



Energy Efficient Buildings in Armenia: A Roadmap



Insights and pathways for better buildings 2020-2040.

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

Status of Armenia's Building Sector

Building Condition



Through exemplary projects, public buildings can play a leading role, helping to build a market for residential building efficiency improvements.

The Residential Opportunity

The residential sector consistently accounts for the highest share of total final energy consumption (TFC) in Armenia.













Emerging Policy Framework

- Building energy efficiency has been identified as a strategic priority by the Armenian government
- There is an opportunity to complete Armenia's policy framework on building efficiency while improving data collection, implementation and enforcement
- Several efforts are underway with extensive international collaboration:



Influencing Factors

Underlying conditions that have an impact on efforts to make Armenia's buildings more efficient:

 Data ▶ strategies and policies

 Institutions & Governance ▶ empowering efficiency

 Policy ▶ signals to investors

 Standards & Labelling ▶ technology performance

 Financing ▶ tools for lenders

 Awareness & Communication ▶ spreading the word

 Markets & Capacity ▶ getting projects done



End-Use Technologies: Shares of Total Residential TFC - 2018 to 2036 (Projected)

Deploying Efficient Technologies

Energy-efficient technologies and materials can be widely deployed given the right governance and policy environments, functioning markets, and availability of financing, among other factors.

Building Retrofits

Including Envelopes - external walls, insulation, windows, etc.



- ~50% of Armenian housing was built between 1951 and 1975
- ▶ 40% was constructed between 1976 and 1995
- Only ~7% was constructed in the last 20 years

Solutions:

- + Targeted stakeholder engagement
- + Scale and replicate repair programmes across buildings of similar age
- + Inclusion of maintenance and repair in residential efficiency business models



Heating

Long, cold winters mean that space heating and hot water account for a big share of energy consumption in Armenia. Heating alone accounts for 20% of energy consumption and 30% of Armenia's energy savings potential.

Solutions:

- + Construction or repair of district, CHP, or central heating systems
- + Grants and preferential loans for insulation, retrofits, and heating upgrades in low-income settings
- + Adoption of efficient technologies like geothermal heat pumps or solar thermal water heaters

Cooling

Cooling still represents a small portion of energy demand in Armenia, with only 5% of Armenian households possessing an air conditioner. However, climate change is driving demand for cooling.

Balance to Maintain with Cooling Technologies:

Affordability

Efficiency

Solution: National Cooling Action Plan

- + Establish minimum standards
- + Set improvement targets for manufacturers
- + Develop labeling schemes
- + Create incentives to help consumers access efficient models

Lighting

Progress has been made in terms of conversion to LED lighting, but potential remains and policy makers require more recent data on the sector.

Solutions:

- + Improved data collection
- + Targeted communications and awareness campaigns
- + Bulk procurement programmes

Vision

The key challenge: Scaling residential efficiency improvements while creating a domestic market for energy services with strong consumer demand, a qualified supply chain, and widely available financing instruments.



An extended set of policy recommendations is included in the full roadmap



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