



Hydropower Vulnerability under Energy Drought: Insights from Batman Basin

Study Focus

Energy drought is a growing concern for hydropower systems under climate change. This study explores the relationship between streamflow-based drought indicators and hydropower output.

Case Study:

- Batman Dam (1989–2024)
- Capacity: 198 MW
- Located in semi-arid region
- High sensitivity to droughts

Methodology:

SPI, SSFI, ITA, EDI used to assess drought-energy dynamics.

Key Result:

Strong correlation between hydrological drought and energy generation → Short- and medium-term droughts affect output most.

Implications:

Drought monitoring + adaptive planning = enhanced energy security.



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