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Sheep Grazing in Hungarian Solar Parks: Preliminary Findings and a Site Suitability Framework

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Abstract

Thirteen interviews examined sheep grazing at Hungarian ground-mounted photovoltaic power plants. Participants described operating arrangements, stalled initiatives and reasons for rejecting grazing. Veterinary, administrative and ecological perspectives informed a proposed framework covering animal care, vegetation management, access, responsibilities and costs.

Introduction

Sheep grazing combines vegetation management with livestock husbandry. We examine the practical conditions for its use at Hungarian solar parks, drawing on local experience and the literature [1].

Material and method

Thematic comparison [2] covered 13 semi-structured interviews (Sep–Oct 2026): 6 solar professionals, 3 sheep keepers and 4 veterinary, advisory, regulatory and ecological experts. Two keepers had grazed PV sites; one operator and one keeper described the same arrangement.

Results and discussions

Operating arrangements	Stalled initiatives	Reasons for rejection
Longer stays with shared monitoring, or daily supervised grazing with nightly return. Flock size and timing followed forage availability.	One prepared site never started grazing despite equipment guards being installed. Another initiative stalled because no suitable keeper could be found.	One participant preferred the existing mowing contractor, citing security, monitoring and responsibility concerns despite possible savings.

Findings by participant group

Theme	Solar-sector participants	Sheep keepers	Experts
Priorities	Safe equipment access and vegetation control; habitat goals in one programme.	Forage, water and access, with grazing fitted around the farm’s breeding routine.	Flock health, daily care and facilities for examining animals.
Daily operation	Security, keeper access and effective animal monitoring.	Longer stays with local checks and cameras, or daily grazing with a shepherd.	The veterinarian proposed comparing camera and in-person checks.
Costs and cooperation	Savings and reliable partners; one participant preferred the mowing contractor.	Different payment terms and expectations; travel, animal care and mutual trust.	The adviser stressed the work involved in movement records and correcting errors.
Health and records	One participant questioned how animal deaths could be detected across large sites.	Breeding groups shaped placement; local staff detected a lame sheep in one case.	Health checks and records; differing views on grazing separate flocks together.
Vegetation	One trial left bare ground as sheep selectively grazed the desired plants.	One keeper adjusted flock size; another paused grazing when forage ran short.	The ecologist advised matching grazing to forage supply and allowing regrowth.

The ecologist also recommended considering previous land use and differences beneath panels and between rows. Sheep moving between sites may carry seeds of desirable or invasive plants.

Proposed site-assessment framework

Research-based recommendations for planning and local trials.

Stage	Proposed checks and actions	Who to involve
Exclude or defer	Essential animal care, containment or safe equipment access cannot be secured.	Operator, keeper, relevant specialists
Before starting	Agree water, care, access, records, tasks, costs and damage arrangements; record vegetation and goals.	Operator, keeper, vet, adviser; ecologist as needed
During operation	Check animals, water, forage, regrowth, remaining mowing and maintenance access.	Keeper, operator, vegetation contractor
Modify or pause	Address care failures, injuries, escapes or poor regrowth; adjust grazing or pause where needed.	Keeper, operator, relevant specialist

Conclusions

Practices varied across sites, with recurring needs for reliable water, suitable fencing, daily care, access and clear responsibilities. Grazing should be straightforward to manage within existing operations, with flock size and timing adapted to forage supply and the keeper’s routine. Animal welfare and vegetation recovery remain essential. The next research priority is to document actual annual costs for both parties and assess potential savings, helping them decide whether to cooperate. Comparisons should cover all maintenance on the same site, including transport, animal care and any mowing still needed [3]. Initial protective works need a separate cost assessment.

Selected references

[1] Macknick et al. (2022). NREL/TP-6A20-83566.
[2] Gale et al. (2013). BMC Med Res Methodol 13:117.
[3] McCall et al. (2023). Sustainability 15:5895.

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