy efficient, saving money and protecting the environment. That is why we focus on heating (air and hot water) systems and on how a good evaluation of their performance (labeling) and a timely planning for its replacement can be an added value.

That is why HARP studied the "consumer's behavior mode!" - to make sure we give you the right information. With this knowledge, it is possible to understand what aspects consumers consider to be more relevant regarding the energy efficient heating topic and its replacement.

But how did we build the model? We test several important factors that you can take into consideration when changing your heating appliance.

value for your specific needs.

MAIN FINDINGS

From the 5 participants countries, we found common and specific motivations that, in general, are perceived as the most relevant ones. In a general way, consumers are more likely to replace equipment's in

Co-benefits

exchange of the benefits that it can bring to their and house's health, comfort, etc. That is what we want for you - provide solutions that increases your wellbeing

Influencers

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Local organizations and energy agencies

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Heat my home and water with the

If your heating system is older than 15 years, it might be inefficient and highly energy consuming. Replacing your heating system with a more efficient will help you reduce your energy bill and additionally keep your home more comfortable, improve air quality, increase your home's market value and contribute to reducing global CO2 emissions.

60% of the heating appliances installed in the EU are old and 60% inefficient (energy class C or lower)

A condensing boiler can cover the entire demand for space heating and hot water

Condensing boilers in the market are mostly rated with an A class. on a D to A+++ scale.

Modern condensing appliances are designed to use

virtually the entire energy content of the fuel to transform it into heat. In contrast to previous

generations of these appliances, condensing boilers reuse the heat energy of water vapour produced in the combustion process which 'condenses' back into liquid

form and is ultimately reused to pre-heat the cold water

entering the boiler. This makes the condensing

technology highly convenient, resource- and cost-

Condensing boilers are often the first choice both for new installations and for refurbishment of existing

central heating systems across Europe. For more than

twenty years, the condensing technology has been constantly advancing: increased comfort and energy

efficiency, reduced emissions and noise levels, improved

design, and reduced size to fit any building setting.

Moreover, this highly efficient technology can also be

easily teamed with renewable energy sources such as a

solar thermal system. Finally, condensing technology

efficient for heat generation.

√CHECKLIST

Condensing boiler fits my home because

- ✓ I need a water and/or space heating system.

can be applied to use green fuels such as bigmethane.

Condensing boilers can reach an energy efficiency class B to A, while boilers equipped with the most advanced controls can even reach class A+.

Pompe di calore

Solare termico

- Caldaie a condensazione
- Sistemi ibridi
- Biomasse
- Scaldacqua

A hot water storage tank may lose energy while storing hot water, while instantaneous combi boilers may need more gas when heating small amounts of water. Instantaneous water heaters are more likely to be suitable for smaller households, but usually people make a choice by considering other factors, such as space, water pressure, number of simultaneous bathrooms and the possibility to combine with solar thermal.

BENEFITS

- ✓ Easily combined with renewable energies such

 ※ Reliance on a fuel, thus might need. as a solar thermal systems
- ✓ Compared to conventional boilers, the condensing technology offers increased energy efficiency and reduced emissions
- ✓ Easily installed and maintained
- ✓ Suitable for modernisation existing installations as well as for new buildings
- ✓ Extremely reliable

DISADVANTAGES

- space for storage or infrastructure besides electricity
- * Possible CO2 pricing could increase or fluctuate gas prices and heating cost
- × Yearly maintenance is needed

COMBI BOILER + HOT WATER STORAGE TANK

- ✓ Guarantee high flow rates of hot water
- ✓ Compatible with solar thermal devices
- Can supply multiple draw-off points that consume a lot of water at the same time (i.e. bathrooms, kitchen)
- ✓ Good solution for staged renovation (i.e. retrofitting of entire heating system)

INSTANTANEAOUS WATER HEATER

- Easy, quick and affordable installation Compatible with solar thermal devices
- ✓ Requires less space for installation as it.
- does not need a hot water storage tank ✓ Good solution if a quick fix is needed (i.e.

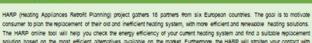
no existing hot water storage tank on site

and if condensing boiler is not the best option for

Check up an numerous efficient heating technologies options (such as solar thermal, heat pumps, hybrid heating, among others)!

Do not hesitate to consult a professional to find the most suitable heating aption for

your home.



The HARP online tool will help you check the energy efficiency of your current heating system and find a suitable replacement solution based on the most efficient alternatives available on the market. Furthermore, the HARP will straiten your contact with professionals that can support you on the replacement process, as well as provide more information on available incentives. Learn more about energy efficient heating in: national link!











EDECO















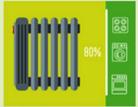






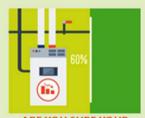
BROCHURE SU TECNOLOGIE EFFICIENTI





DO YOU KNOW HOW MUCH WE ALL SPEND ON HEATING?

Space and water heating represent 80% of the total energy demand of EU households.



ARE YOU SURE YOUR CURRENT SYSTEM IS EFFICIENT?

At European level, 60% of the installed stock consists of inefficient heating systems.

DO YOU HAVE AN OLD SYSTEM? IT'S TIME TO CHANGE!

Whatever the country you are living in, and regardless of the heating system installed, your system is likely to be older than 15 years and thus potentially highly inefficient.

The good news is that there are great solutions for all kinds of budgets and situations



What is the best alternative heating system for you?*

Biomass boiler

Condensing gas boiler

Condensing oil boiler

Direct electric heating**

Heat pumps

Hybrid heating system

Solar Thermal



Ever thought about planning the replacement of your current heating system?

Most people do not think about their heating until it breaks down. Act now and start to compare, plan, and choose the solution that suits you best.

Planning helps to avoid problems and to save money

If you have a system that is older than 15 years, it is time to consider replacing it and startsaving money.

A more efficient system emits less CO₂

Hence, changing your heating system will ultimately help to save resources and protect our planet.





^{**} Highly dependent on the electricity mix in respective country.



INFOGRAFICA



10 Misconceptions about heating

A BIOMASS BOILER CREATES HIGH LEVEL

EFFICIENCY CLASS A AND ABOVE IS SMART FOR MY WALLET

Yes, energy efficient heating has a direct positive effect on your energy bill. What's more? Despite the upfront investment needed, energy efficient heating pays off. The longer act now! If you do have an inefficient heating system currently installed in your home, make

choose an efficient heating system and how to use is efficiently? Here are 10 misconceptions

TO BE COMFORTABLE IN YOUR HOME, YOU NEED TO HEAT TO MORE THAN 20°C Comfort is a personal feeling. You can heat your home to 22 °C and still be cold. If your

home is poorly insulated, damp, or has air leaks, you will experience a temperature lower than that indicated by the thermometer. That is one of the reasons why checking your heater alone is not nough. A good level of insulation is crucial



ALL NEW EFFICIENT HEATING FECHNOLOGIES NEED HIGH INVESTMENT FOR INSTALLATION

In fact, upfront investment is always needed, yes. However, there are efficient heating systems for all budgets available. The main question is that we should look into the total costs over the lifetime of the system, not only the initial investment. And in this case the higher initial investment is clearly advantageous.

MY TOWN DOES NOT HAVE ENOUGH

FOREST ARE BEING DESTROYED JUST TO



THERE IS A SMALL DIFFERENCE BETWEEN CONDENSING TECHNOLOGY AND A

DIRECT ELECTRIC HEATING IS THE MOST ECONOMICAL SOLUTION

Direct electric heating consumes a lot of electricity, although it is an easy-to-install technology in some homes. Note that electricity prices differ a lot between EU countries. In most cases, the use of (green) gases and biomass remains the most economical solution.



are different kinds of heat pumps available (in different sizes), designed for different heat demands and purposes. Some devices are designed to heat/cool an entire house (i.e. gas heat pumps) with multiple rooms while others are better suited for apartments or small studios (air-to-air heat pumps). Most HPs are easy to install, whereas hybrid systems are even suited for renovations.

IT IS BEST NOT TO OPEN WINDOWS OF YOUR HOME DURING WINTER TO AVOID WASTING HEATING

Especially in Winter times, it is mportant to ventilate the rooms 5 to 10 minutes per day to renew the air and evacuate humidity, CO2, and bad smells. However, to avoid losing too much heat, turn off the radiators or convectors when ventilating. Smart heating systems help you to detect open windows and optimise heating during all seasons.

BIOMASS BOILERS ARE LESS EFFICIENT



This project has received funding from the European Union's Horizon 2020 research and novation programme under grant agreement No 847049. The sale responsibility for this content lies with the authors. It does not necessarily reflect







ONLINE SERIOUS GAME: QUIZ

QUIZZ: "The heat you know"

To classify the questions into 3 or 5 levels (5 to 10 questions each depending on the total of questions we have).

If only one mistake is made by level, the access to the next level is allowed. Otherwise, the same level needs to be done again. (Thus, when the answer is false, we do not give the right one in order to let the player try his chance again.)

- 1. Which of the following cannot be considered as renewable energy?
- a) Biomass
- b) Solar energy
- c) Geothermal energy
- d) Nuclear energy
- e) Wind energy
- 2. Which of the following is not a direct objective of the energy transition?
- a) Improve energy security
- b) Protect polar bears
- c) Mitigate climate change
- d) Reduce energy poverty
- e) Reduce air pollution
- 3. Which heating technology has the highest pollution level?
- a) Fuel boiler
- b) Biomass boiler
- c) Condensing gas boiler
- d) Solar thermal
- e) Geothermal heat pump
- 4. Which heating system is the less polluting?
- a) Wood chimney
- b) Electric radiators
- c) Solar panels
- d) Condensing gas boiler
- 5. To sleep well at night, what is the ideal heating temperature for the room?
- a) 17°C







Start date: 01/11/2020 End date: 30/04/2021 Duration: 6 months

Frequency every 2 week (recommended) | 1 per month (minimum)

Target groups End users / consumers.

Hastags Always use: #HARP



SOCIAL MEDIA CAMPAIGN

POST NR.	DATE	WEEK	MATERIAL	SUBJECT	TEASER / HOOK	LINKS	IMAGE -> according to teaser!	WHERE SOCIAL MEDIA	WHO TARGET
1	02-nov	45	Kick off 1st campaign *	Present the project. Invite to website.	Planning your heating equipment replacement is the same as planning your savings. Just do it, with HARP!	HARP web page and consumers organizations web page to find the info about the project an the tool	(1) HARP logo (2) Image of a person thinking about heating systems with A+++		
2	09/nov - 15/nov	46	Promotional video (from ECOS)	Promote the project. Invite to website.	It's time to start thinking about your heating appliance. Find out more about it with HARP project.	National partners webpage on efficient heating	video		
3	16/nov - 22/nov	47	Brochure	Info extracted from the brochure	Have you thought about changing your current heating or hot water system?	National partners webpage on efficient heating, direct link to the national brochure	(1) Image of the brochure (2) someone satisfied and concentrated reading a brochure		
5	23/nov -27/nov	49	Fact Sheet Nr. 1	Heat-pump	Do you know how a heat pump works? Check out the factsheet we prepared for you on heat pump technology.	National partners webpage on efficient heating, direct link to the national brochure	Quality snapshot of the factsheet (in national language)		



MATERIALI PER PROFESSIONISTI

1° heating session

- 2 articoli
- 1 leaflet
- Materiali per sessioni di training



ARTICOLI PER PROFESSIONISTI

HARP Project – labelling residential heating appliances

Several studies confirm a lack of consumer awareness regarding the energy inefficiency of their heating system. This is how HARP (Heating Appliances Retrofit Planning) came about, a project financed by the European Union through the Horizon 2020 framework, in which five countries participate: France, Germany, Italy, Portugal and Spain. Its aim is to encourage the renewal of old and inefficient boilers through the use of energy labelling.

Pedro Luis Espejo Luque. Creara Energy Experts



Heating and cooling currently account for half of the EU energy consumption, a large part of this energy wasted since 65% of the installed stock of heaters in Europe is old and inefficient. Moreover, within the residential sector (i.e. European households), space heating and hot water supply represent 85% of the energy consumption, accounting for a significant share of the average individual's carbon dioxide emissions and 30% of the EU overall carbon dioxide emissions.

According to recent data from EHI (European Heating Industry), the EU space heating stock accounts roughly 126 million installed appliances, 60% of which are over 15 years of and likely performing as a C or a lower energy class, demonstrating the low energy efficiency performance of most of the installed heating stock. Furthermore, boilers average replacement rate in the EU is low, currently only 4% per year, which aggravates the problem. This low replacement rate could be explained by the lack of awareness among homeowners and building managers as well as the complexity of the diffusion of innovation's process.

HARP Project – The heating professionals' role in the consumer's decision process to replace old and inefficient heating appliances

Professionals play a key role in accelerating the modernisation of EU's heating stock. Considering their relevance in the consumer's decision process to replace heating appliances, the HARP (Heating Appliances Retrofit Planning) project has developed an online application to support the comparison of heating systems through the energy label and plans to reach and train 1,000 professionals across France, Germany, Italy, Portugal and Spain.

Laura Pérez del Olmo. Creara Energy Experts



Buildings (and people living in them) are the first consumers of heating and cooling. The building sector is responsible for 40% of the EU's energy consumption and 80% of that energy is used for space heating and domestic hot water production, being 84% of it generated from fossil fuels. The heating market is a very stable one. Installed boilers can last for over 15 years, which justifies their very low replacement rate, at about 4% per year. Additionally, consumers lack of awareness, information and advice on the technical possibilities and actual energy costs, resulting in 60% of the European heating stock being composed of old and inefficient boilers (performing as a C or lower energy class).

In this context, professionals play a key role in accelerating the modernisation of EU's heating stock and significantly contribute to the compliance of the energy efficiency targets set for the EU. Except for Germany where an energy label already exists, European consumers are not informed about the energy efficiency of their installed heating systems. In fact, according to the European Commission¹, consumer choice is limited by a lack of information on actual energy consumption and costs, lack of awareness of the benefits of cost-efficient technologies, lack advice on the technical possibilities, split incentives (for instance in multi-apartment buildings) and lack of financial means to invest in the most efficient technology.

¹ Ecofys. (2016). "EU pathways to a decarbonised building sector" How replacing inefficient heating systems can help reach the EU climate ambitions. https://www.bdhkoeln.de/fileadmin/user-upload/Studien/Ecofys_study_final_201604013.pdf

¹ European Commission. (2016). An EU Strategy on Heating and Cooling. https://ec.europa.eu/bransparency/regdoc/rep/1/2016/EN/1-2016-51-EN-F1-1.PDF





LEAFLET



www.heating-retrofit.eu

BE A PART OF THE **REVOLUTIONARY**HEATING MARKET RENOVATION!

BOOSTING CONSUMERS APPETITE FOR MORE ENERGY EFFICIENCY HEATING APPLIANCES

THE HEATING MARKET IS VERY STABLE

- ✓ 60% of the heating stock consists of inefficient boilers (class C or lower)
- Installed boilers can last over 15 years, and their replacement rate is very low (4% per year)
- ✓ The lack of awareness, information and advice on the technical possibilities and the actual energy costs can explain this low replacement rate





PROFESSIONALS, THE PREFERRED INFORMATION CHANNEL

- ✓ Except for Germany, consumers are not informed about the energy efficiency of their old heating system
- In the acquisition of a new heating system, consumers rely mostly on professionals when a maintenance relation is in place, and sales agents when going to replacements or new acquisitions.

GET INVOLVED!

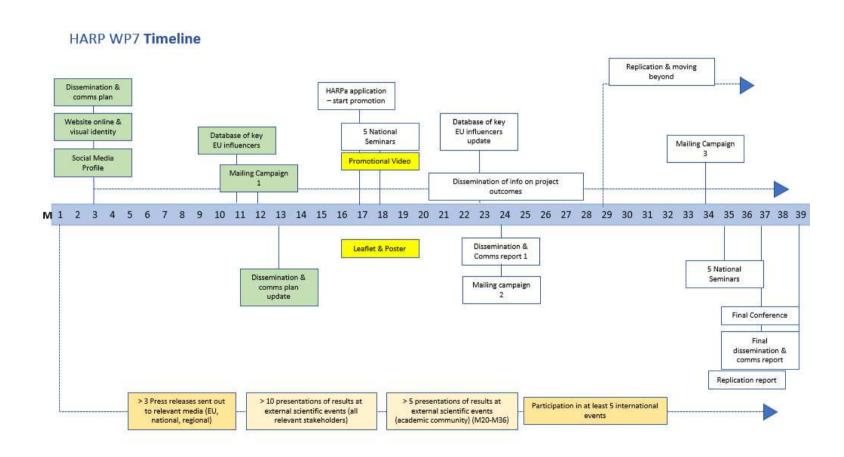
WHAT'S IN IT FOR PROFESSIONALS?

- ✓ STRENGTH YOUR BUSINESS: by enhancing professionals' skills and presence in the market
- ✓ STANDARDIZE THE ASSESSMENT OF HEATING APPLIANCES: in order to facilitate technical designs, and for performance assessment
- ✓ TAKE ADVANTAGE OF THE ENERGY LABEL, using a successful tool in the consumer decision process to
 estimate and highlight the energy savings the consumer can benefit when replacing the old heating system
- STAND OUT FROM YOUR COMPETITION: you will get additional know-how in lifecycle product performance and long-term cost savings potential, improving your argumentation in the evaluation of replacement opportunities
- ✓ WORTH OF MOUTH: in some countries such as France and Germany, word of mouth is the most trusted communication channel; this could be a differential factor among the competence.
- IMPROVE YOUR KNOWLEDGE. Join HARP's training programme on how to interact with the consumer and promote
 efficient heating solutions in the consumer advisory process
- ✓ BE PART OF THE EUROPEAN HEATING COMMUNITY: Be recognized as one of the key professionals in energy efficient heating. Consumers will have the opportunity to access and directly contact with the HARP trained professionals as the last step on the online support decision tool.
- ✓ MAKE A CHANGE: contribute with your work to climate change mitigation. Each one of us can make a





WP7 – Dissemination and Communication – ECOS N.B. WP4 Engagement activities







WP7 – Dissemination and Communication – ECOS

Leaflet

- Similar visuals as the video
- Will explain how the tool (HARP application) will support the replacement process
- Translated to all partners languages

Poster

- A simplified version of the leaflet
- Will be printable by each partners
- Translated to all partners languages





Ordine del Giorno

- 1. Stato di avanzamento progetto HARP
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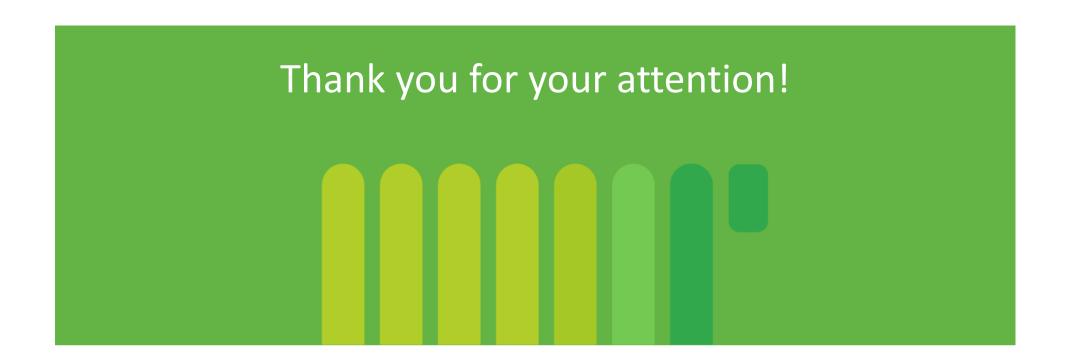
Comunicazione del progetto HARP e delle sue attività all'interno di seminari/incontri/convegni riguardanti l'efficienza energetica degli edifici



Attività di comunicazione/informazione online, campagne social e collaborazione con media (digitali/cartacei, riviste di settore/stampa generalista, ecc..)

Panoramica sull'uso dell'app HARP-A nell'ambito di corsi/seminari/convegni riguardanti la ristrutturazione energetica degli edifici esistenti

Traning sessions per professionisti sull'uso dell'app HARP-A



Assotermica – ANIMA Confindustria Via A. Scarsellini 11/13 – Milano assotermica@anima.it



