Heating systems installers
Expanding and upskilling the workforce
to deliver the energy transition

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HEATING SYSTEMS INSTALLERS
EXPANDING AND UPSKILLING THE WORKFORCE TO DELIVER THE ENERGY TRANSITION

Key messages

1. Installers play a crucial role for the decarbonization of buildings;

2. To meet the REPowerEU targets in 2030 the number of installers will have to increase by 50% in comparison to today. Of the existing installers, at least 50% will have to be reskilled to be able to work with heat pump technologies¹;

3. New competences needed for installers include digitalization, hybridization, electrification, system optimization, refrigerants and decarbonized gases;

4. To increase the number of installers, synergies between different actors are needed: EU legislators, national and regional public administrations, and industry;

5. The EU Commission should provide guidance to Member States about training programmes, including how to include hybridization and renewable fuels (e.g. green hydrogen) in their certification schemes. The Commission should also require them to assess the gap between available and needed installation professionals;

6. At national and local level, better cooperation between organizations in charge of environmental policy and organizations involved in labor and skills policy is needed. Governments should also provide financial support to projects for upskilling and training, and public awareness campaigns should highlight attractiveness of the profession in school programs;

7. The industry is reinforcing existing training programs and is joining forces to develop solutions, policy recommendations and raise awareness on the prospects and attractiveness of the sector.

¹ Heat pump technologies = electric heat pumps, hybrid heat pumps and thermally driven heat pumps
Context

The European Union’s (EU) climate targets aim to transform Europe into a net zero economy by 2050. This transition will affect all sectors of our society, with buildings - and heating – playing a major role.

Why? Because the building sector accounts for 40% of the energy consumption\(^2\) and 36 % of the greenhouse gas emissions in the EU, with heating representing the largest share of energy consumed. To achieve the goal of carbon neutrality by 2050, carbon emissions from buildings will have to be cut by 60% by 2030.

And there is more. In 2022 cutting energy consumption has taken an even more prominent role in the EU political agenda: the EU plans to reduce its dependency on Russian gas by two thirds by the end of 2022 and make it independent from Russian fossil fuels by 2027 in response to the energy crisis\(^3\).

To achieve these ambitious targets, European citizens will have to replace their heating systems with efficient, renewable based and renewable-ready heating systems at a much faster pace than today.

How can we drive millions of consumers to replace their old and inefficient heating systems? A key role is played by installers.

The role of heating installers

Consumers rely above all on the expert advice of an installer, the closest link to them in the heating value chain. A recent consumer study on purchase decisions regarding heating appliances, carried out by Centerdata for the heating industry\(^5\), shows that close to 80% of consumers who recently bought a new heating system received advice from an installer. About 96% of them followed that advice either completely or to an extent.

This is because heating appliances are complex technical systems requiring a high level of expertise: they’re not off-the-shelf products that can be bought at the supermarket. A heating system needs to be selected in function of different influencing factors: for example, the specific building type, its piping and grid connection, heat demand and heat emitters including temperature regime.

Installers are specialized technicians with the specific training and certification needed for the safety and optimization of a heating installation. In addition, they are trusted by consumers because they are regularly in contact with them, for periodic checks of the installation and to provide any needed maintenance service.

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3 Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions – REPowerEU Plan. Brussels, 13.05.2022, COM(2022) 210 final.
4 ECOFYS, EU pathways to a decarbonised building sector, 2016.
5 Centerdata, Consumer study on purchase decisions regarding heating appliances, October 2021, p. 15.
Since installers play a key role in the purchase decision-making process, they can and should play a key role in the decarbonization of buildings and in reaching the EU 2050 climate targets. However, to be able to take on this role, the profession will face a certain number of challenges and opportunities.

In the following chapters of this paper, we will further elaborate on these challenges and opportunities.

**New technologies, new skills: the installers of tomorrow**

Due to the current policy context, the employment perspectives for installers of heating appliances are expected to increase in the coming years in the EU.

The Covid-19 pandemic has durably put the heating sector under the spotlight. Indeed, one of the effects of the COVID-19 pandemic, which started in 2020, was that it made your home – and your well being in it - much more important than before.

During the pandemic, ‘homes’ also became offices, schools and even gyms: hence thermal comfort, indoor air quality, energy efficiency at home grew in importance. This led to very strong market growth for efficient heating systems in several EU Members States in the second half of 2020 and in 2021. In parallel, the interest for renewable energy-based and renewable-ready appliances is increasing, which means governments are supporting their installation.
Diversification of technologies, integration of solutions and digitalization are trends that result in new opportunities for installers and working routines. Already today, with about 1.5 million installers in the EU - most of them small companies - the employment in installation and maintenance is significant. To ensure the roll-out of renewable energy-based and renewable-ready appliances even more workers will be needed.\(^6\)

The recovery of the heating sector after the COVID-19 pandemic - partly fueled by NextGeneration EU\(^7\) - has translated into a rise of interest for a variety of renewable energy-based and renewable-ready technologies. Heat pumps were particularly successful on the European market in 2021: the market for hydronic heat pumps in Europe reached for the first time 1 million pieces sold. Hybrid heat pumps have been constantly on the rise, particularly in Italy, the Netherlands, France and recently also in Germany. They represent 8% of the heat pumps sales in Europe today and we expect them to grow significantly in the future.

On the other hand, condensing boilers running on gas remain the first choice in heating technology: from 3 million units sold in 2012 to over 5 million units in 2021. In parallel, developments on the gas infrastructure are ongoing in preparation of the transition from fossil fuel gas to biomethane, green e-methane, green hydrogen, or blends. As the latest European Commission scenarios for the decarbonization of residential buildings show a rate of electrification of heating below 40% by 2050, we can expect the use of green gases for heating to increase in the future.

In the recent years, biomass boilers have also gained in popularity in some EU Member States. In Denmark, after heat pumps, they are the most common technologies to replace the stock of old and inefficient boilers. In Poland, with 128,800 units sold in 2021, sales of biomass boilers increased by 16% between 2019 and 2021. In Austria, for the same period, sales of biomass boilers increased by 45%, with 17,300 units sold in 2021.

Solar thermal systems are regaining popularity in Germany, with sales growing by 25% between 2019 and 2021. In Poland as well, there is a growing interest in hybrids composed of a heat pump and solar thermal collectors.

Second, favorable policies at national and EU level are supporting these trends in the longer term. At national level, this takes the form of financial support policies.

At EU-level the ambitious Green Deal decarbonization targets and the REPowerEU goals require not only to speed-up the pace at which old and inefficient heating appliances are being replaced; but also to accelerate the uptake of a diversity of renewable and renewable based heating technologies, such as electric hydronic heat pumps, technologies using renewable gases (e.g. hybrid heat pumps, micro-cogeneration units or thermally driven heat pumps) and technologies using bioenergy (e.g. biomass boilers). This will require the deployment of a considerable workforce to install and maintain these new appliances over the decades to come.

In Italy, new, attractive funding instruments drew attention to the importance of the building sector and of a new way of experiencing life at home. In Germany, attractive financial support policies came into effect on 1 January 2020 and enabled the heating sector to achieve double-digit growth in the country by year-end compared with 2019.

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\(^6\) As an example, heat pumps take more time to install than boilers, as a minimum ratio 2:1.

\(^7\) NextGenerationEU is the recovery plan launched by the European Commission to help rebuild a post-Covid-19 Europe. It aimed among others at financing investments to make buildings more energy efficient.

\(^8\) Impact assessment 2030 climate target plan, Com(2020) 562 - Stepping up Europe’s 2030 climate ambition – Investing in a climate neutral future for the benefit of our people, figure 57
Climate-neutral buildings: how many installers are needed to reach the goal?

The expected growth of the market to support the Green Deal decarbonization goals will create job opportunities throughout the industry’s value chain, including for installers of all types of efficient and renewable energy-based technologies, such as electric heat pumps, hybrid heat pumps, thermally driven heat pumps, biomass boilers, solar thermal, micro-cogeneration units, fuel cells etc.

Today, there are over 1.5 million installers of heaters in Europe. Estimations of how many new installers would be needed vary depending on the assumptions made, but it is safe to assume that many more installers than today will be needed to deliver the EU goals for buildings. Following are some estimates based on different scenarios.

Estimated needs to achieve the REPowerEU targets in 2030 and net zero emission in 2050

The EU Commission’s REPowerEU communication aims at doubling the deployment of hydronic heat pumps to achieve 10 million units installed in the next five years. In addition to that, it aims at increasing the biomethane production to 35 bcm and the hydrogen production and imports to 20 million tons by 2030. Furthermore 1335 kiloton hydrogen are projected to be blended into gas distribution in 2030⁹.

To get a better understanding of how the heating sector can contribute to the REPowerEU and 2050 zero emission building targets, Guidehouse carried out a study for the European Heating Industry. Two scenarios were investigated: one with a higher electrification of heating and one with a more balanced mix of renewable energy sources.

Based on these scenarios, we estimate that an additional 0.75 million installers will be needed in 2030, that is around 50% more than today. In addition, at least 50% of the existing installers will have to be reskilled to be able to work with heat pump technologies.

Estimates in European countries (based on national targets)

In **France**¹⁰, it is estimated that in the ten coming years, the roll-out of heat pumps will create 20,000 jobs in the heat pump segment of the heating market. Among these, 5,000 jobs will be in installation trades and 10,000 jobs in maintenance of systems¹¹.

- For **Germany**¹² one estimate states that to increase the number of heat pumps installed from 1.1 million: to 5.8 million units by 2030, in line with the 2022 ambitions of the German government, the number of installers must double compared to today’s level, i.e., 38000 new installers in Germany.

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⁹ Commission Staff working document – Implementing the REPowerEU action plan: Investment needs, hydrogen accelerator, and achieving the bio-methane targets. Brussels, 18.05.2022, SWD (2022) 230 final.

¹⁰ France is currently the largest EU market for electric heat pumps today, with 267,000 electric heat pumps air to water installed in 2021.

¹¹ Source: AFPAC (French national heat pump association) Based on national climate and energy targets, the AFPAC estimates that the stock of installed heat pumps in individual housing in France will have to increase from current 1.25 million units to between 3.25 and 4 million units by 2030. [https://www.afpac.org/downloads/Documentation-de-l-AFPAC_159826.html](https://www.afpac.org/downloads/Documentation-de-l-AFPAC_159826.html).

¹² Source: Bosch Thermotechnik calculations to estimate the number of installers required in Germany to support the national GHG emission reduction goals.
Based on the same electrification-heavier scenario, the ZVSHK (German Central Association of Plumbing, Heating and Air workers) estimates that 60,000 installers will have to be trained by 2030 to reach the German target\textsuperscript{13}, as they estimate that replacing an old boiler with a heat pump takes between 11 and 16 man-days (including any needed updates of the overall heating system (heat emitters, circulators, thermostats...)).

While the need for a faster replacement of inefficient systems represents important opportunities for job creation, training enough installers to support the Green Deal targets is also a challenge: the profession of installer seems unattractive, especially for young people, which represents an issue in the long run.

Consequently, even though the market is growing, the number of installers has decreased or stagnated in the last year in several European countries.

Some highlights:

- In the **Czech Republic**, the number of installers has decreased by 3% in 2021 compared to the previous year; also, in the UK there is a decrease;
- In **Spain** and **Poland** there was a stagnation in the number of installers in 2021;
- In **Germany** and **Italy** there has been a minor growth in the number of installers of 1 and 0.9% in 2021 compared to the previous year.

In addition, the roll-out of new heating technologies requires not only to train more installers, but also to upskill the current installer network. However, the time for learning new skills is often limited, particularly for companies with a low number of employees, which is very common for installer companies. As a result, skilled labor is currently relatively low in some countries and very low in others.

It is therefore crucial to train more installers and to upskill them to support the uptake of the renewable and renewable based technologies and hence of renewable energy in buildings.

Some figures in selected EU countries:

- In **Italy**, 30% of installers are qualified to install heating systems working with renewable energies;
- In **France**, a quarter of the installers are qualified to work with heat pump technologies;
- In **Germany** and in **Poland**, only 10% of installers are qualified to work with heat pumps;
- In the **UK**, only 3% of heating system installers are registered installers of heat pump technologies;
- In the **Czech Republic**, while 20% of the installers have a heat pump certification, only 0.5% of installers are certified to work with hybrid heat pumps, 4% with solar thermal, and 1% with micro-cogeneration units.

\textsuperscript{13} https://www.bdh-industrie.de/fileadmin/user_upload/Deutsche_Waermekonferenz/dwb2022/dwb2022_vortrag_hilpert_wer_baut_das_alles_ein.pdf
What are the skills needed by an installer?

Installing a heating system requires skills, training, and a good understanding of the overall heating system. A variety of heating solutions mean that installers need to identify and master many different parameters and technologies. One of them is the building type: the heating needs are different for a private cottage, a multi-family building, a commercial office or an industrial building. Other parameters include: the level of insulation of a building, the development of existing local energy grids, the availability of decarbonized and renewable energy sources locally, as well as the climate zone where a building is located and the financial resources of the building owner. Taking this information into account, the installer plays a key role in advising clients and orientating them towards the best suited heating technology.

Once the choice of heating appliance has been made, installers are responsible for the correct power setting and optimization of the heating installation (so called ‘dimensioning’). This entails an analysis of the heating needs of a building, as well as an accurate calculation of the size of radiators or underfloor heating that is needed for that specific house. The same goes for hydronic balancing of the heating system, i.e., optimization of the distribution of water heating in the system. This operation aims at providing a certain indoor temperature at optimum energy efficiency and takes time during the installation process.

Over the entire life cycle of the heating appliance, installers and maintenance technicians will also intervene, to repair the appliance in case of breakdown but also for periodic checks.

Periodic checks are triggered by national requirements. At least one annual inspection of the heating system is recommended in general. In addition, for heat pumps, the F-gas regulation imposes periodic leakage checks dependent on the refrigerant type and amount.
**New skills for new technologies**

Installers that are qualified to install conventional heating appliances will need additional skills to install renewable-ready and renewable energy-based heating technologies. What are these? They’re about electrification, refrigerants, hybridization, decarbonized gases, and digitalization.

In line with the REPowerEU communication of the EU Commission\(^{14}\), the electrification of heating will play a key role to reduce the EU dependency on fossil fuels. This means that installers of heating appliances will increasingly have to work with electricity-powered appliances, such as electric heat pumps. In addition, to support the roll-out of heat pumps, installers will need to be trained and certified to work with refrigerants. Indeed, the F-gas Regulation\(^{15}\) requires natural persons who install, service, repair, decommission specific heat pump technologies with hydrofluorocarbons (HFCs) (e.g., split systems or heat pumps with high refrigerant amounts), do leak checks or reclaim HFCs to be certified. Possibly this will be expanded to other non HFC refrigerants in the future.

Alongside the electrification of heating and the roll-out of heat pumps, hybridization and the deployment of green gases will play a key role for the decarbonization of buildings, especially in existing buildings. Hybrids are a system of appliances that combines at least two different energy sources and whose operation is managed by one control. This makes them very efficient, flexible, and suitable for a variety of situations. As such, they require from the installer to determine in each situation which technologies and energy sources to combine, and to balance these. In addition, installers will need to be trained to be able to safely handle some of the renewable gases that are expected to play a significant role in the decarbonization of heating.

Finally, with the roll-out of smart heating appliances, the installation of a heater includes, more and more, the installation of smart components, interacting with energy supply infrastructures on- or off-site, or with the other appliances of a building, as well as with users themselves, for example via their smartphones. In addition, in product development, manufacturers move towards “plug-and-play” solutions and digitally supported maintenance. This will facilitate installation and maintenance but will require a good command of digital products.

All these elements point to a fundamental conclusion: the skills of installers must develop to enable the roll-out of renewable-ready and renewable energy-based technologies and make the decarbonization of heating a reality in all European homes.


\(^{15}\) Regulation (EU) No 517/2014
Today’s qualification requirements across Europe

While the technologies which installers need to be experts of are broadly the same across Europe, every European country has different qualification requirements, and these sometimes go beyond the European requirements.

At European level, two legislations indicate requirements for the qualification of installers to install renewable-based heating systems: the Renewable Energy Directive (RED), which demands installers to have a specific certification to install biomass, heat pumps, shallow geothermal, solar photovoltaic and solar thermal energy; and the F-Gas Regulation for handling appliances with hydrofluorocarbons, as explained earlier in this paper. Aside these two Europe-wide regulations, there are diverse certification and qualifications requirements in every European country, and in federal states also in the different Regions.

In Italy, installers who work with heating systems powered by renewable sources of energy, including heat pumps, need to be qualified and need to maintain their status by means of periodical exams: this is in addition to the F-gas certification. In Austria, there is no general certification regime for heat pumps, only the one in accordance with the F-gas regulation. In Germany, there is a voluntary certification for working on heat pumps, on top of the mandatory certification in accordance with the F-gas regulation.

Similarly, for renewable gases the requirements differ from one country to the other: in the Czech Republic and Poland no information is available on how to treat hydrogen appliances; in the UK, at the time of writing the most advanced European country as far as hydrogen-heating is concerned, a training and assessment plan is used as a basis for ensuring that only professionals with the relevant competences work on trials with hydrogen.

The differences in national qualification requirements highlight how challenging is the exercise to find a European-wide solution. And yet it is useful to identify at European level what is missing in current qualification requirements and how these can be updated to cover all aspects of renewable-based heating systems.

How do you train to become a heating installer?

In the European Union, education and training are a competence of Member States. As such, the programs aimed at training future installers and updating their skills can vary considerably from one Member State to the other.

**Germany**

A certification in combination with a three-and-a-half-year apprenticeship at a craft enterprise is needed to become an installer. The certification is organized at federal level by a professional trade association, ZVSHK\(^{17}\) (Central Association for Sanitary, Heating and Climatization), which establishes the content of the training. The apprenticeship is regulated by national authorities and includes the state-of-the-art heating technologies. After having worked for two years, installers can apply for a master craftsman’s diploma, which will allow them to open their own business.

According to the German legislation related to the handling of F-Gases (the Chemicals Climate Protection Ordinance, so called “ChemKlimaschutzV\(^{18}\)”), depending on the quantity of refrigerant contained in an appliance, a professional is required to pass an examination which will give him/her a certificate of suitability to work with the refrigerant circuit of a heat pump. Small self-contained heat pumps are exempted.

Training on heat pumps’ installation is provided by several institutes and heating systems manufacturers.

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\(^{17}\) [https://www.zvshk.de/](https://www.zvshk.de/)

In addition, installers who work with heat pumps can get a training course with a final qualification from VDI – the association of German engineers - based on guideline VDI 4645 related to Heating systems with heat pumps in single-family and multi-family houses. The training course is not mandatory but provides professionals with a comprehensive summary of specific requirements to planning, installation and operation of systems with heat pumps for single family houses and multiple dwelling units, in order to provide quality assurance for well-planned installations of heating systems with heat pumps.

**France**

There is a large variety of public education schemes aimed at training future installers and maintenance technicians. In addition, installers can complete various certification schemes to work with renewable energies. One example of certification scheme is the one proposed by the association Qualit’EnR, which delivers training and certification to install heat pumps, but also solar thermal systems, biomass boilers and photovoltaic panels.

There are close to 15 different training schemes to obtain the certification to work with heat pumps, in over 350 educational institutions and training centers. When it comes to continuing education, installers can get the necessary certification to work with heat pumps via private training.

**Spain**

Usually training courses are not organized by national authorities, but rather by installers associations at national or regional level, manufacturers, and dealers. There are several routes to learn the trade, i.e., via vocational training, certification bodies, certificates of professionalism and exams in each administrative region of Spain.

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19 Heizungsanlagen mit Wärmepumpen in Ein- und Mehrfamilienhäusern: https://www.vdi.de/richtlinien/unsere-richtlinien-highlights/vdi-4645 (visited in May 2022)
20 Installateur RGE, professionnels RGE qualifiés | Qualit’EnR (qualit-enr.org)
The courses include all technologies, all energy sources, and refrigerants, as well as control, and application integration, or hybridization.

**Czech Republic**

There is no specific curriculum of studies for installers of heating systems in the Czech Republic. The first step to obtain the state certificate and trade license is for future installers to follow a training course organized by a trade association, i.e., the Union of cooling and air-conditioning technology, and to pass the corresponding test. However, for service engineers, who are in charge not only of installation, but also of commissioning, maintenance and servicing of heat pumps, the process to get the certificate necessary in accordance with the F-gas Regulation (which is required for working with split heat pumps and to service monobloc ones) is longer: in addition to the certification required for installers, they need to get the corresponding training and 5 years of praxis in branch cooling appliances. After fulfillment of both conditions, they can receive a trade license for the repair of heat pumps.

**Italy**

From August 2013, installers and maintenance workers of biomass boilers, fireplaces and stoves, solar systems in buildings, geothermal systems and heat pumps, must get a specific certification, the RES certificate. All the companies with activity in scope, must be qualified by having their technical managers follow a 16-hour course, which has to be updated every three years. A renewable energy sources certification can only be obtained by demonstrating that the companies’ technical managers have an experience of at least 4 years and have followed a course of at least 80 hours. Each certificate must be sent to the local CCIAA (Chamber of Commerce, Industry, Agriculture and Handicraft) that will upload it in the company’s folder.

The responsibility for handicraft and vocational education belongs to the Italian regions. They define the selection criteria for private training centers to perform the trainings.

**Belgium**

Installers need to be certified as refrigeration technicians to be allowed to work with heat pumps. In contrast, there is no mandatory certification scheme to install renewable energy-based heating technologies. Nonetheless, installers can pass a voluntary certification, the Qualiwall certification, which exists in different versions for biomass boilers, solar thermal systems, and heat pumps, and is linked with regional subsidies for the purchase of the corresponding technologies.

In Wallonia and in Flanders, 23 public and private training centers offer the corresponding training for heat pumps, 13 for solar thermal systems and 5 for biomass boilers21.

These examples demonstrate the big differences in the routes to the profession of installers and maintenance professionals across the EU. In some cases, the process to obtain the necessary certificates is long and complex. This does not help to make the profession more attractive.

In some Member States, the training curricula for education of professionals are regularly updated to include the state-of-the-art. In others, there are no training courses, or they only provide basic knowledge about sanitary and heating technology. Here, the training provided by manufacturers is crucial to train technicians to work with state-of-the-art systems.

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Heating manufacturers and training

In Europe, manufacturers of heating appliances are largely involved in the training of installers. Usually, the trainings they offer are on all types of products, and often with a focus on the new products.

In The Netherlands, the training and certification to work with heat pumps is delivered by the manufacturers themselves.

In Italy, most of the manufacturers organize non-mandatory courses that can be taken to complement mandatory training. While mandatory trainings provide theoretical bases and competence on the most common technical solutions, companies training offers the opportunity to become a specialist on some specific products, learn how to explain their benefits to end-users and be updated on the legislative evolution and on new products on the market.

In Germany, training for heat pumps offered by manufacturers is not focused solely on their own products but more largely to specific conditions for heat pumps. Many manufacturers offer the opportunity to obtain the voluntary certification according to the above-mentioned VDI 4645.

In France, the national heating association Uniclima serves on the Board of Qualit’EnR (the institute which is accredited to deliver certification to installers for renewable-based installations, see above) and supports actively the recognition of the training delivered by manufacturers in the scheme. In addition, several manufacturing companies deliver training in private training centers, including training in view of the QualiPAC certification for the installation of heat pumps.

Despite the large implication of companies in the training and upskilling of heating installers, workforce shortages remain a major challenge in the pathway towards the decarbonization of buildings. To reach the REPowerEU targets, solutions to expand the network of workers and upskill them need to be deployed at EU, national and industry level.

FIGURE 9 – New competences needed for installers include digitalization, hybridization, electrification, system optimization, refrigerants and decarbonized gases.

22 https://www.qualit-enr.org/qualifications/qualipac/
Recommendations

What can be done at EU level

Although education and professional training are a national or even regional responsibility in Europe, the EU-level action can have an important role to support the development of skills for installers and maintenance professionals to be the agent of the decarbonization of buildings.

In this view, the European Commission, potentially with support of European Standardization organizations (ESO), should provide guidance at a national or regional level on what training programs should include to supply the skilled workforce needed for an increase in renewable-based and renewable-ready technologies. EU legislation should ensure that the training and upskilling of installers is tackled by EU Member State’s efforts towards higher efficiency and energy performance of their buildings.

Concretely, the revision of EU directives on Renewable Energy (RED), Energy Efficiency (EED) and Energy Performance of Buildings (EPBD) should require Member States to assess the gap between available and needed installation professionals to achieve EU climate and energy objectives. This will enable Member States to quantify and address shortcomings in availability of skilled personnel and the challenges they will face in the attainment of EU targets. It will also encourage them to take appropriate action to promote technical careers and set up state-of-the-art training facilities. This view, expressed in the 2022 #Skills4Climate campaign, is supported by 18 industry associations involved in the energy transition, including the European Heating Industry.

The proposal of the European Commission to amend the Renewable Energy Directive on the qualification and certification requirements of installers goes in the right direction: according to the amendments to article 18, Member States will have to make sure that certification schemes are available to ensure a sufficient number of trained and qualified installers and ensure that a list of qualified installers is regularly updated. Such certification schemes should be made available for installation companies, alongside individual installers, as this can be more relevant in certain Member States and allows for more installers to do the job, while still identifying clear responsibility on the installation quality.

In addition, EU regulation should provide the blueprint for Member States to include hybridization and the use of renewable fuels for heating in their certification schemes, because these are key instruments to increase the use of renewable energy in buildings.

Lastly, the EU can support the expansion of the installers network via funding. EU funding can be used to directly finance training and upskilling of installers (see some examples of recent projects). In addition, it can be used to support initiatives that aim at finding long-term solutions to develop the network of installers.

Belgium: Advanced Technology Centre (2007 - 2013)

The Advanced Technology Centre at the Institut Notre Dame in Brussels aims at training technicians in the use, installation and maintenance of ultra-modern equipment which runs on green, renewable, and reusable energy. This Centre was financed at 50% by the EU’s European Regional Development Fund, through the Operational Programme “Brussels Capital Region”. It offers a wide array of different courses, including in renewable energies, thermal energy, and condensing boilers. An estimated 360 people should be trained by the Centre each year, with 25% of places reserved for workers and job seekers.
What can be done at national / regional level

In some countries’ administrations, there is only a weak connection between organizations involved in national policymaking on environmental topics on the one hand, and organizations involved in labor markets and skills policy, on the other. Therefore, agencies’ units dedicated to the development of “green skills” (including training and upskilling for installers of efficient heating systems) are rare. A more transversal approach would enable to identify and quantify more precisely the employment and qualification needs of the industry and developing a rapid response from the education structure. All in all, this would improve the matching between the industry need for workers with “green skills” and the means put in place to train and upskill them.

In addition, national public authorities can play a major role to support the effort made by manufacturers to upskill and train more installers. This can take the form of financial support for the upskilling of installers of heating systems and can be part of the decarbonization effort from national governments. Some examples include:

- subsidies to training centers to increase the learning capacity;
- financial support to installers, as the cost of training can be a barrier for them to undertake continuing education.

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This initiative, funded at 75% by DG Energy’s Intelligent Energy Europe Programme, aimed at developing large-scale training and qualification schemes for installers-maintainers of burners, along with schemes for insulation technicians as well as aluminum and metal constructions craftsmen.

The initiative focused on the continuing training of on-site technicians, strengthening the qualification of system installers after their initial education and training, or after entering working life.

The project resulted in 139 professionals (of all 3 categories) qualified and certified. In addition, pilot “train the trainer” courses were implemented, resulting in 58 new trainers qualified till the end of the project and 225 in the few years after:

https://constructionblueprint.eu/results/

EU-level: Construction Blueprint

This project, funded by the 2018 Call of the Erasmus+ Programme of the European Union, aims at developing a new sectoral strategic approach to cooperate on skills in the Construction industry (including heating), and support a better matching between skills need of companies and skills provided by training centers. Running until December 2022, the initiative led among others to the publication of a status quo report on sectoral skills, a roadmap and action plan to adapt skills demand and current offer, as well as the elaboration of an interactive map of good practices at national and regional level. New training curricula designed to update vocational education training are also in preparation.

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23 https://constructionblueprint.eu/results/
Adapting school programs is also crucial to support the EU decarbonization goals. In its 2021 report on education and jobs to support the green transition, the UNEP highlights the need for school curricula to include environmental sustainability concepts and information about green career pathways. This should ensure that students understand the urgent sustainability issues and motivate them to participate in solutions, and in fine, motivate them towards the profession of installer as well as other career paths that are essential to the energy transition. In addition, as smart systems are increasingly being used in heating systems, school curricula need to be updated to include new technologies.

Finally, public authorities could give visibility to the heating sector as an employer. Communication campaigns towards young people and their parents, as well as for professionals seeking retraining, are necessary to raise awareness and to show how important and attractive the installer profession is: a local job, well trained and secure, with a key role in fighting climate change.

In 2018 in Brittany, France, the regional branch of the French Building Federation launched the awareness-raising communication campaign #JaiChoisiLeBatiment (“I chose construction”). Targeting the general public and young people, the campaign aimed at diverting a number of clichés regarding careers in construction. Around fifteen posters representing the main building crafts (including the plumbing and heating sector), displayed facts besides familiar stereotypes (jobs for men only, low level of studies, etc.). This communication has been adopted in other French regions and at the national level and has attracted more students in vocational and education training (VET) centers.

What can be done at industry level

Manufacturers of heating systems play a major role in the training and upskilling of installers.

Today, most installers have been trained by manufacturers, mostly for free and in training centers that industry has invested in and developed.

As an industry, we pledge to providing training on efficient and renewable based technologies for the additional 0.75 million installers needed. Our companies are ready to step up their game and duly prepare the workforce that will make the heating transition reality.

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25 UNEP 2021 report “Global guidance for education on green jobs: connecting higher education and green opportunities for planetary health”
27 https://constructionblueprint.eu/initiative/jaichoisilebatiment-ichoseconstruction/
At the same time, it is important that enough people have the basic skills needed for heating training. In this sense, we are ready to work with national and local authorities to increase visibility to the heating sector as an employer and to provide input to adapt school programs to ensure they include the knowledge needed for the job.

As the entire construction industry is facing similar challenges as the specific heating branch, industry may join forces to develop solutions, policy recommendations and raise awareness on the prospects and attractiveness of this sector.

The so-called #Skills4EU Coalition gathers major European associations in the electrical and construction sectors, including representatives of the heating industry. Initiated in 2019 by the European Electrical Contractors’ Association EuropeON, the coalition launched several campaigns calling on EU and national policy makers to strengthen the skills base in the electrical and construction sector. For this purpose, #Skills4Climate focuses on five areas of action: Intertwine Climate and Skills Strategies; Strengthen Public-Private Partnerships; Incentivize Technical Education; Incentivize Apprenticeships; and Incentivize Re- and Up-Skilling.

The Construction 2050 alliance is a partnership established in 2020 made of more than 50 European organizations representing the actors of the built environment working together towards a sustainable construction sector. They identify the labour shortages as one of the main challenges the construction sector will have to face in the coming years. To tackle this, the alliance calls for developing solutions that are tailored to fit the particularities of the construction sector, as well as a strong partnerships between the European Institutions, Member States and construction stakeholders.
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