



THE STRATEGIC IMPORTANCE OF HYDROENERGY IN EASTERN ZANGEZUR

KAMILA A. MAJIDLI *

Department of Ecology
Azerbaijan University of Architecture and Construction
Ayna Sultanova 11, Azerbaijan

(E-mail: kamileceferli@gmail.com)

Abstract. This article assesses the hydropower potential and evolving energy dynamics of the South Caucasus, with a focus on Azerbaijan’s Karabakh and Eastern Zangezur economic regions, where sustainable development is a national priority. Using a multidisciplinary qualitative methodology—combining demographic analysis, hydrological assessment, technical evaluation of hydropower plants (HPPs), and energy policy review—the study provides an integrated evaluation of existing and future hydroenergy resources, aligned with SDG 7 (Affordable and Clean Energy) and SDG 9 (Industry, Innovation and Infrastructure). The findings indicate significant yet underutilized hydropower potential. Existing small HPPs with a total capacity of 322.86 MW generate about 1.27 TWh annually. By advancing a “river-energy nexus” approach, the research underscores hydropower’s contribution to energy security, post-conflict recovery, and regional cooperation, supporting SDG 17 (Partnerships for the Goals) and Azerbaijan’s low-carbon transition under the Paris Agreement.

Communicated by Messoud Efendiyev; Received December 29, 2025

AMS Subject Classification: 00A71, 91B76

Keywords: Small hydropower plants (SHPs), South Caucasus energy systems, Karabakh and Eastern Zangezur, Hydropower potential, Renewable energy transition.