



HEAT PUMPS SKILLS FOR NZEB CONSTRUCTION (HP4ALL)

Deliverable D4.5 Awareness Campaign Report

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Executive summary

Due to the varying targeted stakeholders, market maturity and languages (see breakdown below), it was decided that 3 separate awareness campaigns were to be conducted as part of the HP4ALL project by each pilot leader, alongside an online dissemination and communication campaign.

Table 1 Pilot region overview

Region	Andalusia, Spain	Ireland	Upper Austria
Region Language	Spanish	English	German
Regional Market Maturity	The cooling market is well established, however the heating market maturity via heat pumps for residential is relatively low.	The heat pump market for residential is relatively new, but has very ambitious targets for 2030 set out by the Irish Government.	The heat pump market for small, residential applications is already quite well developed (especially in new buildings).
Main Targetted Stakeholders	Public sector and Public Buildings	Local Authorities, Social Housing tenants, Homeowners	Mid-/large-scale HP applications (commercial and industrial) in

The awareness campaigns in each pilot region and the heat pump technology, procurement and specification training rollout have provided a lot of crossover in so much as the awareness raised for the training, capacity building events and workshops also created awareness of heat pumps and the HP4ALL project. The Awareness campaigns were also aided by the HP4ALL knowledge hub from the various heat pump case studies and information. The HP4ALL HP benchmarking tool also helped to raise awareness of heat pump running costs and energy requirements.

From conversations with end users in each pilot region, the feedback from end users is positive. Each event (online or in-person) has been well received and future events are also anticipated.

Acronyms and abbreviations

Abbreviation	Description
ADA	Andalusian Energy Agency
AT	Austria
BER	Building Energy Rating
CEO	Chief Operating Officer
CTA	Corporacion Tecnológica de Andalucia
ES	Spain
ESV	OÖ Energiesparverband
EU	European Union
HP	Heat Pump
IE	Ireland
IERC	International Research Centre
IT	Italy
LA	Local Authorities
Non-RES	Non-Residential
NZEB	Near Zero Energy Building
RDI	Research, Development, Innovation
res	Residential
RINA	Registro Italiano Navale
SEAI	Sustainable Energy Authority Of Ireland
SME	Small, Medium Enterprise
TUS	Technological University of the Shannon
VET	Vocational, Education and Training

1. Introduction

This report will outline the awareness raising and pilot activities from each regional awareness campaigns (ES, IE, AT). Each pilot region targeted different stakeholders based on an initial review at the beginning of the project which identified that each pilot had varying end-user knowledge, market maturity and also different languages. To combat these differences, each pilot region was required to tailor an end-user awareness campaign in order to reach their specific stakeholders.

2. Pilot Region Awareness Campaigns

Spain Pilot

The Spanish pilot aimed to tap into the potential for the public sector as an outstanding driving demand force, as a public promoter and as a key market influencer through legislative, administrative, and financial initiatives for heat pump adoption. While also increasing HP manufacturers competitiveness through a robust public sector influenced (launching customer) demand.

The main target sectors for the Spanish pilot are HP manufacturers, installers & public sector with the scope of targeting public buildings (residential and non-residential) at local, regional & national level.

The main awareness campaign activities conducted in the Spanish Pilot were as follows:

- 2 webinars about project results and presentation of the HP4ALL package, one targeting policy makers and another one targeting the private sector.
- 1 regional event targeting all the stakeholders to present project aim, scope and expected results and create awareness about the resources provided in the hub. This event took place on the 10th of November 2021 in Granada within the frame of the 1 Congress on Innovation and Sustainability in Social Housing ISVIS 2021 organised by the Andalusian Housing and Rehabilitation Agency.
- 1 regional event focused on the proposed competence framework targeting policy makers, professional associations, VET schools' representatives to discuss the results from the public policies assessment and present the recommendations (incl. a World café approach for triggering discussion between policy makers and education sector).

1 regional event for private sector capacity building to provide feedback on the knowledge hub content and awareness campaign materials where universities and research centres can present the last trends.

In addition to the abovementioned 5 events (2 oriented mainly to the public demand side and 3 to the value chain as planned), 3 yearly bilateral meetings -9 in total- (last quarter of 2020, 2021 and 2022) have been held with each one of the following professional associations to get feedback on the knowledge hub, benchmarking tool and awareness campaign materials:

- AFAR (*Andalusian Heat Pump Manufacturers Association*)

- ATEAN (*Andalusian Heat pump Designers and Technicians Association*)
- FADIA (*Andalusian Heat Pump Installers Association*)

Communication strategy and channels

The communication and dissemination activities have been conducted mainly through:

- HP4ALL's official website and social medias.
- CTA's official website and social medias.
- Targeted mailings: CTA's network and newsletter (reaching more than 2000 registrants).
- Press work: related articles published by CTA on social medias and press release prepared by HP4ALL communication leader.
- Dedicated events (see above)



Ireland Pilot

The Irish pilot primarily focused on local authorities and their respective heat pump installations, with a secondary focus on large scale heat pump installations and private domestic heat pump installations. Local Authorities are the primary focus as Local authorities have an important role in the deployment and roll out of homes in Ireland. There is huge demand from the market for affordable housing and social housing, to which local authorities are responsible for, through their planning departments and their housing departments. Local Authorities can influence the contractors (designers and installers) that tender for the housing works through minimum requirements criteria and energy usage criteria.

The 'Housing for All - a New Housing Plan for Ireland', is the Irish government's housing plan to 2030. It is a multi-annual, multi-billion-euro plan which will improve Ireland's housing system and deliver affordable, high standard and energy efficient housing for Irish citizens. A significant part of this plan is for the provision of 90,000 social homes by 2030, including retrofitting of existing social housing and an average 9,500 new builds per year. Local authorities are responsible for the provision of social housing in Ireland and currently manage over 100,000 social homes. As all new builds and retrofits in Ireland are required to meet regulations on energy requirements, heat pumps are widely used to reach these energy requirements. Due to this, the Irish pilot focused on working with Local Authorities, their contractors (heat pump system designers, installers, maintenance staff) and their tenants.

The first step of engagement with LA's always started with training of internal housing department staff, before contacting their contractors or tenants. This provided a good understanding of heat pump design, installation, maintenance, and homeowner hand-over. The training also engaged in procurement and tendering, with a particular focus on skills, certification, and qualifications to bear in mind throughout the public tendering process. TUS had created a 4-hour training programme that began with a presentation by TUS followed by a physical demonstration by a heat pump supplier that was contacted through the Heat Pump Association of Ireland. The HP4ALL has trained 120 LA staff to date. The outdoor physical demonstration unit proved very successful, as members from other departments were able to ask questions and engage with the heat pump supplier and TUS representatives.



Figure 1 Local Authority Training Photos



The second step of engagement either looked for further internal staff events such as Climate Action days. Climate Action days consisted of various organisations in the energy, climate, or environmental sectors to provide the most up to date information to general staff of the local authorities, it was at these events that dissemination materials such as the homeowner leaflet were distributed. 2 Climate Action days were conducted.



Figure 2 Climate Action Day & Estate Days Photos

A similar approach to the contractor short learning webinar series was decided upon for the homeowner training. This training would be less technical and more digestible for homeowners.

The series included an NZEB presentation from Laois Offaly ETB, a retrofit presentation from another One Stop Shop Envirobead, and presentations from heat pump suppliers on their range of products and how homeowners control and use their heat pump systems. This webinar series gained 119 registrations for the series and an average attendance of 40 at each webinar. The breakdown of registrations is shown below:

Table 2 Homeowner Webinar Series Attendees Breakdown

Educator / Student	Homeowner	Contractor	Designer	Local Authority Staff
17	45	15	18	24

As part of the Comfort & Energy in Construction webinars series, 3 webinars in particular were also orientated towards homeowners along with installers, these being, retrofit management, customer handover and SEAI inspection checks. These webinars provided a clear-cut explanation of the works required to provide a retrofit, the handover process with the installer and the SEAI grant funding inspection checks and common issues seen.

All training and materials are openly available as links on the Electric Ireland Superhomes webpage and are available on the TUS Research, Development, and Innovation YouTube page: (www.youtube.com/channel/UCh4kMrVj3PC73XGn1Ds3jTw) The homeowner webinar series has received over 1,000 views to date.

Further to the above mentioned, future webinars and events are planned to take place at the end and after the lifetime of the project. These include but are not limited to the 'Multi-homes and Multi-block buildings retrofit information series' which is set to take place in February 2023 and March 2023 . This series is being

undertaken by TUS and Electric Ireland Superhomes to provide information to multiple building owners like apartment blocks or estates. The event will provide information on the process of retrofitting multiple buildings / apartments and will dive into the financial, technical and economic aspects of multiple retrofits. There are 4 main cohorts that are being targeted with these events,

1. Local Authorities: Local Authorities across Ireland are planning retrofits to multiple units they currently possess, where up to 95% of the retrofit will be funded by the Irish Government.
2. Approved Housing Bodies: Similar to the local authorities only the funding stream is through the Retrofit One Stop Shop scheme where up to 50% will be grant funded.
3. Private Landlords and Building Owners: These may own multiple buildings or singular rented buildings. These again will be funded under the Retrofit One Stop Shop scheme.
4. Corporate Landlords: These building owners are not eligible for funding under the Retrofit One Stop Shop scheme but instead must look for other funding offered through SEAI's other grant schemes such as Support Scheme for Renewable Heat (SSRH) or EXCEED certified grant.

Communication strategy and channels

As a third level education organisation, TUS has a very good connections with industry, whether it be from past students to former research and development projects with industry leaders, TUS has a large and passionate network of professionals in the built environment / construction sector. TUS is a trusted source of training in many fields including sustainable energy and the energy transition, with multiple courses and special purpose awards ranging from level 6 to PhD.

The main communication channels used in the context of the pilot activities were:

Table 3 Communication Channels in Irish Pilot

Which channel	How were they used
TUS website, RDI department, RDI LinkedIn	Dissemination of the project and knowledge hub
HP4ALL website	Knowledge Hub (updated throughout the project), promotion of events
Targeted mailing to Industry and Local Authorities	Reaching specific target groups with relevant information and training opportunities
Word of mouth	Local Authorities would recommend TUS to other Local Authorities to receive the heat pump training we created.
Tradeshows, Climate Action Days and Estate events	Dissemination of the Homeowner HP leaflet, advice service, information on subsidies, presentations on heating and cooling with HPs, subsidies, etc.

Upper Austria Pilot

The heat pump market for small, residential applications is already quite well developed (especially in new buildings). Hence, the Upper Austrian pilot primarily, but not exclusively, focused on developing the market for mid-/large-scale HP applications (commercial and industrial) in the region. This market is still at a relatively early stage in Upper Austria and faced with the related challenges. These include especially low levels of awareness of promising application possibilities among planners and users, and the lack of required skills by planners and installers. The overall scope of the pilot was to provide options for phasing out fossil-fuels in companies through the up-take of other renewable energies, such as HPs. Since Upper Austria has a long tradition in biomass technologies, project activities targeted both solutions.

From the initial review of the pilot region, there was very limited information available to these solutions. As a result of these shortcomings, the Upper Austrian awareness campaign focused on producing relevant case studies and tools while also training professionals along the heat pump value chain.

Additionally, some activities focused at supporting HP innovations and the upskilling and demand for skills in the residential sector. This was based on ESV's experience and portfolio of information and awareness raising activities.

The Upper Austrian partner ESV conducted the following awareness raising activities and events:

Table 4 Awareness events held in Upper Austria

Description of event	Attendees	Date
Workshop for companies on process heat and cold including presentations and interactive exchange	Companies that already use or are potential users of HPs for process heat and cold; 15 participants	23 March 2021
Innovation forum on renewable heat	All stakeholders along the HP value chain; 178 participants	1 June 2022



<p>Information and training event on larger-scale HPs for professionals: a session organised by ESV in the context of a conference for the DACH region (Germany/Austria/Switzerland) by Wärmepumpe Austria</p>	<p>manufacturers, planners, public bodies; 150 participants</p>	<p>16 September 2021</p>
<p>Participation in tradeshow: dissemination of material and information, technical presentations</p>	<p>Mainly for residential end-users and building owners; very high number of visitors, energy advice sessions carried out, and information brochures distributed:</p> <ul style="list-style-type: none">• Overall, 10,700 private building owners received information on sustainable heating systems at the ESV stands.• over 300 people attended the 8 technical presentations on heating and cooling with HPs, organised by ESV at the tradeshow from 6-10 April 2022.	<p>3 tradeshow: 5-7 Nov. 2021, 6-10 April 2022, 4-6 Nov. 2022</p>



Figure 3 Awareness raising activities in Upper Austria (picture ©OOe Energiesparverband)

Below is a list of resources that were developed, made available and disseminated to support the objectives of the pilot activities and the awareness campaign.

Table 5 Materials and Tools used in Upper Austria

What	For whom
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<p><u>Knowledge Hub</u>: compilation of links to relevant existing information materials and tools, on HP4ALL and ESV website, including:</p> <ul style="list-style-type: none"> – AdieuÖl campaign and related resources (Upper Austrian campaign on eliminating oil heating and switching to renewable heat) – Information guides on HPs, energy labelling of heating systems, NZEB new builds and refurbishment, building performance certificate, etc. – Information on subsidies available in Upper Austria – Best practice examples in companies, municipalities, and residential buildings 	<p>Primarily targeted towards building-owners and end-users in the residential and non-residential sectors, planners, and installers</p>
<p><u>Renewable process heat guide</u>: guide with comprehensive HP information, case studies on renewable process heat, and guidance on energy efficiency; 3,000 copies printed and electronic version available on the ESV website and HP4ALL Knowledge Hub</p>	<p>Building owners and potential buyers and users of mid-/large-scale HP systems, mostly in companies and industry, planners, installers</p>
<p><u>Case studies</u>: 14 best practice case studies (partly included in the HP guide) were developed and published, including 8 case studies on HPs in residential buildings</p>	<p>Primarily targeted towards end-users in the residential and non-residential sectors, planners, and installers</p>
<p><u>Benchmarking tool</u>: tool to calculate the "in-situ annual performance factor" for domestic units. Results as a scale green to red.</p>	<p>end-users of residential HPs</p>
<p><u>Residential HP Guide</u>: in the context of the pilot activities, ESV reviewed and updated its information brochure on HPs in residential buildings; over 6,000 copies printed and distributed, and electronic version available on the ESV website and HP4ALL Knowledge Hub</p>	<p>end-users of residential HPs</p>

Communication strategy and channels

As a regional energy agency, the ESV has a very good understanding of the energy and business landscape in Upper Austria and is well placed to work across the value chain (from manufacturers to end-users). It has an extensive database of companies and their CEOs and facility managers. In addition to its wide portfolio of services to private households and actors in the residential sector, the ESV also has existing services for companies. These services were strategically used to support the objectives of the HP4ALL pilot.

In addition to being a trusted source of information on sustainable energy and the energy transition, the ESV manages funding programmes for the regional government. It has extensive experience in market transformation and with information campaigns, training, and in offering energy advice and facilitation services.

The main communication channels used in the context of the pilot activities were:

Table 6 Communication channels used in Upper Austria

<i>Which channel</i>	<i>How were they used</i>
ESV's own website	Dissemination of the guide, information materials and benchmarking tool, promotion of events
HP4ALL website	Knowledge Hub (updated throughout the project), promotion of events
ESV newsletter	Dissemination of the guide, promotion of events, of ESV advice services and of available subsidies
Targeted mailing to ESV's extensive database	Reaching specific target groups with relevant information
ESV's existing services for companies: <ul style="list-style-type: none"> • energy advice services for companies • competence centre for funding programmes and information hub on ESV's website • Energy Academy 	Reaching building owners and potential buyers and users of mid-/large-scale HP systems, mostly in companies and industry, promotion and carrying out of trainings, dissemination of the guide, information materials and information on subsidies
Communication through the business network Cleantech-Cluster (250+ energy and environment companies): website, newsletter	Reaching companies in the energy and environment sector, promotion of trainings, dissemination of the guide, information materials and information on subsidies
Tradeshows	Dissemination of the Residential HP Guide, advice service, information on subsidies, presentations on heating and cooling with HPs, subsidies, etc.

The summary table below outlines the details of the different activities performed, as well as links thereto if the case:

Target group / stakeholder	Why they are important	How they were engaged
Regional / local public housing promoters owning /renting social housing residential buildings	<p>The <i>Andalusian Housing and Rehabilitation Agency</i> is the biggest public promoter in Spain (more than 86.000 households) and a key prescriber; its initiatives trigger off very important effects into the supply chain.</p> <p>Likewise, public province and local housing agencies and firms in the 8 provinces of Andalusia play a key role at such level</p>	<p>The HP4ALL package was presented, promoted and discussed in a dedicated session in Granada at the ISVIS 2021 Congress on Social housing innovation and sustainability in November 2021 organised by the <i>Andalusian Housing and Rehabilitation Agency</i>.</p>
Regional/local public entities owning / renting non-residential buildings	<p>Energy efficiency measures adopted by these bodies have got a strong replication and prescription potential</p>	<p>The HP4ALL package was presented, promoted, and discussed in a dedicated high-level policy and institutional event held by CTA on Opportunities and needs in sustainable building stock energy supply - the role of HPs in Seville in May 2022</p>
Policy makers (State & Regional Ministries and Local Departments)	<p>Policy makers set the financial, administrative, and legal context, provide relevant information, and have decision making power</p>	
Professional Associations and key representative entities thereof: <ul style="list-style-type: none"> - Promoters - Constructors - Researchers - Manufacturers - Installers/technicians 	<p>Value chain segment prescribing and leveraging aggregated effect</p>	<p>The HP4ALL package was presented, promoted and discussed in three dedicated professional sector led events and sessions:</p> <ul style="list-style-type: none"> -Joint CTA/AFAR (Andalusian Heat Pump manufacturers Association) event in Lucena (Cordoba) in May 2022 -Rehabilitating Congress in Seville in October 2022 -II Spanish Heat Pump Forum in Cordoba in October 2022, specifically focused on education, training and skills opportunities and needs.

In addition to the abovementioned 5 events (2 oriented mainly to the public demand side and 3 to the value chain as planned), 3 yearly bilateral meetings -9 in total- (last quarter of 2020, 2021 and 2022) have been held with each one of the following professional associations to get feedback on the knowledge hub, benchmarking tool and awareness campaign materials:

- AFAR (*Andalusian Heat Pump Manufacturers Association*)
- ATEAN (*Andalusian Heat pump Designers and Technicians Association*)
- FADIA (*Andalusian Heat Pump Installers Association*)

HP4ALL Project Dissemination & Communication

Dissemination and Communication was conducted and monitored by Sustainable Innovations (SIE). This included monitoring the project website views, video views, newsletter and brochure views and number of publications and events that HP4ALL are attributed to. The full list of grant agreement targets and the monitored to date figures are shown below. These Key Performance indicators for the project will not be included in the final energy impact evaluation of the project, only training and capacity building will be included in the energy impact evaluation.

Table 7 HP4ALL Dissemination & Communication

TOOL	GA TARGET	Monitored to Date
Brochure /Factsheet/Poster	800 (5)	60 downloads average per month = 1,444 (3) Average distributed partners?
Project website	Sessions 1,200 per year	Sessions 6,095 in total 3,047 per year



Social media	<p>Twitter</p> <p>Followers: 100-200</p> <p>Engagement Rate 0,2 -0,9</p> <p>LinkedIn</p> <p>Followers: 100-200</p> <p>Engagement Rate 0,2 -0,9</p>	<p>Twitter</p> <p>Followers 156</p> <p>Engagement Rate 9.5%</p> <p>LinkedIn</p> <p>Followers 216</p> <p>Engagement Rate 5.92%</p>
Videos	Visits 100-200	Visits 504 + 616 EHPA AF
Newsletters	<p>1,500 views (3)</p> <p>Subscribers: 500</p> <p>Opens: 15-17%</p>	<p>722 on LinkedIn (4) + 812 Twitter (4) + 274 Mailchimp (4) = 1,808 Views</p> <p>Subscribers 271</p> <p>Opens 16,5%</p>
Press releases	<p>Views 3,000 (3)</p> <p>25 media stakeholders</p> <p>30 impacts > 3,000 visits</p>	<p>(4) 551 on LinkedIn + 1,978 on Twitter + 1,444 website = 3,973 views on internal channels</p> <p>200 media sources reached each (X4=800)</p> <p>40 external sites posted about HP4ALL. At least 100 visits per site = 40,000 views</p>



Publications	3	2 papers (Sustainable Places, 2 articles (El Economista, Ecoconstrucción)
Workshop / webinars	20 in total 4 dissemination 6 Ireland 5 Austria 5 Spain (41) 600 attendees (50 average each = 9,500)	1 st Training heat pump installers in Upper Austria 2 nd Training professionals in Upper Austria 3 rd training renewable energies in Upper Austria Innovation forum in Upper Austria Training energy advisors in Upper Austria Sustainable Energy skills in the Construction sector Supporting the retrofit journey with innovative technologies Levering digitalisation and construction skills Heat pump skills and competencies online workshop Training specifiers Ireland (12 sessions) Offaly County Council Climate Action Day Comfort & energy in Construction webinar series Ireland (14 sessions) Ambition requires action: mutual recognition agreements Training programmes offered by Heat pumps producers Climate Awareness Day Galway



		<p>Suministro energético eficiente en la edificación. Heat pumps are ready to surf the renovation wave</p>
<p>Conference / Trade fairs</p>	<p>18 (23) 26,800 attendees (100 average each = 2,300)</p>	<p>Sustainable Places 2020 Sustainable Places 2021 National Energy Research & Policy Conference Meeting with Irish Minister for the Environment, Climate, and Communications BUILD UP Skills European exchange meeting 2021 BUILD UP Skills European exchange meeting 2022 Sustainability in changing climate workshop Ireland Upskilling opportunities by the Irish Regional Skills Midwest in collaboration with Tipperary Chamber. Offaly County Council Climate Action Day Energy in Agriculture show, Gurteen Chillventa 2022 European Green Week European Heat Pump Summit 2021</p>



	<p>EUSEW 2022</p> <p>ISVIS 2021</p> <p>Informative event held by the Irish Regional Skills Midwest in collaboration with Tipperary Chamber.</p> <p>Heat and cold technologies in industrial applications Spain</p> <p>Mostra Convegno expocomfort</p> <p>Workshop agreement TRAIN4SUSTAIN competence quality standard</p> <p>Innovative large scale Heat Pump projects: the 3rd Innovation Fund Large-Scale Call</p> <p>Climate Awareness Day</p> <p>Rehabilitating</p>
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