

The background of the slide is a photograph of industrial pipes, likely in a factory or power plant, with a blue color cast. Overlaid on this are several thick, curved ribbons in yellow, orange, and red. The text 'HP4ALL' is prominently displayed in the center-right. The '4' is a stylized white logo consisting of two interlocking curved shapes.

HP4ALL

CA EED
Stockholm
12th October 2022

Creating demand for skills and
fostering expertise in the heat pump
industry – H2020 HP4ALL project
experience

Creating demand for skills and fostering expertise in the heat pump industry – H2020 HP4ALL project experience

- HP4ALL – 30 months, September 2020 to February 2023
- 7 partners from IRL, ES, AUT, BEL, IT
- Working with Supply AND Demand sides
- Develop, Enhance and Promote HP skills
- Critical Point: need to ensure efficiency gains afforded by heat pumps are realised
- Ambitious targets: First Climate Action Plans, now RePowerEU
- Additional workers needed with HP skills

HP4ALL Project Overview:

ABOUT THE PROJECT

HP4ALL will enhance, develop and promote the skills required for high quality, optimised Heat Pump installations within residential/non-residential buildings

IMPACTS

Primary energy savings
2 GWh/year

Renewables production
1.95 GWh/year

Reduction of
628 tCO₂ /year

400
People trained

1 Heat pump benchmarking tool

1 Heat pump knowledge hub

HP4ALL Project Overview:

OBJECTIVES



Produce a Heat Pumps competency & excellence skills framework



Increase the number of skilled workers



Enable end users/clients to demand high quality solutions



Replicate the project at national and EU-level

HP4ALL Project Overview:



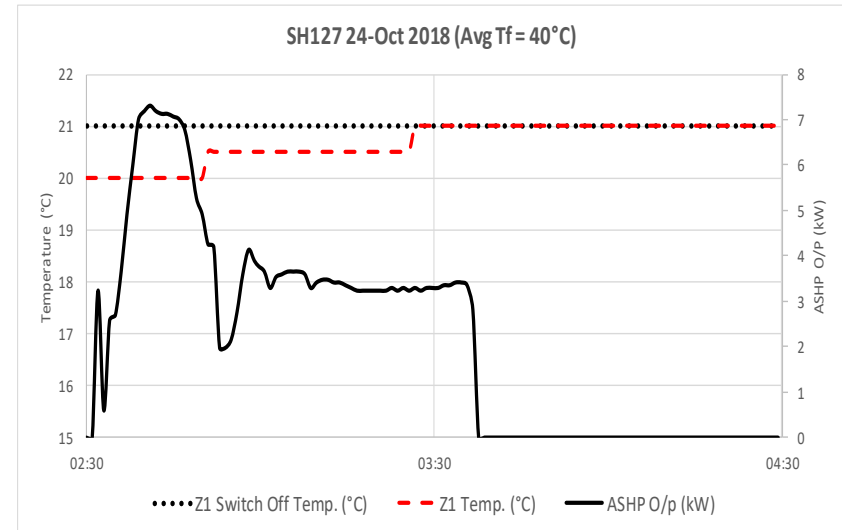
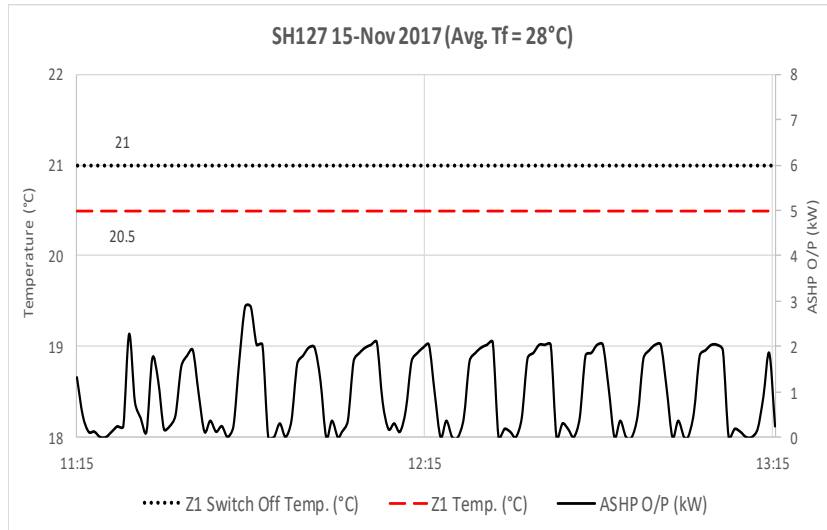
PARTNERS



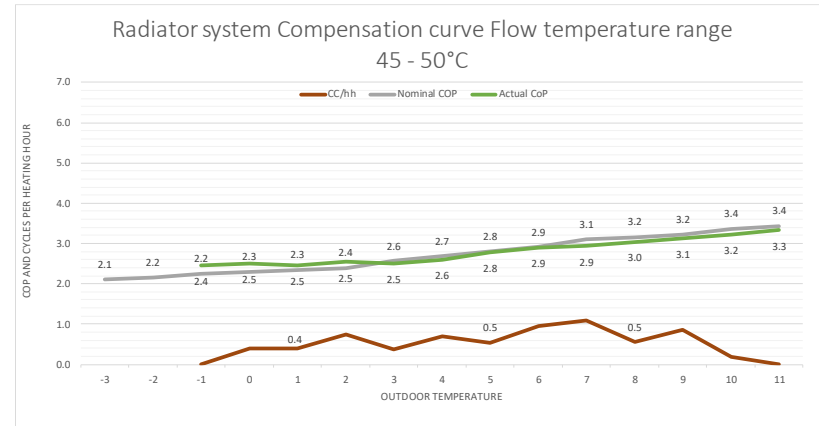
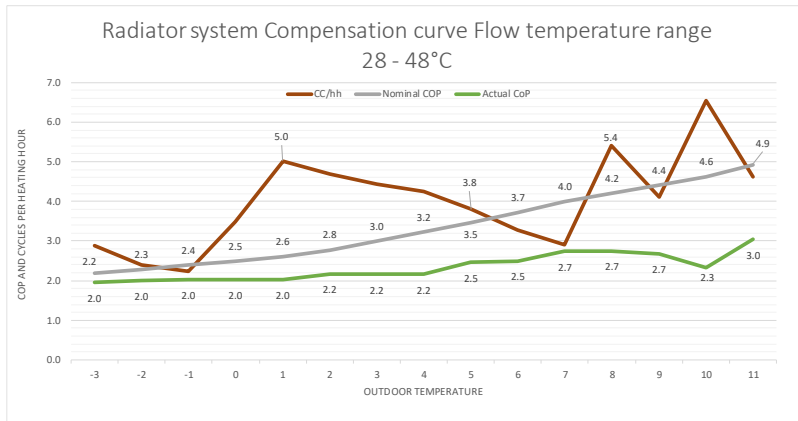
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 891775

Technology differentiators – specific skills are needed

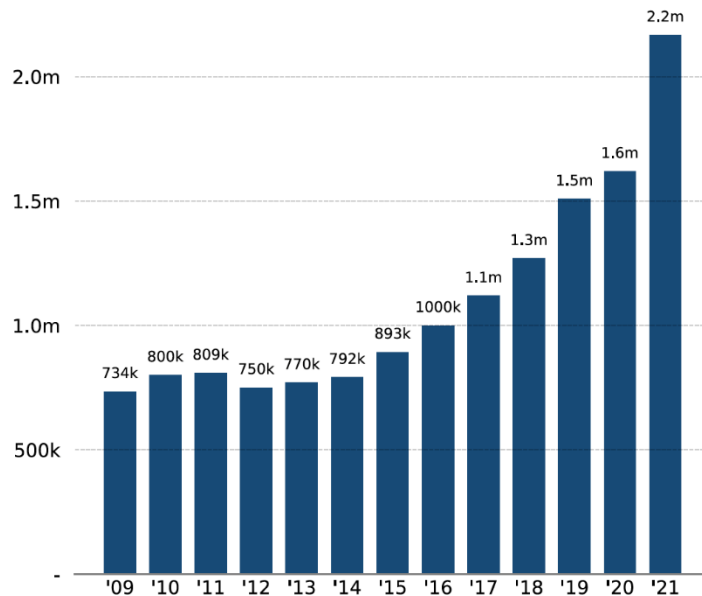
- HP heating systems operate at lower temperature than fossil fuel boiler systems
- System design, installation and commissioning requires greater attention to detail



Predicted vs Actual COP – Implications for National Targets

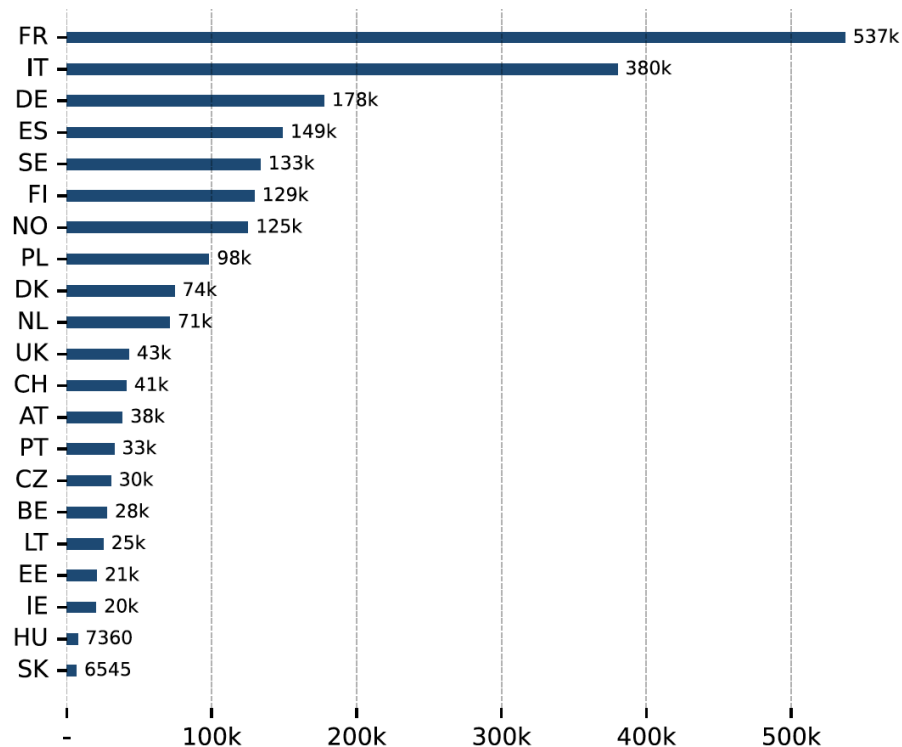


Heat Pump markets are forging ahead



Sales from 21 EU countries, +34% in 2021 (EHPA)

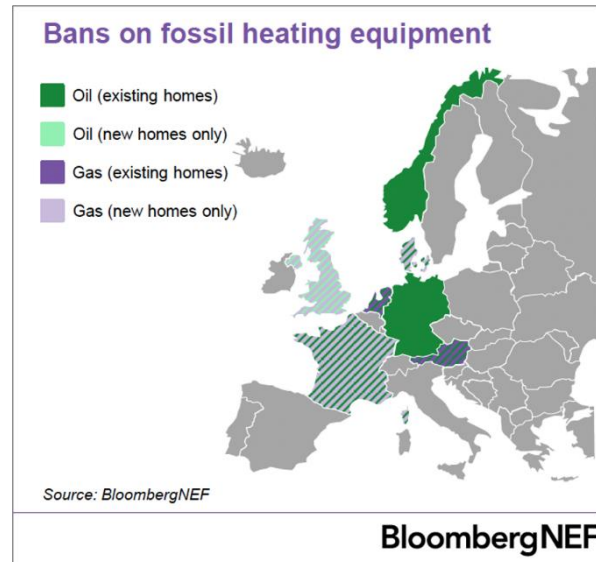
Sales by country



Courtesy of EHPA

National Policy – moving away from fossil fuels

- Austria: 1.1.2023 no gas in new buildings
- Flanders: 1.1.2025 no gas in new buildings
- France: 1.7.2022 bans oil boilers
- Germany: 1.1.2024 - share of 65%RE
- Netherlands: 1.1.2026 – min. hybrid heat pump
- Ireland: 2019 – new Part L effectively precludes boilers
- European Union - tbc: 2029 via Ecodesign



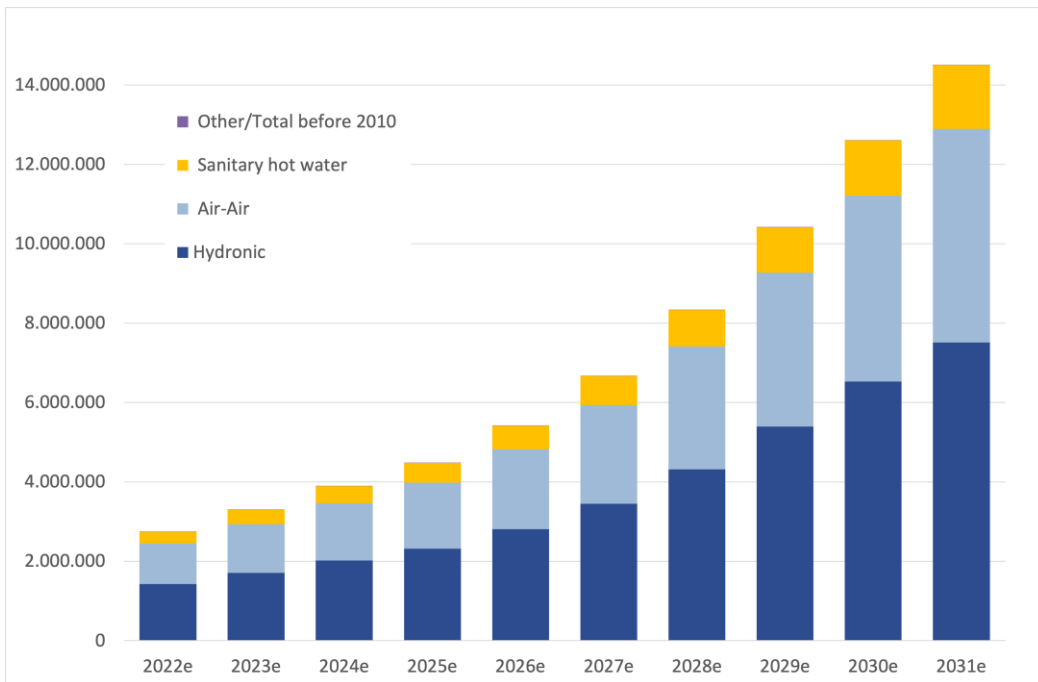
Courtesy of EHPA

RePowerEU
and cut our
dependence on
Russian gas



#EUGreenDeal

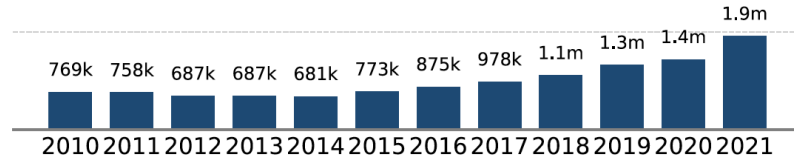
Photovoltaic
Wind
Heat pumps
Storage



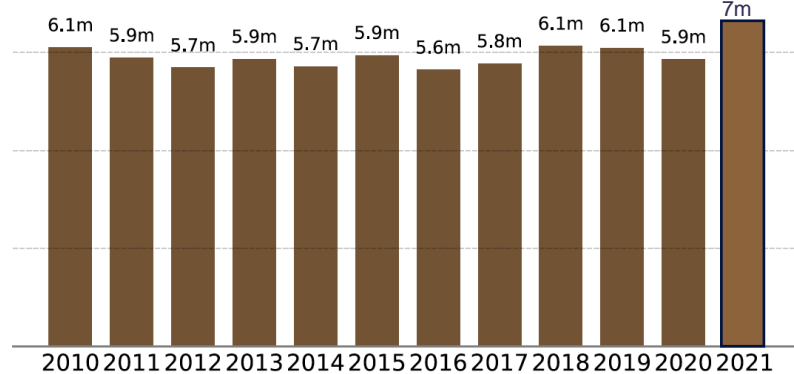
Estimate sales based on REPowerEU

- EU aims at doubling current deployment rate of individual HPs => cumulative 10 million (hydronic) HPs over 5 years
- EHPA extrapolation to all technologies

Heating HP



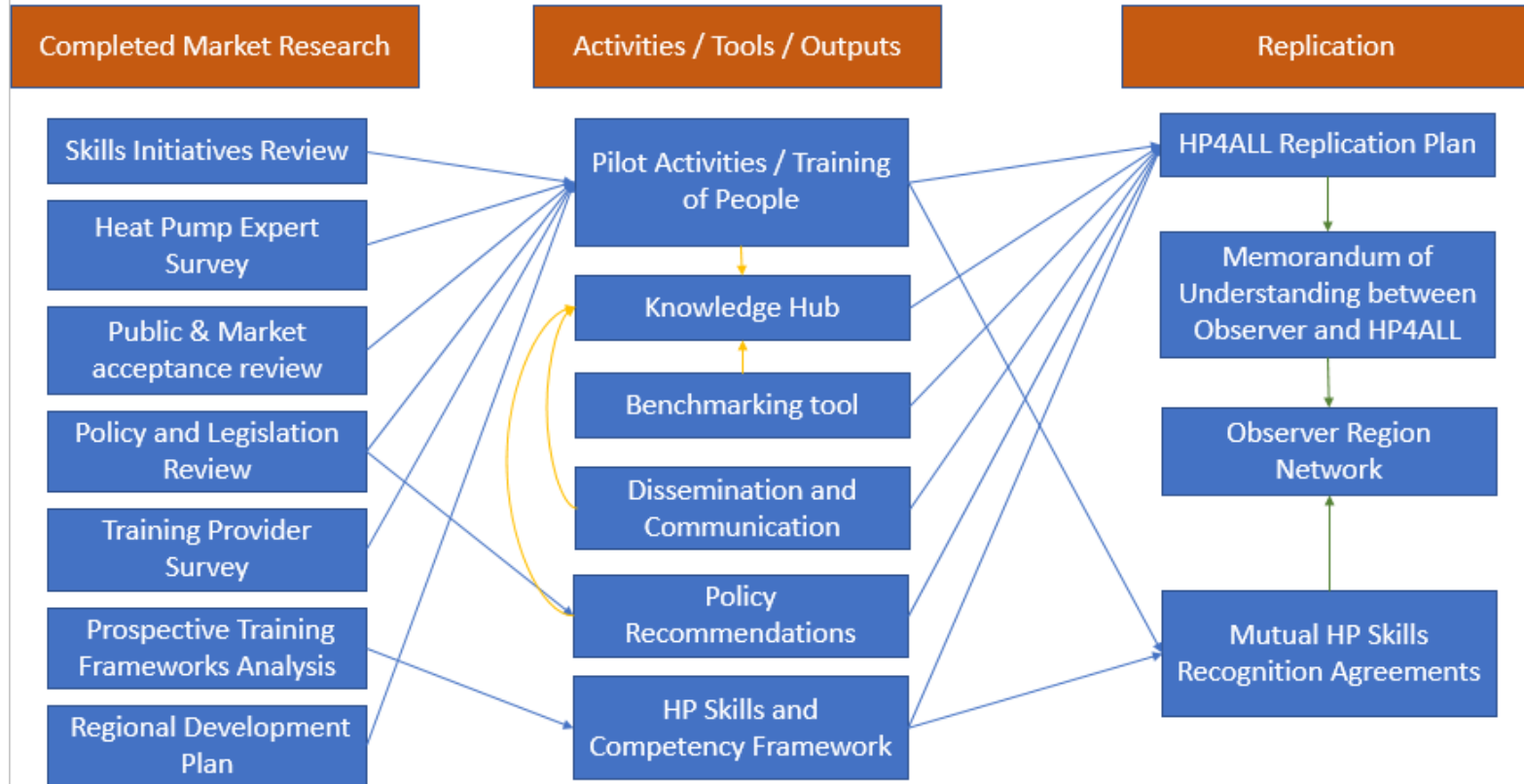
Boilers



- Total units installed 2021 = 8.9m
- Scope to upskill 7m boiler installers

- Grants are driving the Retrofit demand – certified training mandatory
- Building regulation driving new build HP sales – certified training is not mandatory
- Major push for apprenticeships – new National Apprenticeship Office (NAO)
- Estimated number of Plumbers/HVAC engineers Nov 2021 – 11,300
- Up to 2030: 400,000 retrofits & 7x 25,000 new builds = 575,000 HPs. At 80 installs per year per person, we need approx. 1000 HP installers – so with upskilling we will be ok
- Drive to encourage students to consider apprenticeships – CAO, increase female participation, attracting instructors

HP4ALL Activities:



1. **Market Research:** to provide an understanding of the whole value chain of the Heat pump sector (Specifier -> Installer -> End-User)
2. **Awareness:** A variety of tested methods, tools and approaches to raise awareness of heat pumps, and increasing the demand for heat pump skills.
3. **Training:** Identify & signpost official training offerings as well as developing a variety of other training techniques, delivery methods and frameworks to increase heat pump skills & knowlegde.
4. **Policy:** A variety of policy recommendations that aim to help policy makers increase the demand for heat pump skills.

Target Audience:

Mid-/large-scale HP for companies; Innovative HP solutions for residential sector

Activities to raise awareness:

- Consultations with stakeholders of large scale heat pump projects – clients, designers & installers
- Detailed Planning Guide for Large Scale Heat Pump installation;
- 10 Best-Practice-Case Studies and other information material;
- Tradeshows to provide end-users in the residential sector with advice on HPs, information on subsidies, and 8 technical presentations on heating and cooling with HPs
- Leaflets

Training Activities:

- Training have reached over 550 people so far: mostly professionals along the HP value chain, and end-users in companies and the residential sector



Target Audiences:

- Residential Sector with Deep Retrofit
- Non-domestic buildings

Activities to raise awareness:

- HP4all / Homeowner Leaflet for End Users, distributed to 10 Local Authorities
- Promotional Campaigns in Local Authorities (Climate Action Days)
- 10 Case Studies Exemplar Installations/Knowledge Hub Resources
- Workshops for Homeowners (Estate Events)

Training Activities:

- Capacity Training for HP Installers and SMES (Comfort & Energy in Construction Webinar Series)
- Workshop with Training/Education Providers on Competency Framework
- Training Programme for Designers/Specification /Procurement of HPs
- Meetings with CIF, Engineers Ireland on Competency Framework
- Meetings with Policy makers and HPA on Standards and Best Practice



TUS

Technological University of the Shannon:
Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir

Target Audience:

Public Sector Authorities & Public Buildings

The logo for CTA, consisting of the letters 'C', 'T', and 'A' in a bold, black, sans-serif font. The letter 'A' has a yellow triangle above it.

Activities to raise awareness:

- Webinars with Policy makers & Private sector stakeholders
- Information events for policy makers, professional associations, VET schools to discuss public policies assessment and recommendations,
- Discussions with policy makers and education sector
- Information event with the private sector capacity building: universities/ researchers present trends

- 1. Knowledge Hub** (<https://hp4all.eu/>): Each Pilot region has a country specific Knowledge Hub to suit the different target audiences and region specific resources available. The resources include case studies, guides for installers, guides for homeowners, innovation in heat pump sector, and it also will house the benchmarking tool.
- 2. Benchmarking Tools:** The tools will promote awareness among homeowners of the energy consumption and efficiency of their planned or existing heat pumps and will be integrated into the knowledge Hub. Each pilot region has developed their own tool.



A HP Skills and Competency framework is underdevelopment

Drawing information from:

1. National and European Union Training Providers surveys
2. Analysis of prospective Training Frameworks from around the EU and further afield
3. HP expert surveys & focus groups
4. HP4ALL Public and Market Acceptance Report
5. Meeting in November with EU Heat Pump Associations (Fin, It, De, Hu, Fr & Irl already confirmed)

This will provide a comprehensive picture of

- Diversity of stakeholders
- Required upskilling characteristics
- Learning and adaptation barriers
- Future opportunities that are emerging



An objective of the HP4ALL project is for the replication and adoption of HP4All approach & tools across Europe.

First steps are engagement with the 3 HP4ALL Observer Countries: Croatia, Portugal, Romania.

A mutual recognition agreement will be implemented to fully describe the HP4ALL approach, HP4ALL tools and the roles and responsibilities of the Observer Region and HP4ALL partner. The agreement will also extend to mutual recognition of training.

Example: Ireland & Croatia

- Online and face to face meetings between TUS and University of Zagreb
- Compare and contrast HP training policy and technical content of courses
- With National training authorities, explore pathway to mutual recognition of training
- Set up pilots of IRL trainers presenting to Croatian Installers and vice versa



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 891775

1. HP Grants requiring certified HP training for installers
2. Retrofit One-Stop-Shops
3. SCOP requirements and Monitoring
4. NZEB passports
5. Make HP apprenticeships more attractive, increase intake & training capacity
6. EHPA – HP Skills Accelerator – across entire HP value chain

1. New builds to be 100% energy self sufficient by 2030
2. Mutual recognition of VET schemes in Europe
3. All heat pump installations to require nationally certified installers

1. Access to funding streams continuously improved
2. Greater funding options to SMEs for heat pumps
3. Promote pilots of large scale heat pump systems
4. National standards for larger heat pump systems – involve manufacturers
5. EU funding for projects on implementing mutual recognition of HP skills

The image features a background of industrial pipes, some wrapped in silver insulation, set against a blue and purple gradient. A large, colorful swoosh in shades of yellow, orange, and red curves across the scene. The text 'HP ALL' is prominently displayed in white, with a stylized circular logo between 'HP' and 'ALL'.

HP ALL

padraic.oreilly@tus.ie