

Case Study: Hybrid Vegetation Management for a Texas Utility-Scale Solar Portfolio

Overview

KerTec implemented a hybrid vegetation management program across a multi-site, utility-scale solar portfolio in Texas. The program combined managed grazing, array-safe custom mowing systems, and precision chemical applications—including drone spraying—to maintain vegetation within strict operational thresholds while improving ecological conditions and reducing long-term O&M; variability.

Portfolio Scale:

- >2 GW of solar capacity serviced
- ~5 million solar panels traversed
- <20 panels damaged (<0.0004%)
- 100% of grazing and mowing self-performed by KerTec (no subcontractors)

Operating Context

Texas solar facilities face rapid growth surges followed by drought cycles, creating narrow compliance windows and elevated vegetation risk around high-value infrastructure.

Objectives:

- Maintain vegetation at or below 18 inches in arrays.
- Keep pads, combiner boxes, roads, and infrastructure clear.
- Reduce erosion and stabilize soils post-construction.
- Provide defensible, geo-referenced documentation for audits and O&M; teams.

KerTec's Hybrid Solution

1. Managed Grazing

Adaptive stocking strategies aligned with forage availability and seasonal surges. KerTec-owned and managed herds, transport, shepherding, and animal care, supported by surge and drought contingencies.

2. Custom Array-Safe Mowing

Purpose-built mowing systems designed for solar array geometry with low ground clearance, guard packages, and optimized cutting geometry to reduce hand trimming and zero-turn use.

3. Targeted Chemistries + Precision Drone Spraying

Selective formulations suppress non-desirable species. Drone spraying provides precision in constrained array corridors while reducing chemical footprint.

4. Soil & Vegetation Science

Baseline soil sampling, compaction checks, seed-mix engineering, and GIS/UAV monitoring guided stabilization and long-term vegetation strategies.

Results

- Vegetation thresholds maintained across arrays and infrastructure zones.
- Mowing frequency reduced by 20–40%.
- Hand trimming and zero-turn hours reduced from 3,000 → 1,000 hours (66.7% reduction).
- Non-desirable species controlled to ~90%.
- Fewer than 20 panel incidents across ~5 million panels serviced (<0.0004%).
- All compliance audits passed with zero corrective actions.

Lessons Learned

Hybrid vegetation models combining grazing, custom equipment, and targeted chemistry significantly improve consistency and reduce operational strain. Drone-based applications increase precision while reducing total chemical load. GIS and disciplined documentation processes create seamless audits and defensible decision trails.