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Heat pumps versus boilers: taxes and running costs

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The EU has a target of at least 42.5% renewable energy consumption by 2030, up from 22% in 2022. To help reach it, many EU countries have introduced policies and incentives to boost uptake of clean energy technologies. Some of these incentives are fiscal, including reduced taxes on energy efficient heating systems, building insulation and appliances and products.

In this report, we focus on Value Added Tax (VAT) - a tax on the consumption of goods and services - in 30 European countries (EU-27 + Norway, Switzerland, UK). Ensuring VAT rates on renewable energy products like heat pumps are zero or close to it makes them more affordable and so boosts uptake.

The report shows that there are **nine EU Member States, plus the UK, which set a lower VAT rate on heat pumps** as of November 2024.

To better understand the choice consumers have in each country, we also looked at the VAT on the main 'competitor' of heat pumps: boilers. Across Europe, VAT rates on both heat pumps and boilers vary widely: VAT on gas boilers is 8% in Poland but 26% in Finland. VAT on heat pumps is 9% in Ireland but 25% in Norway.

In terms of the countries with **lower VAT on heat pumps than on gas boilers, this is the case only in six countries** of the 30 examined: Belgium, France, Ireland, Portugal, Romania and the UK. In all the others, it is the same rate.

What about running costs? Here the comparison is between electricity, used by most heat pumps, and the fossil fuels (most often, gas) that boilers burn.

To make the running costs of the heat pump competitive, the cost of electricity should be at most twice the price of gas. This is because heat pumps use a lot less electricity than boilers do gas to produce the same amount of heat.

However, **only in four out of 25 European countries is electricity under twice the price of gas** – in the 21 others for which both gas and electricity prices are available, it is more than double (2024 figures).

As for VAT on gas and electricity, this is the same everywhere except Latvia and Spain, where the rate on electricity is lower.

Overall, this report shows that nearly all European countries can do a good deal more in terms of fiscal measures to boost the uptake of heat pumps and so help decarbonisation, energy efficiency and energy sovereignty by reducing fossil fuel use.













The European Heat Pump Association urges the Member States to lower the electricity to gas price ratio to no more than double, and to reduce VAT on all types of heat pump to 5%, the minimum currently allowed under EU law. EHPA also calls on the EU to change the law so heat pumps VAT on heat pumps can be zero.

The European Commission can kickstart this process via its upcoming **the Electrification Action Plan, the Action Plan for Affordable Energy Prices, the revision of the Energy Taxation Directive and Citizens' Energy Package.**

Doing so will make the cleanest solutions for heating and cooling also the economically most attractive to end-users, including in industry.

*This report was updated in January 2025 to correct the electricity price numbers. Prior to this, they did not include taxes.
The gas price numbers have not changed.*










Heat pumps versus boilers: taxes and running costs - details per country

Country	Standard VAT rate	VAT on gas boilers	VAT rate on heat pumps	VAT rate on gas	VAT rate on electricity	Electricity price* € per kWh	Gas price* € per kWh	Comments
 Austria	20%	⊖ 20%	⊖ 20%	⊖ 20%	⊖ 20%	0.273	0.138	
 Belgium	21%	⊖ 21%	⬇ 6%	⬇ 6%	⬇ 6%	0.335	0.080	<ul style="list-style-type: none"> For buildings older than 10 years: a VAT rate of 6% applies to all renovation-related work, including heat pump installations, if the building is for residential use and the work is performed by a certified installer. For buildings less than 10 years old: a temporary VAT rate of 6% applies to heat pumps and their installation (except for hybrid heat pumps) until December 31, 2024.
 Bulgaria	20%	⊖ 20%	⊖ 20%	⊖ 20%	⊖ 20%	0.119	0.062	
 Croatia	25%	⊖ 25%	⊖ 25%	⬇ 5%	⬇ 13%	0.147	0.045	
 Czech Republic	21%	⊖ 21%	⬇ 12%	⊖ 21%	⊖ 21%	0.338	0.109	
 Denmark	25%	⊖ 25%	⊖ 25%	⊖ 25%	⊖ 25%	0.371	0.122	
 Estonia	22%	⊖ 22%	⊖ 22%	⊖ 22%	⊖ 22%	0.230	0.069	
 Finland	26%	⊖ 26%	⊖ 26%	⊖ 26%	⊖ 26%	0.247		
 France	20%	⬇ 10%	⬇ 5.5%	⊖ 20%	⊖ 20%	0.278	0.118	<ul style="list-style-type: none"> The reduced VAT rate on heat pumps (5.5%) applies to air/water and water/water heat pumps as part of building renovation. On other heat pumps and for new build, the VAT rate is 20%. VAT on electricity: a reduced VAT rate of 5.5% applies to the subscription fee, while 20% applies to the variable portion.
 Germany	19%	⊖ 19%	⊖ 19%	⊖ 19%	⊖ 19%	0.395	0.120	
 Greece	24%	⊖ 24%	⊖ 24%	⬇ 6%	⬇ 6%	0.217	0.072	
 Hungary	27%	⊖ 27%	⊖ 27%	⊖ 27%	⊖ 27%	0.109	0.028	

*Consumer price including taxes, first half 2024. Source: Eurostat. For UK: Department for Energy Security and Net Zero. For Switzerland: Swiss Federal Office of Energy.

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 Ireland	23%	↓ 13.5%	↓ 9%	↓ 9%	↓ 9%	0.374	0.127	
 Italy	22%	= 10%	= 10%	= 10%	= 10%	0.327	0.114	<ul style="list-style-type: none"> • Lower VAT rate (10%): applies to a portion of the total amount of home renovation costs. • VAT on gas * 10% VAT: applied to residential gas consumption up to 480 mc/year. * 22% VAT: applied to the portion of consumption above 480 mc/year.
 Latvia	21%	= 21%	= 21%	€1.65/MWh	€1.01/MWh	0.255	0.092	
 Lithuania	21%	= 21%	= 21%	= 21%	= 21%	0.232	0.074	
 Luxembourg	17%	↓ 14%	↓ 14%	↓ 8%	↓ 8%	0.203	0.088	
 Malta	18%	= 18%	= 18%	= 18%	↓ 5%	0.126		
 Netherlands	21%	= 21%	= 21%	= 21%	= 21%	0.270	0.163	
 Norway	25%	= 25%	= 25%	= 25%	= 25%	0.199		Households in northern Norway exempted from VAT on electricity.
 Poland	23%	↓ 8%	↓ 8%	= 23%	= 23%	0.199**	0.087**	<ul style="list-style-type: none"> • Reduced VAT rate on heat pumps (8%): applies to social housing for single-family buildings up to 250m2 and flats in multi-family housing up to 150m2. It covers construction, renovation, modernisation, and adaptation services. Reduced VAT applies when the device is supplied and installed as part of the installer's service. If purchased directly by the user, 23% VAT applies. • VAT on gas boilers: the 8% reduced rate applies if part of a service related to individual houses under the social housing programme; and if the device is supplied and installed as part of the installer's service. If purchased directly by the user, 23% VAT applies.

** Price for second half of 2024.

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 Portugal	23%	= 23%	= 6%	= 6%	↓ 6%	0.243	0.119	VAT on electricity: * 6% VAT: for consumers with contracted power up to 3.45 kVA or monthly consumption not exceeding 100 kWh with contracted power up to 6.9 kVA. Large families (5+ members) with consumption not exceeding 150 kWh and contracted power of 6.9 kVA qualify for 6% VAT. * 23% VAT: applied to consumers exceeding the above limits. VAT on gas: * 6% VAT: for consumers whose gas consumption does not exceed 10,000 m³ per year at low pressure. * 23% VAT: applied to higher levels of gas tariffs and taxes (levels 2, 3, and 4).
 Cyprus	19%	= 19%	= 19%	= 19%	= 19%	0.324		
 Romania	19%	= 19%	↓ 9%	= 19%	= 19%	0.188	0.058	
 Slovakia	20%	= 20%	= 20%	= 20%	= 20%	0.181	0.059	From 2025, the standard VAT rate will be 23% and 19% for electricity.
 Slovenia	22%	↓ 9.5%	↓ 9.5%	= 22%	= 22%	0.168	0.097	
 Spain	21%	= 21%	= 21%	= 21%	↓ 10%	0.208	0.082	
 Sweden	25%	= 25%	= 25%	= 25%	= 25%	0.243	0.176	
 Switzerland	8.1%	= 8.1%	= 8.1%	= 8.1%	= 8.1%	0.362***	0.144****	
 UK	20%	= 20%	↓ 0%	↓ 5%	↓ 5%	0.272	0.079	<ul style="list-style-type: none"> VAT on heat pumps: a zero VAT rate applies until 2027, with specific conditions available in the official website. VAT on gas boilers: if the installation of the gas boiler is grant-funded it qualifies for a reduced VAT rate of 5%; otherwise, the standard VAT rate of 20% applies.

*** Price for 2024. Electricity prices in Switzerland are [fixed](#) annually.

**** Price for October 2024.

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The **European Heat Pump Association (EHPA)** represents the European heat pump sector. Our 230 members include heat pump and component manufacturers, research institutes, universities, testing labs and energy agencies.


EHPA advocates, communicates and provides policy, technical and economic expertise to European, national and local authorities, and to our members.

We organise high level events and manage or partner in multiple projects.

We work to shape EU policy that allows the heat pump sector to flourish, and to become the number one heating and cooling choice by 2030. Heat pumps will be a central part of a renewable, sustainable and smart energy system in a future decarbonised Europe.

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