

## UpgradeDH recommendations to support national District Heating & Cooling Action Plans

The [Upgrade DH project](#) supports the upgrading and retrofitting of district heating (DH) systems in different climate regions of Europe, covering various countries: **Bosnia-Herzegovina, Denmark, Croatia, Germany, Italy, Lithuania, Poland, and The Netherlands**. These countries are quite diverse in terms of the DH share in the total residential heating demand (ranging from 2.3% in Italy to 64.8% in Denmark) and primary energy sources used to produce heat (from mostly coal in Bosnia-Herzegovina and Poland to mostly renewable energy sources in Lithuania and Denmark). While it is widely acknowledged that district heating and cooling (DHC) systems should have a significant role in the future decarbonised energy system, clear action plans for the development or retrofitting of DHC networks are non-existent in the vast majority of European countries.

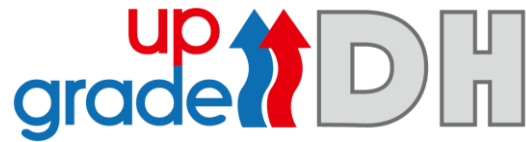
One of the core activities in the UpgradeDH project is the **development of national action plans** for the retrofitting of inefficient district heating networks **in the above-mentioned target countries**, including the results of the retrofitting approaches (see also the *District Heating Handbook* developed within the project [1]). This work has now been finalised and the recommendations have been published on the UpgradeDH website [2-9]. The DHC plans include an overview of the current policy framework relevant for DHC development, market analysis and challenges, as well as proposed solutions.

Here are some of the main take-aways for each country:

**Bosnia and Herzegovina:** Due to the complex administrative structure of the country, separate laws exist at the state, federal, and canton levels. Challenges, such as scattered regulatory framework for the DH sector, have been identified, as well as priorities for improving the market regulatory conditions in the heat sector. Policy recommendations and actions for the modernisation of inefficient district heating systems are presented in the DHC action plan including their implementation timeline.

**Denmark:** The report finds the situation of the DH sector in Denmark to be very satisfying from the renewable and efficiency perspective, adding only minor recommendations to the developments that are already ongoing and efforts to further decarbonise and increase efficiency. For example, removing taxation on waste heat, and instead of using CO<sub>2</sub> taxes to push the market, encouraging climate friendly solutions. Other recommendations focusing on production, distribution and end-use consumption are also included.

**Croatia:** District heating will have a significant role in the future energy system in Croatia, which is already outlined in the National Energy and Climate Plan. However, various actions and measures need to be implemented in order for district heating to achieve its potential. The proposed action plan has been developed based on the analysis of the current state of the sector and taking into account the already developed action plan of the [KeepWarm project](#) for Croatia.



**Germany:** Germany is characterized by numerous promotion instruments and incentive programmes for the improvement of district heating systems. Input to the DHC action plan for this country contains recommendations on large heat pumps as an important piece of the puzzle for implementing the planned coal phase-out. Other recommendations focus on funding opportunities, tax incentives, legislative framework, integrated urban planning and knowledge exchange between municipalities.

**Italy:** Input to the DHC action plan for Italy contains recommendations over short, medium and long timeframes. The short-term strategy mainly focuses on legislative interventions. The medium-term strategy details possible retrofitting measures on the production, distribution and consumption sides. Finally, the long-term strategy emphasises consumer empowerment, novel business models, multi-energy planning and digitalisation.

**Lithuania:** The Lithuanian district heating market is heavily regulated and there is a lack of investments into new efficient DH systems. International collaboration of experts as well as identification of sustainable options for DH systems is essential in this process. Therefore, a list of existing regulations, problems and proposed solutions that could support the development or retrofitting of DH networks was elaborated.

**Poland:** DH is already considered as a solution by the Polish Government for the green transition process. The proposed action plan provides recommendations, which can be considered in the transition process. The solutions can be divided into three main areas, where the district heating is acting: production, distribution and end-use. Furthermore, a fourth area regarding policy and regulation can be considered, which does not directly act on the district heating network but can incentivise its development.

**The Netherlands:** There are clear indications that district heating is going to be promoted in general. It has been stated by the Government that by 2050 natural gas shall no longer be used for heating purposes. More specifically, the Dutch Climate Agreement of 2019 covers many aspects that must be considered for the transition towards the implementation of renewable energy solution in the Netherlands. The proposed action plan suggests actions for DH that can be considered to increase the possibilities of reaching the national targets.

Read the full reports [here](#) or contact UpgradeDH partners for more information in national languages.

**About:**

The overall objective of the Upgrade DH project is to improve the performance of district heating (DH) networks in Europe by supporting selected demonstration cases for upgrading, which can be replicated in Europe. The Upgrade DH project supports the upgrading and retrofitting process of DH systems in different climate regions of Europe, covering various countries: Bosnia-Herzegovina, Croatia, Denmark, Germany, Italy, Lithuania, Poland, and The Netherlands. In each of the target countries, the upgrading process will be initiated at concrete DH systems of the so-called Upgrade DH demonstration cases (demo cases). The gained knowledge and experiences will be further replicated to other European countries and DH systems (replication cases) in order to leverage the impact. Core activities of the Upgrade DH project include the collection of the best upgrading measures and tools, the support of the upgrading process for selected DH networks, the organisation of capacity building measures about DH upgrading, financing and business models, as well as the development of national and regional action plans. In addition, an image raising campaign for modern DH networks will be carried out in the Upgrade DH project. The outcome will be the initiation of DH upgrading process in the above-mentioned target countries and beyond.

**Disclaimer:**



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**References:**

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