

Technology Fact Sheet

Sector	Human Health
Adaptation needs	Buildings built up to date do not sufficiently isolate the internal environment from the external one, do not ensure energy conservation during the cold season, do not prevent overheating during heat waves and do not contribute to maintaining optimal temperatures in rooms unless with significant expenditures for energy. The term <i>passive house</i> refers to observance of a rigorous energy efficiency standard for buildings, also called Passivhaus standard (in German). The result of observance of this standard are buildings with ultra low energy consumption for heating or cooling. In addition, the concept of passive house is based on the principle of reducing long-term investment through energy efficient house design. Passive houses provide a comfortable indoor climate, whatever the season, practically without the need to employ a conventional heating source. Such constructions meet the adaptation requirements under the extreme events generated by climate change.
Technology Name	<i>Construction of passive houses in conditions of the Republic of Moldova (pilot project).</i> ⁱ
How this technology contributes to adaptation	Perfect insulation of living premises not only essentially reduces energy costs during the cold and warm seasons, but also contributes to ensuring optimal habitat conditions (below 32°C during the day and below 24 ° C at night). These measures are essential for adaptation to climate change, first of all, for population in urban areas.
Background	Buildings built up to date do not sufficiently isolate the internal environment from the external one, do not ensure energy conservation during the cold season, do not prevent overheating during heat waves and do not contribute to maintaining optimal temperatures in rooms unless with significant expenditures for energy. A long-term measure is proposed, which is a part of the global climate change adaptation and energy consumption reduction policy, and along with fuel consumption, of reduced emissions into the atmosphere. This measure is accomplished by the new way of designing buildings in the residential areas, on the basis of the principle of a <i>passive house</i> , ie buildings with ultra low consumption of energy for heating or cooling. In addition, the concept of passive house is based on the principle of reducing long-term investment through energy efficient house design. <i>Passive houses</i> provide a comfortable indoor climate, regardless of season.
Costs	The cost of passive houses is only 20% above the cost of buildings built according to old technologies, while their efficiency ensures savings of financial resources in the process of exploitation.
Country Social Development Priorities	In terms of the country's social development, passive houses are a priority measure, because they allow future saving of significant amounts of energy thus reducing emissions of greenhouse gases in the atmosphere, and saving of financial resources.

Economic Benefits	Conservation of internal temperature entails high economic efficiency. It should significantly reduce heating costs during the cold season and air-conditioning costs in summer. Building of experimental passive houses in Chisinau and Cahul cities aim to demonstrate the economic efficiency of such buildings in the Republic of Moldova.
Environmental benefits	Passive houses are ecological. Reducing heating costs in winter and air conditioning costs during summer will contribute to environmental development due to fuel (gas and solid fuel) and electricity savings. Thus, reducing heating costs in winter and air conditioning costs during summer will contribute to sustainable environmental development through energy saving.
Social benefits	Social benefits are obvious due to significant spending cuts for heating during winter and air conditioning during summer. The resources saved could be channeled to other needs: healthier diets, cultural needs, etc.
Other considerations and priorities	Energy conservation measures will result not only in reducing the adverse effects of extreme temperatures (heat waves and low temperatures) on the health and quality of life, but also reduce greenhouse gas emissions into the atmosphere.

ⁱ This fact sheet has been extracted from TNA Report - Technology Needs Assessment for climate change adaptation - Republic of Moldova. You can access the complete report from the TNA project website <http://tech-action.org/>