



# Training Skilled Professionals for the Heat Supply of Tomorrow

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The decarbonisation of the energy sector is placing heat supply at the centre of European climate strategies. District heating and cooling (DHC) systems are regarded as key technologies for achieving climate neutrality. However, the sector faces a dual challenge: alongside the technical transformation, there is a growing shortage of qualified professionals. Planners, installers, engineers, and system operators are in high demand – across national borders.

## Tailored Qualification Programmes

Launched in autumn 2024, the EU LIFE project *Skills4DHC*<sup>1</sup> develops new qualification programmes to attract and retain skilled professionals in the district heating sector. The project is coordinated by WIP – Renewable Energies (Germany) and includes partner organisations from Belgium, Denmark, Germany, Austria, Italy, Ireland, the Netherlands, and Estonia. The objective is to design targeted education and training formats in close cooperation with district heating utilities and training providers – addressing all target groups, from career changers to experienced engineers.

The project is structured around five central fields of action. It develops cross-country training materials and English-language modules for universal application, while also creating regionally adapted

programmes tailored to specific national needs. In addition, it establishes dedicated training schemes for technical professionals, public authorities, and municipal administrations, integrates district heating and cooling content into university curricula, and promotes vocational education pathways for skilled trades alongside targeted recruitment measures. This comprehensive structure reflects the diverse requirements of the sector, ranging from pipeline installers and plant engineers to permitting authorities.

## Where Is the Concrete Need for Further Training?

Initial analyses highlight the urgency of action. A survey among AGFW<sup>2</sup> members in Germany revealed that 97 percent of responding companies report a need for further training. Demand is particularly strong for practice-oriented programmes that combine technical expertise with economic, regulatory, and digital competencies.

Comparable findings have emerged in the partner countries. In Austria, there is strong demand for skilled craft professionals as well as continuing education opportunities for municipal staff and spatial planners. In Italy, limited awareness of district heating and a lack of corresponding academic programmes constitute major bottlenecks.

Ireland faces a shortage of practical learning opportunities due to the still limited number of operational district heating systems. In Estonia, the greatest qualification demand lies in digital technologies, including data-driven network optimisation and the application of artificial intelligence for control strategies and system operation. In the Netherlands, the primary need concerns integrated training formats that combine technical, planning, and economic expertise. Many companies favour modular and practice-oriented formats that address both specialist knowledge and management competencies.

Skills4DHC responds to these challenges with a blended learning approach that combines in-person seminars, online modules, and technical study visits. Mentoring programmes, particularly for municipal staff, complement these formats and facilitate peer-level knowledge exchange. A defining strength of the project is its European dimension: by analysing national regulatory contexts and qualification frameworks, it develops training content that is standardised while remaining adaptable to different local conditions.

### Guideline for Training Programmes

An evidence-based guideline for developing target group-specific training programmes in district heating and cooling has already been established. It defines pedagogical principles for various professional groups – from skilled workers and planners to decision-makers in administration and politics –

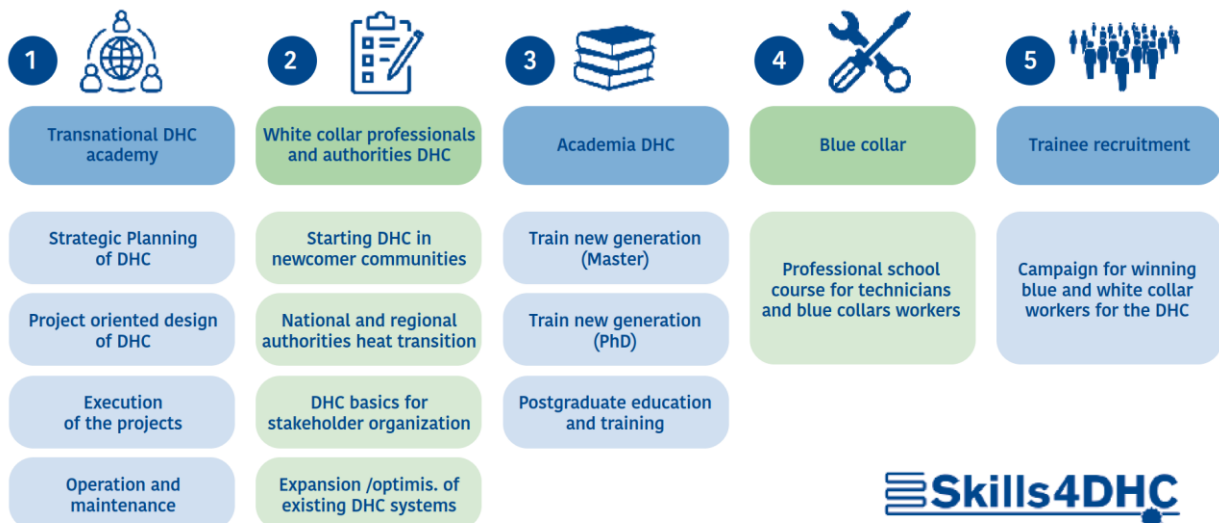
based on modular, practice-oriented, and partly digital learning formats tailored to sectoral needs. The guideline is complemented by quality assurance principles enabling scalable and Europe-wide deployment of the training programmes.

A further key step involved analysing existing qualification and certification frameworks. The assessment revealed that the district heating and cooling sector currently lacks a dedicated qualification framework in the participating countries. Nevertheless, national and sector-specific systems allow comparability of qualifications. Skills4DHC therefore aims to align future training programmes, where possible, with the European and National Qualifications Frameworks (EQF/NQF).

### District Heating Technician as a Recognised Apprenticeship

In Austria, an important milestone in systematic workforce development has already been achieved through the introduction of the new apprenticeship programme in District Heating Technology. With a duration of three and a half years and a clearly defined occupational profile, the programme combines traditional craftsmanship with modern energy and plant engineering. The training covers the construction, maintenance, and optimisation of district heating generation and distribution systems, the programming and testing of measurement, control, and regulation equipment, as well as fundamentals of corrosion protection, material processing, and efficiency improvement.

#### TRAINING PROGRAMMES AND TRAINING SCHEMES



Overview of training programmes within the “Skills4DHC” project, Source: Euroheat & Power

The curriculum was developed in close cooperation between the Ministry of Education, the Austrian Gas and Heat Association (FGW), and industry representatives. The first utilities have already recruited apprentices — young professionals motivated to contribute to the heat transition. The programme not only provides secure employment but also offers diverse career pathways, ranging from service technician and plant supervisor to planning engineer, thereby opening attractive prospects in a growing market.

The new apprenticeship programme thus represents a model example of how education policy, industry, and climate objectives can effectively align. It establishes a standardised and officially recognised qualification in a sector expected to generate tens of thousands of jobs in the coming years, while simultaneously making a tangible contribution to achieving national and European climate targets.

## Outlook and Conclusion

The next steps within the Skills4DHC project include the implementation of pilot training programmes and recruitment campaigns in the six partner countries, followed by expansion to additional countries. The first training sessions are scheduled to take place as early as November 2025 in Italy and Austria. All training activities will be systematically evaluated, leading to the development of a transferable qualification model that strengthens the sector's competitiveness while attracting new skilled professionals.

Skills4DHC thus lays the foundation for a heat transition that is technologically advanced, innovation-driven, and supported by a sustainably developed workforce. It ensures that Europe's district heating networks are equipped for the future. One point is unequivocal: without a sufficient number of well-trained professionals, the heat transition will not succeed.

<sup>1</sup> [https://cinea.ec.europa.eu/programmes/life\\_en](https://cinea.ec.europa.eu/programmes/life_en)

<sup>2</sup> <https://www.agfw.de>

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### Further information and links in the e-paper

[https://www.aee-intec.at/zeitung/nachhaltige\\_technologien-4-2025/20/](https://www.aee-intec.at/zeitung/nachhaltige_technologien-4-2025/20/)

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## Sources and further information

Selected article from the journal

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