Thermo-Technical Rehabilitation of Pre-cast Panel building

Expected project CAPEX: 300'000'000 €

Mandating Authority: Ulaanbaatar Development Corporation JSC

Summary

Thermo-technical upgrades to pre-cast panel buildings are the most cost-effective manner of improving efficiency and capacity within UB district heating system. The harsh climate and the panel buildings' decaying state lead to severe problems affecting the health and well-being of residents. An important effect of rehabilitation is that substantial energy savings can be achieved as heat losses will be reduced. This will contribute to climate change mitigation and free up energy capacity for the city's future growth.

Location and population

Ulaanbaatar, Mongolia.
1.345 million inh.

Social and environmental impact

It was found that up to 30-40% of the heating energy can be saved. A potential 60% or more is also possible with consumption-oriented heating tariffs.

Coal saved: 561'724 tons/year or 8320 wagons
CO₂ saved: 842'586 tons/year

The project intervention will significantly reduce high heat losses, condensation and high humidity resulting in mould growth, increase low room temperatures in winter thus preventing from serious health problems.

Main stakeholders

1. Ulaanbaatar Development Corporation JSC, which is supporting project development;
2. UB City Mayor’s Office
3. The Ulaanbaatar District Heating Network company
4. Private suppliers of energy efficiency measures (e.g., construction companies).
5. Apartment Owners
STAGE 1: Concept Development, Site identification

Target population

Surfaces
1077 buildings

Climate
Arid

STAGE 2: Pre-Feasibility Studies

Pre-feasibility study: Yes, in 2011

STAGE 3: Feasibility Studies

Feasibility study: Yes, in 2011

STAGE 4: Permitting / Financing / Contracts

Land concession signed: No

Environmental impact study: No

Identified sources of fundings: No

STAGE 5: Engineering / Construction / Commercial Operation

Engineering, Procurement and Construction Contractor: Tbd

Operation and Maintenance Contractor: Tbd

Comments
The Feasibility study does not include the financial analysis in terms of NPV and IRR. Beyond the greater energy efficiency and lower costs, the project intervention brings huge social benefits, including the quality of life improvements, warm and comfortable living conditions in rooms, boosting of home values, extension of building lifespan to another 30-40 years.

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