

GET IN TOUCH!

CAMP Alatoo, established in 2004, is a Kyrgyz NGO focusing on sustainable rural development and climate change. Adopting community-based approaches the organization works in the agriculture, rangeland management, climate change mitigation and adaptation, wildlife conservation, and economic development sectors.

Founded in 1976, Geres is a French NGO working across Central Asia, the Mediterranean, Sub-Saharan Africa and Southeast Asia to support energy transition and climate solidarity, focusing on energy poverty, efficiency, renewables, and policy support.

Geres

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GREEN HOMES CENTRAL ASIA INITIATIVE:

Healthy, Climate-Resilient Homes in Kyrgyzstan

Between October 2025 and March 2026, Camp Alatoo and Geres conducted a pilot project, surveying 460 households across eight districts, retrofitting 27 homes in suburban and rural areas, training 20 construction workers and 2 teachers in energy efficiency, and developing an energy savings calculator.

460 Households

27 Homes

20 Construction workers

2 Instructors

ENERGY AND HOUSING, A CRITICAL CHALLENGE IN KYRGYZSTAN

The residential energy sector, along with the production of heat and electricity, is the primary source of GHG emissions in Kyrgyzstan, accounting for over 70% in 2021¹. This is driven by inefficient, coal-reliant heating systems, an aging building stock, low tariffs that discourage energy efficiency improvements and poor building design leading to significant heat loss.

Electricity consumption has risen by nearly 25%² between 2020 and 2025, while domestic supply struggles to keep up, particularly during peak winter demand. With climate change increasing the risk of extreme heat, the need for cooling is also projected to surge, further straining a system in which residential consumption already accounts for ~ 65% of the total energy consumption (2021)¹.

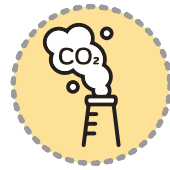
This situation does not just drive costs and GHG emissions, it leads to energy poverty that directly affects the health and livelihoods of Kyrgyz families. Without a transition toward energy-efficient, climate-resilient building practice, the ongoing pressure on the residential and construction sectors, especially in rural and peri-urban areas, will worsen energy poverty and increase emissions.

1: UNECE 2024 Energy Policy Brief : Kyrgyzstan

2: <https://timesca.com/electricity-generation-in-kyrgyzstan-stagnates-as-demand-surges/>



ENERGY AND HOUSING A CRITICAL CHALLENGE IN KYRGYZSTAN



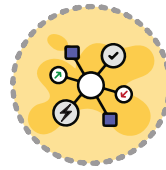
GHG EMISSIONS

Residential energy, heat and electricity generate over 70% of Kyrgyzstan's emissions



HEAT LOSS IN BUILDINGS

Coal-based heating and poor insulation drive major energy losses



COMPOUNDING FACTORS

Low tariffs discourage efficiency improvements as electricity demand continues to surge

THE ENERGY POVERTY TRAP: A SURVEY BY CAMP ALATOO

The household survey conducted by Camp Ataloo highlights widespread energy poverty: many households aren't formally poor but face high heating costs, poor housing, and limited access to information on energy efficiency, bioclimatic building design and sustainable construction. As a result, 20% of surveyed households doubt the benefits of insulation.

ENERGY VULNERABILITY



CAUSES

78% rely on coal or wood for heating. Housing is largely inefficient (57% lack wall insulation, 58% lack roof insulation, and 60% have uninsulated floors)



RESULT

Heating can consume 30 to 40% of budgets for lower-income households



BARRIERS

Thermal discomfort is widely accepted, lowering the incentive to invest. Limited awareness, volatile pricing, and a shortage of skilled labor hinder improvements

The consequences for Kyrgyzstan are already felt:

- **Poor air quality:** Winter outdoor air pollution levels reach up to 10-15 times WHO safety limits in urban areas³, due to coal-reliant heating and poor insulation. Indoor air pollution is less documented but estimated to be at critical levels as well for households relying on coal and wood for heating.
- **Health impacts:** Poor thermal comfort and air pollution in winter lead to chronic respiratory issues and premature death; summer heat increases mortality rate⁴. Both particularly affect vulnerable groups.
- **Economic strain on households and the economy:** High energy and health costs drain household savings and income. Air pollution costs the city of Bishkek alone ~ 20.8\$ million per year.
- **Inefficient markets:** Energy efficiency market lacks quality standards, thermal engineering calculations and transparent guarantee mechanisms.

RETHINKING HOW WE BUILD, HEAT AND COOL OUR HOMES

To combat energy poverty, improve air quality, enhance climate resilience and energy efficiency, the Green Homes Central Asia initiative proposes an integrated approach combining technical engineering and guidance, training and financial support mechanisms.

The project does not propose a one size fits all approach, but a set of solutions, from minimum enhancements to comprehensive interventions.

- Insulation of the building envelope
- Window replacements
- Ventilation upgrades
- Energy efficient furnaces
- Energy saving appliances (for cooking, heating, lighting)
- Awareness raising and training

A systemic approach based on technical standards, financial affordability and trust:

Sustainable scaling of housing energy efficiency requires simultaneous improvements in technical knowledge and practice; accessible and affordable financing; and trust among households and the market actors.

Technical knowledge, practice and standards:

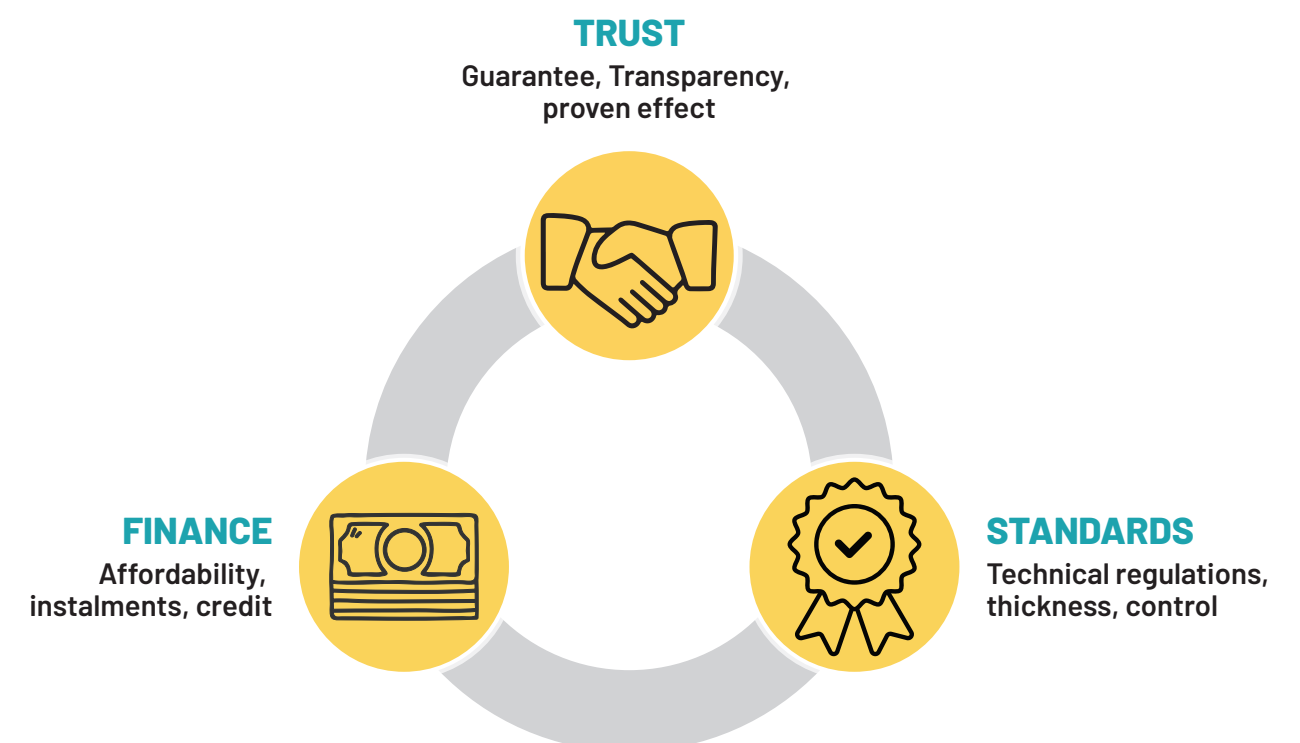
- Train and certify local builders
- Enhance the availability of insulation materials that are less pollutant, with lower GHG emissions, including bio-based insulation materials (sheep or wood wool, cellulose wadding, reeds,...)

Accessible and affordable financing:

- Provide adequate financial incentives for households, depending on their preferences and capacity
- Enhance preferential lending and instalments for energy efficiency enhancements and clean heat
- Monitor and direct government expenditure toward climate and energy efficiency initiatives through green budget tagging (including specialized credit lines)

Trust:

- Develop energy efficiency standards and quality insurance, adapted to different climatic conditions, aligned with national development policies, NDCs and energy sector policies
- Certify insulation improvements, energy efficient appliances and furnaces.



3: MoveGreen, 2025: annual analytical report 2024

4: World Bank. 2025. Unlivable. How Cities in Europe and Central Asia Can Survive – and Thrive – in a Hotter Future

BENEFITS OF ENERGY EFFICIENT, CLIMATE- RESILIENT HOUSING

Social and well-being outcomes

After renovation, households reported improved indoor comfort, warmer temperatures in the early morning, and fewer drafts.



“Our windows were replaced, the exterior wall was insulated with 8 cm expanded polystyrene and finished with cladding. Since then, we no longer use the coal stove or air conditioner and now rely only on electric underfloor heating. The house is warmer, more comfortable, and looks beautiful from the outside.”

Batma Kuandykova, Leninskoe village

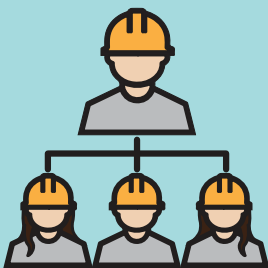
Household savings

Several families noted lower electricity use, some were able to completely stop using electric heaters.



“Our ceiling was insulated with 15 cm basalt wool boards. We now heat the house much less often. Before, we used a lot of coal, yet it was still cold in the mornings. Now the warmth lasts longer, and the children no longer feel cold, especially in the living room and children’s rooms.”

Aizada Smakeeva, Kyzyl Birlik village



Skills-development

The project trained 20 construction workers and two instructors in energy efficiency, strengthening local capacity and building practical skills among students and young professionals in the green construction sector.



Environmental impact and global emissions

Kyrgyzstan’s energy sector accounts for around 60% of its total GHG emissions. Reducing emissions from energy, especially residential heating and electricity, is crucial to meet the country’s carbon emissions reduction target under the Paris Agreement.

