

# SEG 2023 Conference: Resourcing the Green Transition

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## Operating on the Frontier of Discovery: Utilisation of a Multi-Disciplinary Exploration Approach at Hizarliyayla, Northeast Turkey

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Exploration for mineral deposits is the art of decision-making through the use of various scientific disciplines tempered by consideration of the time and cost of making a discovery. In addition, discoveries are not limited to objectively determinable factors such as location, grade, tonnage, or impact on local community or environment, but also the time of discovery, an aspect which reflects on the technology, metal prices, and politics of the day. Only when all factors align can conclusions be drawn regarding whether a mineral deposit is likely to be economic. Through early implementation of responsible exploration habits and particularly through the involvement of local communities, the progression of an exploration project can be swift, benefiting society as a whole.

The Hizarliyayla Project is located in the Eastern Pontides magmatic belt in northeast Turkey, situated within the well-known Hod Gold Corridor. This northeast trending, 110-km-long tectonic corridor hosts several potentially economic porphyry, epithermal, carbonate replacement, and skarnoid deposits of likely Eocene age, based on recent studies undertaken at the nearby Salinbas and Ardala deposits. Recent studies have revealed the potential for an intermediate sulfidation style of mineralisation at the Hizarliyayla Project, linked to Eocene magmatism.

The exploration methods employed for the assessment of this brownfield district included a review of historic studies from the last 30 years, remote-sensing analysis, 1:5,000-scale geological and alteration mapping supported by petrographical studies, soil and rock sampling for multi-element geochemical analysis, multi-sensor sample scanning, and an advanced statistical evaluation of the geochemistry. In addition, an environmental impact base-line study and local community engagement is continuing. This holistic approach and early application of multi-disciplinary subjects supports the development of a coherent geological and mineralisation model, which contributes to further project development in a socially and environmentally responsible manner.