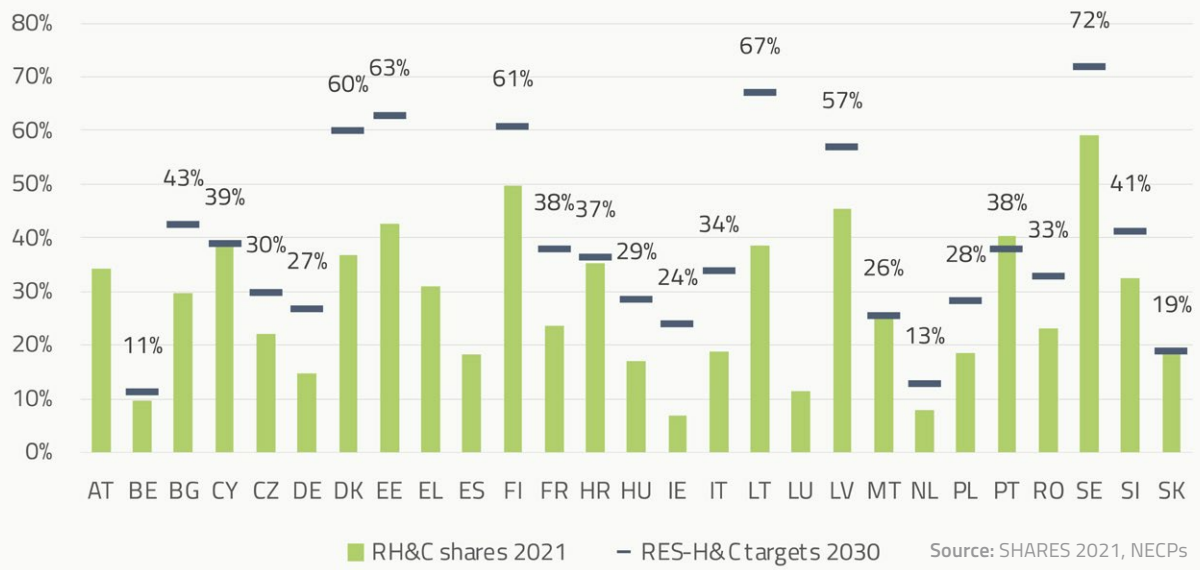
No Energy Security without Bioheat

Last winter and the resulting energy crisis will long be remembered in the European Union. The Russian invasion of Ukraine, coupled with the sanctions imposed on the Kremlin by the EU and its Member States, caused enormous price volatility and disrupted the complex energy supply chain that had been developed and reinforced over the past three decades. It sharply accentuated the need for the European Union to address its energy dependence. Reasserting the EU's energy independence can only be accomplished through cultivating and developing domestic, affordable, and secure, energy sources. Given its local origin, biomass used for bioheat plays a fundamental role in EU energy security, and its role and contribution are only likely to grow in the future EU energy mix. The development of the bioheat market should therefore be encouraged, especially through tailored policy measures aimed at modernization and efficiency.

Renewable energy share in the heating & cooling sector in 2021 and 2030 member states' objectives (in %)



In 2021, the heating sector accounted for nearly half of the final energy consumption in the EU. Naturally, northern Member States have a higher heat demand with the highest heat demand in Latvia (58%), the Netherlands (58%) and Finland (55%). Conversely, it was southern Mediterranean countries which had the lowest heating needs with the lowest demand in Malta (17%), followed by Greece (34%), and Spain (36%).

Geographical differences can also be seen in the share of renewable energy in the H&C sector, with the highest shares in the Nordics where Sweden, Denmark and Finland utilized 59%, 51% and 50% of renewable heat respectively. The rate was lowest in Ireland at only 7%, followed by the Netherlands with only 8% renewables and Belgium at 10%. Given the wide range of these shares, it is perhaps unsurprising that the 2030 targets established in the National Energy and Climate Plans (NECPs) also vary greatly. The countries with the highest shares of renewable heat tended to have set more ambitious energy targets, and the countries with the lowest shares tended to have the lowest targets. Some countries have set extremely ambitious targets, like Lithuania which aims to nearly double its 38% share to a 67% target.

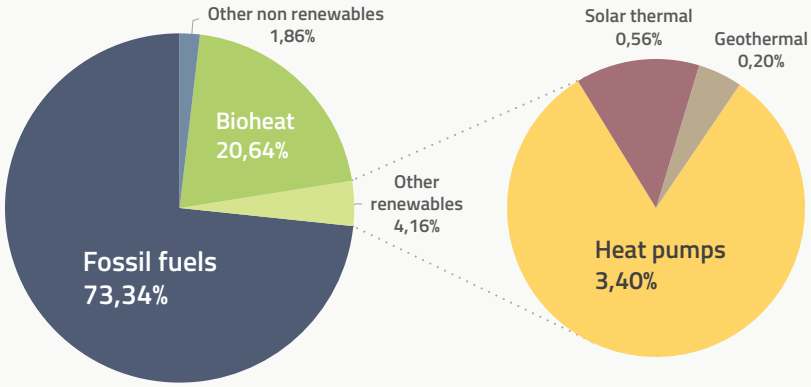
In 2021, about three fourths of EU-27 heating and cooling was produced by fossil fuels, accounting for approximately 73% of the total heat consumption. On the other hand, amongst the quarter of H&C produced by renewable sources, bioheat made up the largest share, namely 83% or 93.114 ktoe (of which 91% from solid biomass 5% from renewable municipal waste, 3% from biogases and 1% from liquid biofuels). This share corresponds to slightly more than 20% of the total H&C consumption.

Contribution of the different energy sources in heating and cooling in EU27 in 2021 (in %)*

Note: Other non-renewables are mainly non-renewable waste.

*Article 5 of Directive 2009/28/EC establishes the guidelines for Member States on calculating renewable energy from heat pumps from different heat pump technologies. Only renewable energy from heat pumps with a Seasonal Performance Factor (SPF) greater than 2,5 should be considered towards the target.

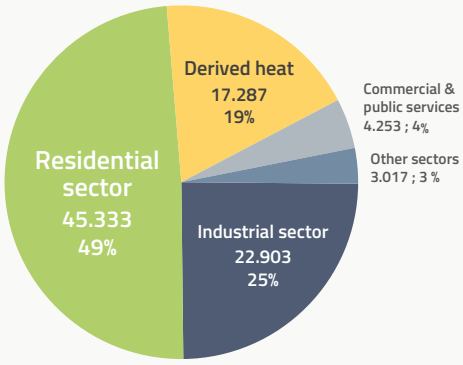
Source: Eurostat, SHARES 2021, Bioenergy Europe's calculation



To underscore how important bioheat's role is in renewables in the H&C sector, in three countries (Estonia, Latvia and Romania) bioheat was 100% of the renewable in H&C. In most of the Member States, bioheat makes up at least two-thirds of renewables in H&C with only Southern countries having a lower rate: Malta (9%), Cyprus (38%) and Greece (54%).

In terms of users, the residential sector accounted for almost half (49%) of the bioheat consumed which corresponds to 45.333 ktoe and it increased by approximately 3.000 ktoe compared to 2020. It is difficult to say with certainty, but this increase is likely due to the changes caused by the pandemic. The industrial sector was the second (25% of bioheat uses) followed by derived heat at 19% (which is primarily district heating). While the industrial sector experienced a slight yearly decrease, also probably caused by the pandemic, derived heat underwent an increase similar to the residential sector. The rest of the bioheat is used by the commercial and public services which accounted for 4%, and the remaining 3% by agriculture, fishing, and other minor sectors.

Total bioheat consumption in the different sectors in EU27 in 2021 (in ktoe, %)



Note: Other sectors include agriculture, fishing and not elsewhere specified. **Source:** Eurostat

The residential sector remained the predominant user of bioheat in most EU countries, most notably Hungary, Italy, and Romania. A significant group of countries have industry as major user of bioheat, among which Ireland (79%), Cyprus (68%) and Portugal (57%). Finally, only a few small countries use bioheat mostly in derived applications, such as Luxembourg (78%), Denmark (65%), and Lithuania (45%). Derived heat represented only a minor share in basically all Mediterranean countries, where warmer climates generally lead to a decrease in the use of district heating networks.

Policy Recommendations

1. A fossil fuel exit strategy should be introduced. In particular, subsidies should be immediately stopped, and fossil sources of energy should be progressively phased out.
2. The National Energy and Climate Plans (NECPs) must include a dedicated section with clear measures to promote renewable heat sources including sustainable bioheat.
3. Old heating systems must be replaced with modern ones, favouring those based on bioheat. In this context, energy labelling should encourage consumers to choose renewable over fossil options.
4. Funding must be mobilised to develop further local, sustainable, and affordable solutions like bioheat. This will enhance the EU energy independence and industrial competitiveness.