

House Committee on Agriculture, Food Resiliency, and Forestry Testimony of Lewis Fox

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Introduction

Taconic End Sheep LLC

- 700 ewe flock based in Leicester, VT.
- Family farm, transitioned from ~40 years of dairying in 2024.
- Grazing 600+ acres of solar sites in NH, NY, VT.
- Two full-time employees and one seasonal employee (intern) from University of Vermont.



Taconic End Sheep flock grazing in Sudbury, VT.

What is Solar Grazing?

- **The task:** Sheep manage vegetation under panels, prevent shading, and decrease fire load, as an alternative or compliment to mechanical mowing and herbicide use to control vegetation.
- **Business Model:** Every solar site has a budget for maintaining vegetation – solar grazing moves this spending directly to local farmers who steward the sites.
- **Why Sheep?** Other forms of livestock, including cattle and poultry, can be grazed at solar facilities, however sheep are the most common, as their size and behavior makes them the most easily integrated into “conventionally designed” solar sites without much modification to the site design.

Industry Trends

- **Current Scale:** ~130,000 acres of solar grazed in U.S., (Andrew et al., 2025b).
- **National Impact:** 1.5% of the national sheep flock, (Andrew et al., 2025b).
- **Regional Impact:** In the Northeast, ~13,000 sheep, representing roughly 5% of the regional sheep flock, graze ~4,600 acres of solar, (Andrew et al., 2025b).
- **State Incentive Programs:** Various states have incentive programs to encourage or mandate solar development that have an agricultural component included. Notably, NY, NJ, MA and IL have effective and ambitious programs.
- **Pitfalls:** Vermont has no established structure for agriculture friendly solar, or agrivoltaics to guide siting and facility design.

Impact on Farm Viability

- Solar Grazing can offer both a viable path for farmland access to new farmers, as well as a stable, dependable income stream for vegetation management services.
- Earnings before interest, tax, depreciation and amortization (EBITDA) margins up to 40% higher for farms practicing solar grazing, (Gasch et al., 2025).
- Flock productivity: Taconic End Sheep flock grazes solar pastures between May 1st and October 15th, while hay and haylage are produced at the home farm to feed the

flock during the winter. Solar pastures allowed the farm to grow beyond its land base and support the 700 head flock.

- Taconic End Sheep flock is productive, with a lambing rate of 1.7 lambs per mature, bred ewe. Lamb growth and productivity is consistently better than industry benchmarks. High quality and abundant forage found on solar sites is a key to the farm's nutritional management.
- **Farming and supporting a family income would not likely be possible with our original land base.**

Research and Practice

Dual-use production benefits can be achieved in well-managed grazing systems on solar sites – solar sites can support:

- **High quality forages** ideal for ruminant grazing, (Florentino et al.; Andrew et al., 2021; Kampherbeek et al., 2023; Kochendoerfer et al., 2025)
- **Healthy sheep flocks** with low internal parasite load that are in optimal nutritional status and body condition, (Kochendoerfer et al., 2025).
- **Well-managed vegetation** on site, decreased fire load, and no panel shading, (Kampherbeek et al., 2023; Kochendoerfer et al., 2025)

Dual-use of solar sites can yield ecosystem benefits – grazing sheep on solar sites can contribute to:

- **Healthy soils** in solar pastures that are grazed by sheep, (Andrew et al., 2025a), and U.S. Northeast pastures in general, (Amsili et al., 2020).
- **Diverse forages** are conserved in solar pastures grazed by sheep that yield high content of perennial plant species, flowering dicots, and native plant species, in turn benefitting soil health and ecosystem diversity, (Kochendoerfer et al., 2022).
- **Beneficial insect populations** can be supported in solar grazing systems, (Zoller et al., 2026).
- **Cooling benefits** can be realized for sheep flocks utilizing decreased temperature in the shade under panels to mitigate heat-stress, (Williams et al., 2023)

State agencies, industry, and academia work well together to capture and maximize benefits of this new and growing industry via design guides and census data collection:

- **Design guidelines for solar developers:** Agrivoltaic Solutions and WSP USA prepared Considerations for “Grazing-Ready” Solar Facilities Planning for Integration of Sheep, (NYSERDA, 2024)
- **Solar grazing census:** American Solar Grazing Association surveyed the solar grazing landscape in the U.S., (Andrew et al., 2025b)
- **Public Sentiment:** 82% of survey respondents more likely to support local solar development if agriculture is integrated, (Pascaris et al., 2022)

Summary

- Grazing sheep on solar sites yields high operational efficiency for vegetation management services and can be practiced through long-term, stable contracts
- Solar sites can produce abundant, high-quality forage, and support productive flocks.
- Grazing sheep on solar arrays can support diverse, perennial forages, contributing to healthy ecosystems, and healthy soils. Farmers can provide long term stewardship to these soils with managed rotational grazing.
- Solar grazing increases margins for sheep farmers significantly and allows farms to grow and flourish.

We encourage the Committee to explore ways to facilitate the integration of ag production in VT solar development. Solar development is not something we consider to be a threat to farmland integrity the way that residential and commercial development is.

References

- Amsili, J. P., H.M. van Es, R.R. Schindelbeck, K.S.M. Kurtz, D.W. Wolfe, and G. Barshad. 2020. Characterization of Soil Health in New York State: Summary. , Cornell University, Ithaca, NY., <https://bpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2018/04/Characterization-of-Soil-Health-in-New-York-State-Summary-Report.pdf>
- Andrew, A. C., K. Antoszewski, Z. A. Goldberg, J. Barter, L. Hain, A. DeSario, A. White, C. Roszell, E. Cole, S. Peterson, and B. Meys. 2025a. Sheep grazing as sustainable vegetation management for solar energy production in the northeastern USA. *Frontiers in Sustainable Food Systems* Volume 9 - 2025(Original Research) doi: <https://10.3389/fsufs.2025.1625483>
- Andrew, A. C., C. W. Higgins, M. A. Smallman, M. Graham, and S. Ates. 2021. Herbage Yield, Lamb Growth and Foraging Behavior in Agrivoltaic Production System. *Frontiers in Sustainable Food Systems*. doi: <https://10.3389/fsufs.2021.659175>
- Andrew, A. C., A. C. Monlezun, K. Richardson, B. Owen Chase, J. Macknick, G. Plotkin, N. Armentrout, L. Hain, J. Barter, K. Campbell, D. Dotterer, D. Finnegan, J. Gray, F. Harrar, C. Owens, C. Raines, and E. & Valdez. 2025b. United States Solar Grazing 2024 Census. American Solar Grazing Association. <https://solargrazing.org/us-solar-grazing-2024-census>
- Florentino, S. L., E. S. Buchanan, M. H. Reese, A. F. Brito, and B. J. Heins. Agrivoltaic arrays and effects of forage biomass and nutritive value of grasses and legumes for grazing dairy cattle. *JDS Communications* doi: <https://10.3168/jdsc.2025-0973>
- Gasch, A., R. Lara, and J. M. Pearce. 2025. Financial analysis of agrivoltaic sheep: Breeding and auction lamb business models. *Applied Energy* 381:125057. doi: <https://doi.org/10.1016/j.apenergy.2024.125057>
- Kampherbeek, E. W., L. E. Webb, B. J. Reynolds, S. A. Sistla, M. R. Horney, R. Ripoll-Bosch, J. P. Dubowsky, and Z. D. McFarlane. 2023. A preliminary investigation of the effect of solar panels and rotation frequency on the grazing behavior of sheep (*Ovis aries*) grazing dormant pasture. *Applied Animal Behaviour Science* 258:105799. doi: <https://doi.org/10.1016/j.applanim.2022.105799>
- Kochendoerfer, N., C. E. McMillan, M. A. Zaman, S. H. Morris, and A. DiTommaso. 2022. Effect of Stocking Rate on Forage Yield and Vegetation Management Success in Ground Mounted Solar Arrays Grazed by Sheep Cornell Nutrition Conference No. 84. Cornell University Syracuse, NY.
- Kochendoerfer, N., A. S. Westbrook, C. E. McMillan, P. A. Lapierre, M. A. Zaman, S. H. Morris, A. DiTommaso, and S. M. Grodsky. 2025. Co-location of sheep grazing and solar energy production yields agrotechnological synergies. *Agricultural Systems* 229:104403. doi: <https://doi.org/10.1016/j.agsy.2025.104403>
- NYSERDA. 2024. Considerations for "grazing-ready" solar facilities: Planning for integration of sheep. <https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/ny/Put-Energy-To-Work/Grazing-Ready-Solar-Facilities.pdf>

- Pascaris, A. S., C. Schelly, M. Rouleau, and J. M. Pearce. 2022. Do agrivoltaics improve public support for solar? A survey on perceptions, preferences, and priorities. *Green Technology, Resilience, and Sustainability* 2(1):8. doi: <https://10.1007/s44173-022-00007-x>
- Williams, H. J., K. Hashad, H. Wang, and K. Max Zhang. 2023. The potential for agrivoltaics to enhance solar farm cooling. *Applied Energy* 332:120478. doi: <https://doi.org/10.1016/j.apenergy.2022.120478>
- Zoller, L., N. Kochendoerfer, S. H. McArt, J. Losey, T. Ugine, A. DiTommaso, and S. M. Grodsky. 2026. Low solar grazing densities support beneficial insects in agrivoltaic systems *Environmental Research Letters*, In Review.