Ramping up Heat Pumps in Moldova

A Roadmap

International Energy Agency

Co-funded by the European Union

Explore how Moldova could enhance energy security, reduce emissions, stimulate job growth and lower heating costs with targeted policies to accelerate the deployment of heat pumps.

Experience the full roadmap at iea.org/programmes/eu4energy

Decarbonisation and energy security

Moldova's energy system relies heavily on imported fossil fuels.

Strengthening energy security improves efficiency, curbs natural gas use, and works toward European Union accession.

More than
80%
of primary energy is imported

40%
of final energy demand is for space and water heating

Less than
1%
of space heating is currently met by electricity, including heat pumps

Heat pumps: A key technology for decarbonisation

Strengthening energy security

Heat pumps can help rapidly shift Moldova's heating demand away from from natural gas and other imported energy sources

Creating jobs and economic growth

The global heat pump workforce is expected to increase nearly threefold by 2030.

Higher efficiency and energy savings

Replacing a gas boiler with a heat pump can result in around 80% energy savings annually.

Lower greenhouse gas emissions

Replacing a gas boiler with a heat pump in Moldova could decrease emissions up to 50%.

Zero local air pollution

Heat pumps produce no local emissions during operation

Heat pumps can be used in buildings, district heating and industrial processes

Heat pumps can provide space heating, domestic hot water and space cooling, depending on the model

Key Barriers

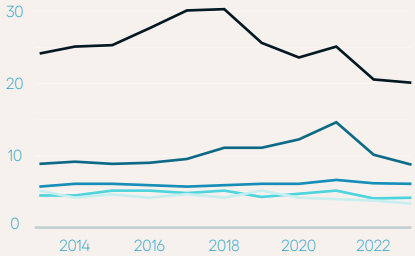
- High upfront cost
- Low energy performance of buildings
- Lack of trained engineers for installation and maintenance

Three pillars for ramping up heat pumps

How policy makers could support uptake

- Biofuels
- District heat
- Natural gas
- Coal and coal products
- Electricity

Energy demand for space heating, water heating and cooking in Moldova, 2013-2023

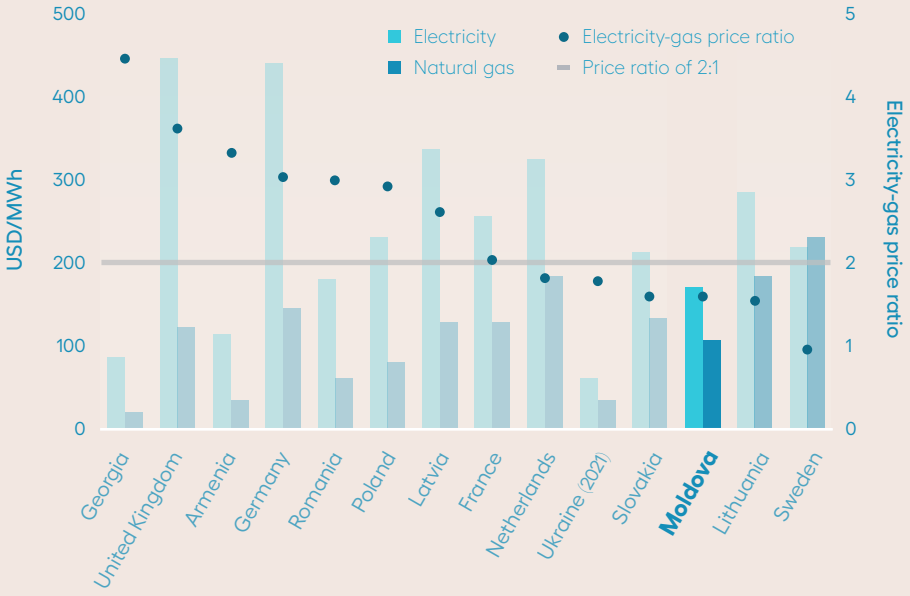


Build the market

Build the market by organising capacity building for officials and the public, introducing manufacturing incentives, training heat pump engineers for installation and maintenance, and further narrowing the electricity-to-gas price gap.

Heat pumps are already more economical to operate than gas boilers, even at low performance.*

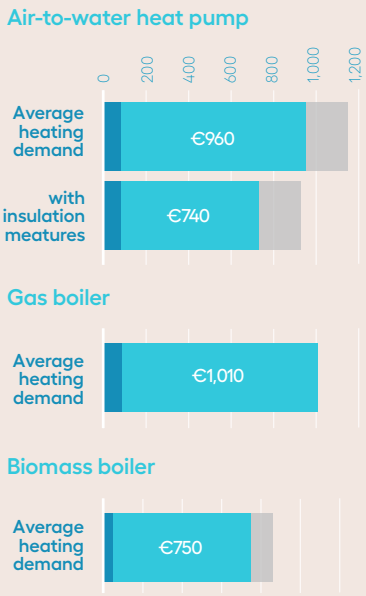
*COP = 2



Financing the transition

Finance the transition by evaluating a flat rate subsidy scheme to reduce administrative complexity and reducing VAT on heat pumps to 5% in line with the EU's legal minimum.

Heat pumps are already more affordable than owning a gas boiler. Introducing insulation measures will tip the scales further.



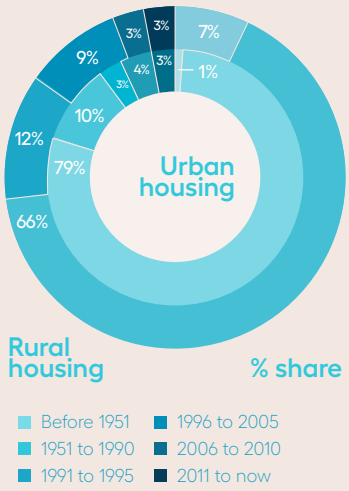
* Costs are net of subsidy

Regulate the sector

Regulate the sector by restricting natural gas in new buildings, restricting sales of fossil fuel boilers in existing buildings and collecting data on the heat pump market and renewable heating and cooling.

Moldova's aging building stock needs renovation measures, and heat pumps could be a preferred technology

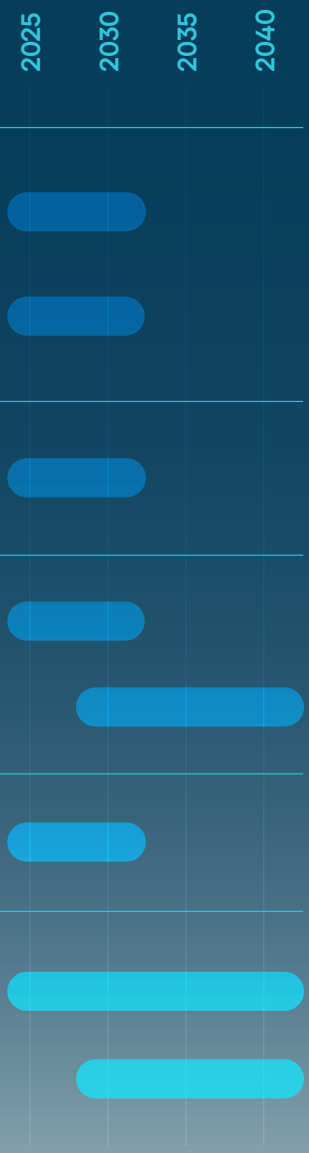
Renovating Moldova's aging building stock will reduce natural gas demand, lower energy costs and support heat pump deployment.



Priority actions on a pathway for heat pumps

Scan for more information

Roadmap



Policy framework

- Develop a national heating and cooling strategy
- Clarify the role of heat pumps in heat decarbonisation and consider technology-specific targets

Communication and coordination

- Organise heat pump capacity building for government officials and the public

Building the market

- Narrow the electricity-to-gas price gap
- Establish facilities and programmes to train heat pump installers

Financing the transition

- Reduce VAT on heat pumps to 5%

Regulating the sector

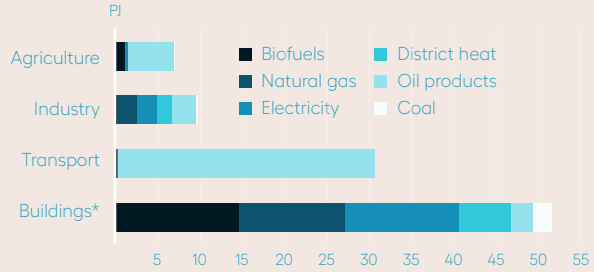
- Restrict natural gas and biomass in new buildings in line with Energy Performance of Buildings Directive
- Collect comprehensive data on heat pump market and industry, renewables for heating, and building stock

Status and key indicators

Securing reliable natural gas and electricity supplies has long been a major energy security challenge for Moldova. Replacing natural gas-fired heating technologies with heat pumps would improve the country's energy security as well as work towards improving air pollution and lowering greenhouse gas emissions.

Buildings are the largest energy user in Moldova, relying on imported natural gas and local biomass

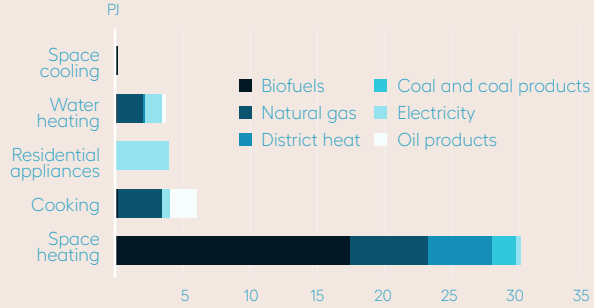
Total final consumption by sector and fuel, 2023



* Includes households, commercial and public services.

Heat pumps still play a small role in space and water heating

Residential energy demand by service and fuel, 2022



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