Refurbishing Homes Efficiently: Šabac's ESCO Model

Submitted By: European Bank for Reconstruction and Development (EBRD)



Organization Profile

Organization Name: JKP “Toplana - Šabac”

Organization Type: Subnational government

Website: https://toplanasabac.rs/

Practice Details

Country(ies): Serbia

City(ies): Šabac

Start Year: 2019

Ongoing: Yes

End Year: N/A

Main Adequate Housing Components:



Housing Thematic Areas:

Housing & Climate Mitigation

Housing Policy, Legislation & Governance

Relevant SDGs:



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Problem & Context

The building sector, a major energy consumer in Serbia, has high potential for savings. Average energy consumption in buildings exceeds 150kWh/m² annually, compared to < 50kWh/m² in Western European countries. This is due to old building stock (75% built in the 1950s to 1980s, lack thermal insulation). Energy efficiency (EE) and residential conditions could improve by 40-70% with investment. Few municipalities in Serbia have a consistent EE policy with the City of Šabac and its District Heating Company leading the way. Multifamily residential buildings are the most challenging sub-sector for EE improvements and CO_2 reductions. Unlike single-family homes, multifamily buildings face structural, financial, ownership fragmentation and organizational barriers. Consumption-based billing is rare, undermining energy-saving incentives. District heating systems often use lump-sum billing, discouraging responsible energy use. This limits effectiveness of measures, contributing to energy waste.

Solution Developed

The City of Šabac, with 122,000 inhabitants, its District Heating Company JKP "Toplana - Šabac" and EBRD piloted the Public ESCO model, innovated by EBRD, to improve energy efficiency (EE) and living conditions in residential buildings. A public ESCO is a government-backed energy service company that enhances EE without requiring upfront investment from property owners. It implements upgrades and recovers costs through energy savings over time. This approach positioned JKP "Toplana - Šabac" as an aggregator and implementer of building-level retrofits, addressing homeowner barriers. With a €2.5 million EBRD loan, the project financed insulation upgrades, thermostatic radiator valves, and heat allocators in 26 multi-apartment buildings, benefiting energy-vulnerable households. The model introduced consumption-based billing and on-bill repayment mechanisms, allowing households to repay investments gradually without upfront costs. A scalable pathway for reducing emissions, lowering energy bills, and improving living comfort in urban housing. The success of the Šabac pilot laid the groundwork for the Public ESCO Serbia Project to replicate the model across up to 14 local governments.

Implementation

Implementation began with detailed energy audits and building assessments to prioritize interventions based on consumption data and technical feasibility. The District Heating Company "Toplana- Šabac", in coordination with the City of Šabac, was involved in all aspects of implementation. Technical assistance, provided by EBRD, supported project preparation, procurement, and monitoring. Homeowners were engaged through their associations, which signed participation agreements to enable investment without upfront costs. An international open tender was launched to procure contractors for energy efficiency refurbishment works. Toplana-Šabac managed construction activities, supervised installations, and ensured quality control. The process was phased: audits and consultations took place in early 2019; works began after mid-2019 and were implemented successively – with several buildings completed

per year, with the project expected to be completed by the end of 2025. Implementation was supported by an Environmental and Social Action Plan and a Stakeholder Engagement Plan aligned with international best practices and EBRD procedures. Resources included in-kind support from the City, coordination capacity from the District Heating Company, and technical expertise from both local and international consultants. Stakeholder engagement, community outreach, and local media coverage supported transparency, increased acceptance, and raised awareness among residents and the broader public.

Enablers & Obstacles

Strong commitment from the City of Šabac and active leadership by the District Heating Company, which had already introduced consumption-based billing and had access to detailed consumption data. The Public ESCO model was well-suited to overcome fragmented ownership and coordination challenges typical in multi-apartment buildings. Technical assistance supported preparation and alignment with international standards. It was important to consult and inform residents about energy savings and repayment mechanisms, and accommodate the administrative complexity of reaching agreements with multiple homeowner associations. These were addressed through targeted communication, transparent engagement processes, and simplified agreement templates. Capacity-building for the District Heating Company and clear roles for contractors helped ensure project delivery. Targeted reforms, standardized Public ESCO offer templates and capacity building are creating positive change.

Results & Impact

Since the works are still ongoing, we have a sample of measured results for 8 completed buildings, out of 19 completed under the project. Based on this sample, the project achieved an average annual energy savings of 30 percent across participating buildings, equivalent to approximately 523 megawatt hours per year. This led to estimated annual CO_2 emissions reductions of 139 tonnes. Thermal comfort in apartments improved significantly, while heating costs decreased, including for low-income households. Consumption-based billing promoted responsible energy use and increased transparency in cost allocation. Façade insulation enhanced the appearance of the urban zone, while the value of refurbished buildings increased, offering long-term financial benefits to homeowners. The project contributed to social cohesion and trust in institutions by involving citizens directly in the process. It introduced a new utility-citizen partnership model, and demonstrated a practical solution to energy poverty. Its visibility spurred national interest informing replication efforts in other cities. Under the scaled-up follow-on Public ESCO Serbia, significantly greater impacts are expected - both in terms of energy savings, CO_2 and pollutant emission reductions, and systemic improvements, ultimately aiming to unlock private sector financing, including commercial banks and private ESCOs, for future large-scale EE refurbishments.

Replication & Scale Up

The initiative has attracted considerable interest throughout Serbia and the Western Balkans region. The most advanced programme currently in development encompasses 14 cities across Serbia, including Belgrade and Novi Sad—both participants in the EBRD Green Cities programme—which have expressed intent to join the national Public ESCO Serbia initiative, with up to 294 buildings and 12,620 households expected to benefit. The EBRD is presently undertaking a comprehensive feasibility study in collaboration with the Ministry of Energy and Mining.

Public ESCO piloted in Šabac has strong replication potential, especially in markets where EE funds in housing projects are still being developed and consumption-based billing is not widely implemented. Its utility-led structure helps overcome coordination and financing barriers in multifamily buildings. Through Public ESCO Serbia and ongoing dialogue with Western Balkans stakeholders, it is gaining traction as a scalable solution to improve energy performance in housing, enabling future private sector investment. Also, scope within the EBRD Green Cities programme's Green City Action Plans.

Policy Uptake

This housing practice has informed or been partially integrated into policy discussions, strategies, or pilot-level policy instruments.

The ongoing SECO-supported feasibility study for Public ESCO Serbia Project encompasses targeted amendments to secondary legislation, developing technical and financial standards, and institutional capacity building. While full legislative adoption is still in progress, the project is being implemented at scale. The model is aligned with requirements under national reform programs - positioning it for full integration upon completion of planned legal reforms.

Lessons & Takeaways

One key takeaway is the importance of parallel regulatory and institutional development. The model’s success depends not only on technical and financial design, but also on timely legal harmonization and capacity building across diverse stakeholders. Without this integrated approach, the Multi-Apartment Buildings sector risks remaining one of the least advanced in decarbonization and energy efficiency. Future efforts should prioritize early alignment of legal frameworks, in parallel with project preparations, and stakeholder readiness to accelerate implementation and unlock private financing.