

# Analysis of heat pump measures and targets in the Draft National Energy and Climate Plans (NECPs)

The heating and cooling sector's decarbonisation is pivotal to EU climate goals, accounting for 51% of energy demand and 27% of CO<sub>2</sub> emissions in Europe. The deployment of 60 million heat pumps, as per the REPowerEU Plan, could cut emissions from residential buildings by up to 46% by 2030.

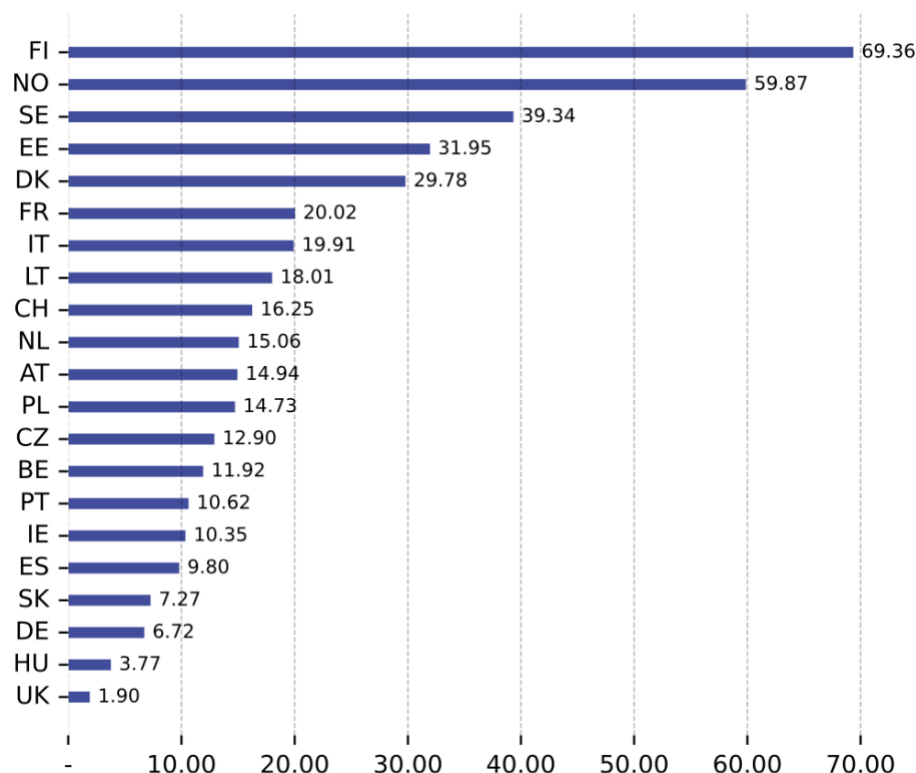
Against this backdrop, EU member states are revising their National Energy and Climate Plans (NECPs) to keep pace with the 'Fit for 55' package and the REPowerEU Plan. These plans, once updated, should fully recognize the potential and significance of heat pumps in achieving the broader decarbonization objectives.

This document presents an analysis of heat pump measures and targets outlined within the NECPs of EU member states, prioritizing countries with the lowest market share of heat pumps per 1000 households and gradually progressing to those with the highest adoption rates. In addition, in its final chapter, it provides recommendations aimed at accelerating the adoption of heat pumps across all member states, in line with the objectives of the EU Heat Pump Accelerator.

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# Selection of focus countries



Heat pump sales 2022 per 1000 households. Source: 2023 Market Report, EHPA.

The graph displays heat pump sales in 2022 per 1,000 households. Higher percentages indicate mature markets, while lower percentages suggest room for development and increased sales potential. There are roughly three groups of countries. The top group is comprised of Finland, Norway, Sweden, Estonia and Denmark, which all display sales of over 30 units per 1 000 households. A second group ranges from 10 units sold per 1 000 households in Spain to 22 in Italy. Finally, the lagging four countries -Germany, Hungary, Slovakia, and United Kingdom- are all characterised by very low market shares of heat pumps.

Following this indicator, and the Draft NECPs available to date, the next section presents an analysis of the subsequent countries: Hungary, Slovakia, Spain, Portugal, Netherlands, Lithuania, and Italy.

# Hungary

## Decarbonization dimension - Renewable energy trajectories

In Hungary's NECP, there is a clear commitment to increasing the share of renewable energy in various sectors, and a target set to reach at least 29 % of renewable energy sources in gross final consumption of energy<sup>1</sup>.

For heating and cooling, the plan outlines a strategy to increase the share of renewables by 1 percentage point between 2021 and 2025, followed by at least 1.3 percentage points per year between 2026 and 2030. Additionally, there's a specific goal to raise the share of renewable energy, residual heat, and waste cooling in district heating by 2.2 percentage points annually<sup>2</sup>.

Furthermore, the plan outlines a transition strategy for heating, with the aim to reduce the share of natural gas to 50% by 2030<sup>3</sup>, using renewable and waste heat technologies.

## Renewable energy measures and policies

The NECP of Hungary underscores the importance of heat pumps in individual heating and advocates for their expansion. Heat pumps are considered a favorable solution for heating, and their deployment is prioritized. However, it is noted that before their rapid expansion, it's appropriate to consider factors such as the urban landscape and noise exposure of outdoor units of heat pumps.

The plan also supports the use of heat pumps in thermally upgraded buildings, aiming to double existing geothermal energy by 2030. The role of heat pumps in the broader electricity system is mentioned, indicating an interest in their integration into the energy grid<sup>4</sup>.

## Financial support for heat pumps

The plan concentrates on various programs and priority axes related to renewable energy production, emphasizing electricity generation and sustainable energy sources<sup>5</sup>. However, it does not specify any financial support or incentives exclusively targeted at heat pumps.

## Other elements of the decarbonization dimension

The section on the phase-out of fossil fuel subsidies is blank<sup>6</sup>, indicating a lack of information or commitment in this regard within the NECP.

## Energy efficiency obligation schemes and alternative measures

Heat pumps are not explicitly mentioned or discussed in the NECP's section on obligation schemes and alternative measures<sup>7</sup>. The focus is primarily on a range of energy efficiency measures, programs, and policies, including energy efficiency obligations, renovation programs, energy inspections, grants for energy efficiency and production investments, and other initiatives aimed at improving energy efficiency in buildings and industries.

<sup>1</sup> Page 25, HU NECP (English version), June 2023

<sup>2</sup> Page 42, HU NECP (English version), June 2023

<sup>3</sup> Page 75, HU NECP (English version), June 2023

<sup>4</sup> Page 74, HU NECP (English version), June 2023

<sup>5</sup> Pages 76-79, HU NECP (English version), June 2023

<sup>6</sup> Page 84, HU NECP (English version), June 2023

<sup>7</sup> Pages 84-88, HU NECP (English version), June 2023

## Overall assessment of Hungary's Draft NECP

- ⊕ Hungary's NECP sets clear targets for increasing renewable energy in various sectors, including heating and cooling.
- ⊕ The plan recognizes heat pumps as a favourable solution for heating and advocates for their expansion, especially in thermally upgraded buildings.
- ⊕ Hungary expresses interest in integrating heat pumps into the broader electricity system, indicating a forward-looking approach.
- ⊕ Natural gas will no longer be supported in EU-funded building renovation programmes.
  
- ⊖ While the plan emphasizes renewable energy programs, the extent of foreseen financial support including grants and subsidized loans are very limited, and it does not specify dedicated financial support for heat pumps.
- ⊖ The NECP lacks a commitment to phase out fossil fuel boilers and to gradually reduce the penetration of fossil fuels in residential heating.
- ⊖ Heat pumps are not explicitly addressed in the NECP's section on energy efficiency obligation schemes and alternative measures, which focuses primarily on other initiatives.
- ⊖ There are no specific incentives for households or small and medium-sized enterprises (SMEs) to install heat pumps instead of fossil fuel boilers.
- ⊖ The National Energy Strategy has not been modified concerning the foreseen growth of heat pump penetration in residential sector, with only 100,000 new heat pump installations determined by 2030.
- ⊖ Recovery and Resilience Facility (RRF) funds previously programmed for energy-poor households, including a combined photovoltaics (PV) and heat pump installation subsidy scheme, have been withdrawn and the remaining funds have been reallocated to PV installations only.

In the view of the above, we propose the following recommendations:

- Define and specify detailed means and tools to achieve the objectives and targets set out in the NECP.
- Establish clear end-dates for the installation of fossil fuel-only boilers in new and existing homes.
- Outline a plan to gradually phase out current high subsidies for households that use fossil fuels, particularly natural gas, which compensate for energy bills at a consumption flat rate limit<sup>8</sup>.
- Ensure that there are specific support schemes or incentives for vulnerable households to adopt heat pumps.
- Consider the implementation of financial support programs and incentives exclusively targeted at heat pumps to encourage their adoption and rapid expansion.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.

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<sup>8</sup> HUF 2000 billion were allocated to fossil fuel price compensation in the HU budget for 2022 and 2023, and HUF 1000 billion foreseen for 2024; mainly for the residential sector, but SMEs are also included in the compensation schemes.

# Slovakia

## Decarbonization dimension - Renewable energy trajectories

The NECP Draft of Slovakia proposes a target for the share of energy from renewable sources in gross final consumption of energy of 32% by 2030<sup>9</sup>.

In relation to renewable energy trajectories for heating and cooling, the Slovak NECP outlines a progressive target to increase the share of renewable energy sources (RES) in the heat and cold production sector from 2021 to 2030. The overall goal is to achieve a sectoral share of 28,3% of RES by 2030<sup>10</sup>. Renewable energy from heat pumps, including Aerothermal, Geothermal, and Hydrothermal, are projected to contribute to these goals<sup>11</sup>.

### Renewable energy measures and policies

The Slovak NECP primarily focuses on existing policies aimed at increasing the share of renewables in energy consumption and reducing the use of fossil fuels.

The plan also discusses various measures aimed at promoting renewable energy and sustainability. Although heat pumps are not explicitly mentioned, some policies, such as support for small-scale electricity and heat generation<sup>12</sup> installations and the creation of a support mechanism for increasing the share of RES in the heating sector<sup>13</sup>, could indirectly support heat pump adoption for heating and cooling purposes.

Despite the supportive environment for renewable heating and cooling solutions, heat pumps are not explicitly highlighted in the legislative and regulatory measures mentioned in the section.

### Financial support for heat pumps

The NECP discusses financial support for renewable energy technologies and efficient district heating systems and mentions financial support for RES in the business and household sector<sup>14</sup>. However, it does not specify any dedicated mechanism or program for heat pumps.

The plan also mentions operational support to produce heat from RES for the construction of new heat generators using various RES technologies such as biomass, biogas, biomethane, geothermal, solar energy, aerothermal, geothermal, and hydrothermal energy used in heat pumps<sup>15</sup>. Yet, it does not specify financial support dedicated exclusively to heat pumps.

### Other elements of the decarbonization dimension

The plan mentions the commitment to decreasing support for electricity production from domestic coal through the Action Plan for the Transformation of the Coal Region of Upper Nitra, which outlines a timeframe for the gradual closure of three out of four mining fields<sup>16</sup>.

### Energy efficiency obligation schemes and alternative policy measures

The NECP outlines various energy efficiency measures and programs, particularly focusing on building renovations and energy savings<sup>17</sup>. However, it does not specify measures related to heat pumps in this context.

<sup>9</sup> Page 54, SK NECP (English version), June 2023

<sup>10</sup> Pages 54-55, SK NECP (English version), June 2023

<sup>11</sup> Page 56, SK NECP (English version), June 2023

<sup>12</sup> Page 142, SK NECP (English version), June 2023

<sup>13</sup> Page 147, SK NECP (English version), June 2023

<sup>14</sup> Page 142, SK NECP (English version), June 2023

<sup>15</sup> Page 150, SK NECP (English version), June 2023

<sup>16</sup> Page 160, SK NECP (English version), June 2023

<sup>17</sup> Page 162, SK NECP (English version), June 2023

## Overall assessment of Slovakia's Draft NECP

- ⊕ Slovakia's NECP sets clear targets for increasing the share of renewable energy, including in the heating and cooling sector, showing commitment to cleaner energy sources.
- ⊕ The plan discusses policies that indirectly support heat pump adoption for heating and cooling.
- ⊕ Slovakia's NECP acknowledges heat pumps for their ability to significantly reduce the cost of heat production.
  
- ⊖ The NECP does not mention specific measures and policies targeted at heat pumps.
- ⊖ The NECP lacks specific details or dedicated mechanisms for financial support for heat pumps, despite their potential contribution to renewable heating and cooling.
- ⊖ Heat pumps are not explicitly mentioned or discussed in the NECP's section on energy efficiency obligation schemes and alternative measures, focusing primarily on other energy efficiency initiatives.

In the view of the above, we propose the following recommendations:

- Consider integrating heat pumps into existing policies aimed at increasing the share of renewables in energy consumption.
- Ensure that there are specific support schemes or incentives for vulnerable households to adopt heat pumps.
- Create a dedicated financial support mechanism or program specifically for heat pumps. While operational support for heat production from RES is mentioned, allocate resources exclusively for heat pump adoption, including grants, subsidies, or incentives.
- Incorporate heat pumps as recognized energy-efficient technologies within energy efficiency obligation schemes and other relevant measures.
- Clearly outline a plan for the phase-out of fossil fuel subsidies.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.

# Spain

## Decarbonization dimension - Renewable energy trajectories

The NECP sets clear targets for the share of renewables in electricity, heating and cooling, and transport. By 2030, renewables are expected to account for 48% of final energy use. Notably, the contribution of heat pumps is projected to increase by 177% compared to 2020<sup>18</sup>.

## Renewable energy measures and policies

In the Spanish NECP there isn't a dedicated measure solely focused on heat pump deployment. Instead, heat pumps are integrated into broader measures.

It promotes decarbonization in the industrial sector through decentralized renewable energy generation and self-consumption, and encourages the use of direct renewables like biomass, solar thermal, and heat pumps, offering specific support schemes<sup>19</sup>.

The NECP aims to accelerate the deployment of renewable thermal energy sources across all economic sectors, including heat pumps.

## Financial support for heat pumps

The NECP mentions the promotion of direct renewables, including heat pumps, in various sectors. Specific support plans are proposed to encourage the adoption of renewable thermal energy sources in the industrial and residential sectors<sup>20</sup>.

## Other elements of the decarbonization dimension

The NECP does not explicitly outline a phase-out plan for fossil fuel subsidies. Instead, it emphasizes energy efficiency measures, the development of native renewable energy sources, and a reduction in energy dependency on imported fossil fuels.

In addition, it is worth noting that it is mentioned that Spain may consider adapting the fiscal framework to incentivize electrification and the use of renewable thermal energy. This could include applying reduced Value Added Tax (VAT) rates to small-scale equipment, aiming to reduce indirect subsidies for fossil fuels<sup>21</sup>.

## Energy efficiency obligation schemes and alternative measures

Within the section on energy efficiency obligation schemes and alternative measures, the Spanish NECP incorporates measures to promote heat pumps and renewable energy sources across residential, tertiary, agricultural and fishing sectors<sup>22</sup>. It emphasizes the development of district heating and cooling networks in the residential and tertiary sectors to facilitate the use of renewable and efficient energy sources for air conditioning. In the agricultural and fishing sector, the NECP focuses on energy efficiency improvements, including the adoption of heat pumps, to reduce energy consumption and enhance efficiency in farms and agricultural machinery. These measures align with broader efforts to reduce carbon emissions and improve sustainability in various sectors of the economy.

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<sup>18</sup> Page 402, ES NECP (English version), June 2023

<sup>19</sup> Pages 124-127, ES NECP (English version), June 2023

<sup>20</sup> Pages 125-126, ES NECP (English version), June 2023

<sup>21</sup> Page 127, ES NECP (English version), June 2023

<sup>22</sup> Pages 184-243, ES NECP (English version), June 2023



## Overall assessment of Spain's Draft NECP

- ⊕ Spain's NECP sets clear targets for the share of renewables in various sectors, including heating and cooling.
- ⊕ The plan promotes the use of heat pumps as part of broader measures for decarbonization, including in the industrial sector, decentralized renewable energy generation, self-consumption, and support for renewable thermal energy sources.
- ⊕ Specific support plans are mentioned to encourage the adoption of renewable thermal energy sources, including heat pumps, in the industrial and residential sectors.
- ⊕ The NECP includes measures to promote heat pumps and renewable energy sources across various sectors.
  
- ⊖ While heat pumps are integrated into broader measures, there isn't a dedicated measure or financial incentive solely focused on heat pump deployment in the NECP.
- ⊖ Spain's NECP does not include a detailed plan to phase out fossil fuels.

In the view of the above, we propose the following recommendations:

- Establish clear end-dates for the installation of fossil fuel-only boilers in new and existing homes.
- Ensure that there are specific support schemes or incentives for vulnerable households to adopt heat pumps.
- Consider the implementation of financial support programs and incentives exclusively targeted at heat pumps to encourage their adoption and rapid expansion.
- Clearly outline a plan for the phase-out of fossil fuel subsidies.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.

# Portugal

## Decarbonization dimension - Renewable energy trajectories

Portugal's NECP outlines progressive targets to increase the share of renewable energy in heating and cooling. By 2030, the plan aims to achieve significant growth in renewable energy usage in this sector, with an ultimate goal of 47% by 2030, in contrast with the previous set target of 38%<sup>23</sup>.

The plan emphasizes the importance of technologies such as heat pumps in achieving these targets. Notably, it promotes heat pumps containing natural refrigerants to reduce the use of fluorinated gases<sup>24</sup>. The plan also provides a detailed breakdown of the expected development of various technologies in the heating and cooling sector by 2030 to meet these targets. In terms of heat pumps, the expected development is from 813 ktoe in 2025 to 854 ktoe by 2030<sup>25</sup>.

## Renewable energy measures and policies

In terms of policies, two measures aimed at promoting heat pumps and efficient renewable energy use in heating and cooling systems across residential, industrial, and service sectors can be highlighted:

- Renovation of heating and cooling systems from renewable energy sources: Encourage the replacement of outdated systems with more efficient and renewable energy systems. It promotes the use of heat pumps for air quality systems and ambient air heating and cooling, facilitating a transition to energy-efficient heating and cooling methods. The time frame for this measure is 2020-2030<sup>26</sup>.
- Development of a National Action Plan for Heat Pumps: This new measure plans to accelerate the adoption of heat pumps in residential and industrial settings, aligning with the EU Heat Pump Action Plan. The time frame for this measure is 2020-2030<sup>27</sup>.

## Financial support for heat pumps

While the NECP provides a comprehensive overview of financial support, including European, public, and private funds and programs, it does not specifically mention dedicated financial support for heat pumps<sup>28</sup>.

## Other elements of the decarbonisation dimension

The plan outlines a phased-out process for subsidies related to coal for electricity generation, reinforcing Portugal's commitment to reduce harmful subsidies and promote carbon levies. Revenues generated from this process are directed toward decarbonization projects and initiatives<sup>29</sup>.

## Energy efficiency obligation schemes and alternative policy measures

The NECP does not include any specific measures or points related to heat pumps within the section on energy efficiency obligation schemes and alternative policy measures.

## Overall assessment of Portugal's Draft NECP

- ⊕ Portugal's NECP sets ambitious targets for increasing the share of renewable energy in heating and cooling.

<sup>23</sup> Page 37, PT NECP (English version), June 2023

<sup>24</sup> Page 41, PT NECP (English version), June 2023

<sup>25</sup> Page 45, PT NECP (English version), June 2023

<sup>26</sup> Page 94, PT NECP (English version), June 2023

<sup>27</sup> Ibid.

<sup>28</sup> Pages 210-222, PT NECP (English version), June 2023

<sup>29</sup> Page 11, PT NECP (English version), June 2023

- ⊕ The plan recognizes the importance of heat pumps and promotes their use as a key technology in achieving renewable energy goals.
- ⊕ Portugal has outlined specific measures to promote the adoption of heat pumps in various sectors.
- ⊕ The plan includes a phased-out process for subsidies related to coal for electricity generation.
- ⊖ While the NECP mentions various sources of financial support, it does not specify any dedicated financial support mechanisms for heat pumps.
- ⊖ Heat pumps are not explicitly mentioned in the NECP's section on energy efficiency obligation schemes and alternative policy measures.

In the view of the above, we propose the following recommendations:

- Continue the phased-out process of subsidies related to coal for electricity generation, directing the generated revenues toward decarbonization projects and initiatives, including support for clean heating solutions like heat pumps.
- Ensure that there are specific support schemes or incentives for vulnerable households to adopt heat pumps.
- Consider the implementation of financial support programs and incentives exclusively targeted at heat pumps to encourage their adoption and rapid expansion.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.

# Netherlands

## Decarbonization dimension - Renewable energy trajectories

The Dutch Draft NECP sets a target of achieving a 30.5% share of renewable energy by 2030<sup>30</sup>. The government is considering raising the binding heat target from 1.1% to 1.3% through the utilization of waste heat. The plan highlights a growth of 37% in heat pump installations in 2021, mainly air-to-air heat pumps, with over 1.7 million installations installed, indicating a 25% increase since 2020<sup>31</sup>. The share of renewable energy is expected to rise from 13.0% in 2021 to 30.5% by 2030, and 44.6% by 2040 with current policies<sup>32</sup>.

## Renewable energy measures and policies

Within the Dutch Draft NECP, there is a specific innovation policy focused on creating a CO<sub>2</sub>-free built environment by promoting sustainable heating and cooling technologies, including heat pumps. The program envisions smart, compact, cost-efficient heat pumps, efficient delivery, ventilation, and tap water systems, smart thermal batteries, low/mid-temperature heat grids, large-scale thermal storage, and geothermal solutions<sup>33</sup>.

## Financial support for heat pumps

The NECP outlines various financial supports for heat pumps, including grants for interventions like heat pumps and solar water heaters, targeting both businesses and homeowners, while also providing affordable financing options for low to middle-income individuals to enhance energy efficiency and promote the adoption of heat pump technology<sup>34</sup>.

## Other elements of the decarbonization dimension

The plan outlines a phase-out of coal in electricity production by 2030, explores nuclear energy's role, and allocates funds from the Climate Fund for renewable energy carriers like hydrogen and green gas<sup>35</sup>.

## Energy efficiency obligation schemes and alternative measures

The NECP mentions energy efficiency obligation schemes and alternative policy measures, specifically under Article 7a and 7b of Directive 2012/27/EU. However, there is no specific mention of measures related to heat pumps<sup>36</sup>.

## Overall assessment of Netherlands' Draft NECP

- ⊕ The Dutch Draft NECP sets clear targets for increasing the share of renewable energy in heating and cooling.
- ⊕ The plan highlights a significant growth in heat pump installations, with a 37% increase in 2021, indicating a strong trend toward heat pump adoption.
- ⊕ There is a specific innovation policy aimed at creating a CO<sub>2</sub>-free built environment by promoting sustainable heating and cooling technologies, including heat pumps.
- ⊕ The NECP outlines various financial supports for heat pumps, including grants and affordable financing options.
- ⊕ The Dutch Draft NECP outlines a phase-out of coal in electricity production by 2030.

<sup>30</sup> Page 29, NL NECP (English version), June 2023

<sup>31</sup> Page 30, NL NECP (English version), June 2023

<sup>32</sup> Page 112, NL NECP (English version), June 2023

<sup>33</sup> Page 51, NL NECP (English version), June 2023

<sup>34</sup> Pages 74-76, NL NECP (English version), June 2023

<sup>35</sup> Pages 80-81, NL NECP (English version), June 2023

<sup>36</sup> Pages 81-82, NL NECP (English version), June 2023

- ⊖ Heat pumps are not explicitly mentioned in the NECP's section on energy efficiency obligation schemes and alternative policy measures.

In the view of the above, we propose the following recommendations:

- Explore options to reduce taxes, levies, and VAT rates on heat pumps and their installation to make them more cost-competitive compared to fossil fuel-based heating systems.
- Address the electricity-to-gas price ratio to facilitate heat pump deployment by considering policies that make electricity more affordable for heating applications.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.
- Expand existing financial mechanisms to support a broader range of heat pump technologies.
- Incorporate heat pumps as recognized energy-efficient technologies within energy efficiency obligation schemes and other relevant measures.

# Lithuania

## Decarbonization dimension - Renewable energy trajectories

Lithuania has set ambitious targets for renewable energy sources (RES) across various sectors. By 2030, the country aims to achieve 55% RES in final energy consumption and 100% RES total electricity consumption<sup>37</sup>. In the heating and cooling sector, Lithuania targets a RES share of 90% by 2030, with a primary focus on local biofuels<sup>38</sup>.

## Renewable energy measures and policies

Lithuania has implemented a range of measures to promote heat pumps and boost energy efficiency across sectors. These initiatives encompass amendments to laws supporting long-term investments in heat supply systems, with a focus on heat pumps<sup>39</sup>. Additionally, there are existing measures promoting renewable energy sources (RES) in public and residential buildings, including solar power.

In the heating and cooling sector, policies aim to increase RES usage in district heating, incorporating solar technologies and heat storage, while also modernizing heat accounting systems and optimizing heat production with heat pumps and solar commuting systems<sup>40</sup>.

In the industrial sector, Lithuania plans to replace fossil fuel boilers with alternative fuels like heat pumps<sup>41</sup>. In the household sector, efforts include modernizing buildings, replacing inefficient equipment, and promoting biofuel boilers and heat pumps, with a goal of replacing 50,000 inefficient boilers with heat pumps by 2030<sup>42</sup>.

## Financial support for heat pumps

Financial support for heat pumps in Lithuania is part of a broader strategy to promote renewable energy in various sectors. While specific financial support mechanisms for heat pumps are not explicitly detailed, the overall approach includes several programmes and EU funds.

Notably, Lithuanian NECP also mentions measures in place to assist vulnerable groups, addressing energy poverty. These measures encompass reimbursements for heating and water costs, support for renovating multi-apartment buildings to improve energy efficiency, and other initiatives aimed at enhancing energy efficiency and affordability<sup>43</sup>.

## Other elements of the decarbonization dimension

Lithuania is gradually reducing energy subsidies and market distortions in favor of fossil fuels. Thirteen energy subsidies are stated for phase-out by 2026<sup>44</sup>.

## Energy efficiency obligation schemes and alternative measures

Lithuania's NECP highlights the country's efforts in pursuing energy efficiency measures to meet a binding end-use energy savings target by 2030. These efforts include renovating multi-apartment buildings, individual dwellings, and public buildings, aligning with energy efficiency obligation schemes and alternative measures outlined in the Energy Efficiency Directive. However, heat pumps are not explicitly mentioned as part of these efforts<sup>45</sup>.

<sup>37</sup> Page 35, LT NECP (English version), June 2023

<sup>38</sup> Page 37, LT NECP (English version), June 2023

<sup>39</sup> Page 38, LT NECP (English version), June 2023

<sup>40</sup> Page 126, LT NECP (English version), June 2023

<sup>41</sup> Page 84, LT NECP (English version), June 2023

<sup>42</sup> Page 188, LT NECP (English version), June 2023

<sup>43</sup> Page 55, LT NECP (English version), June 2023

<sup>44</sup> Page 139, LT NECP (English version), June 2023

<sup>45</sup> Pages 140-146, LT NECP (English version), June 2023

## Overall assessment of Lithuania's Draft NECP

- ⊕ Lithuania has set ambitious targets for renewable energy sources in various sectors, including the heating and cooling sector.
- ⊕ The country has implemented a range of measures to promote heat pumps and enhance energy efficiency.
- ⊕ The NECP mentions measures in place to assist vulnerable groups, addressing energy poverty.
- ⊕ Lithuania is gradually reducing energy subsidies and market distortions in favour of fossil fuels.
  
- ⊖ The NECP does not explicitly mention specific financial support mechanisms for heat pumps.
- ⊖ Heat pumps are not explicitly mentioned as part of the country's energy efficiency obligation schemes and alternative measures.

In the view of the above, we propose the following recommendations:

- Establish clear end-dates for the installation of fossil fuel-only boilers in new and existing homes.
- Consider the implementation of financial support programs and incentives exclusively targeted at heat pumps to encourage their adoption and rapid expansion.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.
- Incorporate heat pumps as recognized energy-efficient technologies within energy efficiency obligation schemes and other relevant measures.

# Italy

## Decarbonization dimension - Renewable energy trajectories

Italy has set ambitious renewable energy targets for 2030, aiming to cover 40.5% of its total energy consumption with renewables<sup>46</sup>. In the heating and cooling sector, renewables are targeted to cover 36.7%<sup>47</sup>.

The heating and cooling sector is crucial in achieving these goals<sup>48</sup>, with heat pumps expected to play a significant role due to their high performance. They will also contribute to renewable cooling<sup>49</sup>.

## Renewable energy measures and policies

The NECP provides information on various measures and incentives for renewable thermal energy sources. The measures related to heat pumps include<sup>50</sup>:

- **Tax Deductions:** Tax deductions are available for energy efficiency measures and building renovation projects, which also apply to thermal renewables. Under the Ecobonus, measures to install solar thermal installations, heat pumps, hybrid heat pump plants, heat pump water heaters and biomass plants are facilitated. The 'Bonus Casa' also allows the installation of solar thermal systems, heat pumps, hybrid heat pump systems, heat pump water heaters and biomass generators in buildings.
- **Conto Termico:** The Conto Termico is an incentive instrument to promote the production of renewable heat.
- **Certificati Bianchi:** The "White Certificates" mechanism also promotes energy savings and the use of high-efficiency cogeneration, including renewable installations. It includes the replacement of conventional heating systems such as fossil fuel boilers with heat pumps as part of energy efficiency projects.
- **Obligation to Integrate Renewable Sources:** New or deeply renovated buildings above 1.000 sqm, are required to use more than 60% of renewable energy to satisfy the buildings needs for heating, cooling and electricity (cumulate) and more than 60% for the domestic hot water.

## Financial support for heat pumps

The measures covered in the Draft NECP are of an economic nature and therefore provide for financial support, either in the form of incentive fees paid during the operation of the plant/intervention, as is typically the case in the electricity sector, or in the form of capital grants<sup>51</sup>.

## Other elements of the decarbonization dimension

The Draft NECP mentions Italy's commitments to eliminate inefficient fossil fuel subsidies, with a focus on gradually phasing them out. The plan includes identifying both direct and indirect fossil fuel subsidies, assessing their impacts, and considering possible forms of compensation. The

<sup>46</sup> Page 69, IT NECP (English version), June 2023

<sup>47</sup> Page 71, IT NECP (English version), June 2023

<sup>48</sup> Page 78, IT NECP (English version), June 2023

<sup>49</sup> Page 79, IT NECP (English version), June 2023

<sup>50</sup> Pages 187-201, IT NECP (English version), June 2023

<sup>51</sup> Page 201, IT NECP (English version), June 2023



objective is, according to the Draft NECP, to shift the tax burden away from polluting activities and towards cleaner alternatives. Italy has already initiated the process by eliminating five fossil fuel subsidies with identified inefficiencies and is set to review 18 specific subsidies with significant environmental impacts<sup>52</sup>.

### Energy efficiency obligation schemes and alternative measures

The Draft NECP outlines different mechanisms, and tax deductions, which support energy efficiency and renewable energy projects. Within those, Conto Termico, EcoBonus and Bonus Casa should be highlighted<sup>53</sup>. In this section, Conto Termico explicitly mentions heat pumps, while the other measures are linked to the technology in other contexts of the NECP.

### Overall assessment of Italy's Draft NECP

- ⊕ Italy has set clear and ambitious targets for renewable energy sources.
- ⊕ The Italian Draft NECP recognises heat pumps as a significant contributor to achieve the national targets.
- ⊕ The NECP outlines various measures and financial incentives for renewable thermal energy sources, encompassing tax deductions, financial support, and obligations to integrate renewables into buildings.
- ⊕ There is a clear commitment to gradually eliminate inefficient fossil fuel subsidies, aligning with the transition to cleaner energy sources.
  
- ⊖ The NECP discusses energy efficiency measures but could benefit from explicitly linking these efforts with heat pump utilization.

In the view of the above, we propose the following recommendations:

- Concentrate efforts and measures on electric heat pumps as primary heat pump technology due to their solid expansion in Italy<sup>54</sup>, while hybrid/gas-driven heat pump solutions have limited penetration in the country and manufacturers are scarce.
- Recognize the role of electric heat pumps in terms of energy savings and enhanced renewable energy use in buildings when compared to other (marginal) heat pump technologies, not only for residential buildings as presented in the Italian NECP but also for other uses such as public buildings and industrial applications. This is even more pertinent given the rapidly growing use of distributed and rooftop PV solar energy (and thus the rapid decarbonisation of the electricity vector).
- Quantify the expected penetration of heat pumps during the timeframe of the NECP and indicate how this will contribute to the achievement of the targets.
- Ensure that there are specific support schemes or incentives for vulnerable households to adopt heat pumps.
- Invest in workforce development programs to upskill heating professionals, with a specific focus on heat pump technology.
- Address the electricity-to-gas price ratio to facilitate heat pump deployment by considering policies that make electricity more affordable for heating applications.
- Simplify permitting procedures for small-scale residential heat pump installations, replacing permits with notification processes where feasible.

<sup>52</sup> Pages 222-226, IT NECP (English version), June 2023

<sup>53</sup> Pages 227-246, IT NECP (English version), June 2023

<sup>54</sup> Over 500,000 electric heat pumps were sold in 2022, an increase of 21% compared to the previous year.

# EHPA key recommendations on the assessment of the draft NECPs

## 1. Recognise the vital role of clean heating in all the 5 dimensions of the NECPs

The Regulation (EU) 2018/1999 mandates Member States to set out in their NECPs objectives, targets and contributions regarding decarbonization, renewable energy, energy efficiency, energy security, internal energy market and research, innovation, and competitiveness. The deployment of heat pumps would positively affect all these dimensions by contributing to replacing fossil fuel boilers with a more efficient<sup>55</sup> and sustainable<sup>56</sup> solution produced by European companies<sup>57</sup>. Despite its role, the heating sector has been devoted a relatively small role in the NECPs. The evaluation of the revision of the plans should take this into account.

## 2. Phase out fossil heating

- a. *Establish end-dates for the installation of fossil fuels only boilers in new and existing homes.* Up to now, only 10 countries in Europe have made plans to ban the installation of new oil and gas boilers in new and/or existing buildings. For instance, Austria introduced a ban from 2020 on the installation of oil/coal boilers in new homes and plans to ban them in existing building and a ban on oil and gas heaters in new buildings from 2023<sup>58</sup>. More countries should include such a ban in their integrated national plans.
- b. *End subsidies for fossil heating.* 15 European countries still provided subsidies for new fossil fuel domestic heating systems in 2022. In recent years, European countries have spent over €3 billion on fossil fuel heating subsidies. Despite its support to heat pumps, Italy remains the country with the highest fossil heating investments per capita, followed by Belgium, Bulgaria, Greece, and Poland direct over 45% of their subsidies towards fossil fuel systems.

## 3. Make clean heating economically attractive

- a. *Introduce measures to support the switch to clean heating.* Reducing taxes and levies on heat pumps, as well as on heat pump installation and electricity could reduce the operating costs for heat pumps with respect to fossil fuel boilers. In addition, Member states should introduce a reduced VAT <sup>59</sup>rate on the purchase and installation of heat pumps. For instance, Lithuania and Hungary have a 0% VAT rate on heat pumps.
- b. *Bring the electricity to gas price ratio at two to facilitate heat pump deployment.* The high cost of electricity compared to gas is still hindering investments in several Member States. Indeed, high investment costs would be more bearable if operational costs were significantly lower. In some countries (e.g., Belgium) electricity prices and taxes are so unfavourable compared to fossil fuel (gas), that heat pumps will not become cheaper without government action.
- c. *Establish dedicated financial schemes for heat pumps.* Investment costs for low-carbon heating and cooling systems such as heat pumps are still higher than for fossil fuel-

<sup>55</sup> 3 to 5 times more efficient than gas boilers.

<sup>56</sup> In countries with a low-carbon power mix, such as Sweden, France, Luxembourg and Finland, the operation of heat pumps is close to carbon-neutral.

<sup>57</sup> And A fast heat pump roll-out would make Europe less dependent on foreign energy imports by reducing gas demand in buildings by 40 per cent by 2030 compared to 2022 and reducing the EU's energy import bill by €60 billion over the same period.

<sup>58</sup> In April 2023, EHPA has released a [map of countries are banning fossil fuel heaters](#).

<sup>59</sup> In October 2023, EHPA published a [report on VAT rates and electricity in Europe](#).

based heating devices. This means financial support schemes are still necessary to remove the barriers to investment. Member states should offer incentives for consumers to make the most of the flexibility and renewable energy offered by heat pumps<sup>60</sup>. For instance, Finland gives grants up to up to €4,000 and tax deductions for the installation of heat pumps in new and renovated buildings.

- d. *Ensure that the Resilience and Recovery Funding (RRF) does not include heat generation through fossil fuels.* Whilst as a general rule such measures are not considered compliant with the 'Do Not Significant Harm' (DNSH) principle of the RRF, some exceptions for measures using natural gas in these areas can be made on a case-by-case basis.
- e. *Dedicate specific support for most vulnerable households.* This support may include grants, income-based subsidies, or direct incentives to help those most in need make the transition to more energy-efficient and sustainable heating solutions.

#### 4. Make it easier to consumers

- a. *Establish one-stop-shops for existing clean heating solutions.* Local "one-stop-shops" should support building owners and consumers to i) identify the most suitable clean heat solution (or combination of clean heat solutions) for their buildings, based on local heating and cooling assessments and ii) access towards available funding instruments.

#### 5. Remove administrative barriers

- a. *Improve permitting.* Wherever possible, national governments should replace permits with notification procedures in specific for small scale residential heat pumps.
- b. *Develop comprehensive, rational, and consistent heat planning.* A national strategy should serve as a general framework for local heating and cooling planning. At the EU level, nearly half of Member States lack local and cooling planning, which is essential to remove obstacles for local governments and optimize public investment.

#### 6. Skills and R&D

- a. *Collect data on the heat pump workforce.* Member States should contribute to the establishment of an EU database on the heat pump workforce, comprising data about the number of workers, the most requested skills and the skills that are still to be developed. These data will serve to quantify the gap between this, and the workforce needed to reach heat pump targets at a national and EU level.
- b. *Establish dedicated programmes to upskill heating professionals.* For instance, the lack of familiarity of installers with the technology hinders further deployment of heat pumps. Installers and other workers along the heat pump value chain should benefit from programmes which are effective and sustainable in terms of investment in time and resources.
- c. *Increase R&D funding to increase efficiencies in manufacturing, and to quickly scale heat pump capacities.* As showed by the 2020 EU wide assessment, this has been one of the deficient sectors of the first version of NEPCs. On the contrary, investments in R&D for clean tech is essential to reach EU decarbonization objectives. In the heat pump sector, it could enhance their deployment in district heating systems and industry.

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<sup>60</sup> In March 2023, EHPA mapped the [existing subsidies for residential heat pumps in Europe](#).