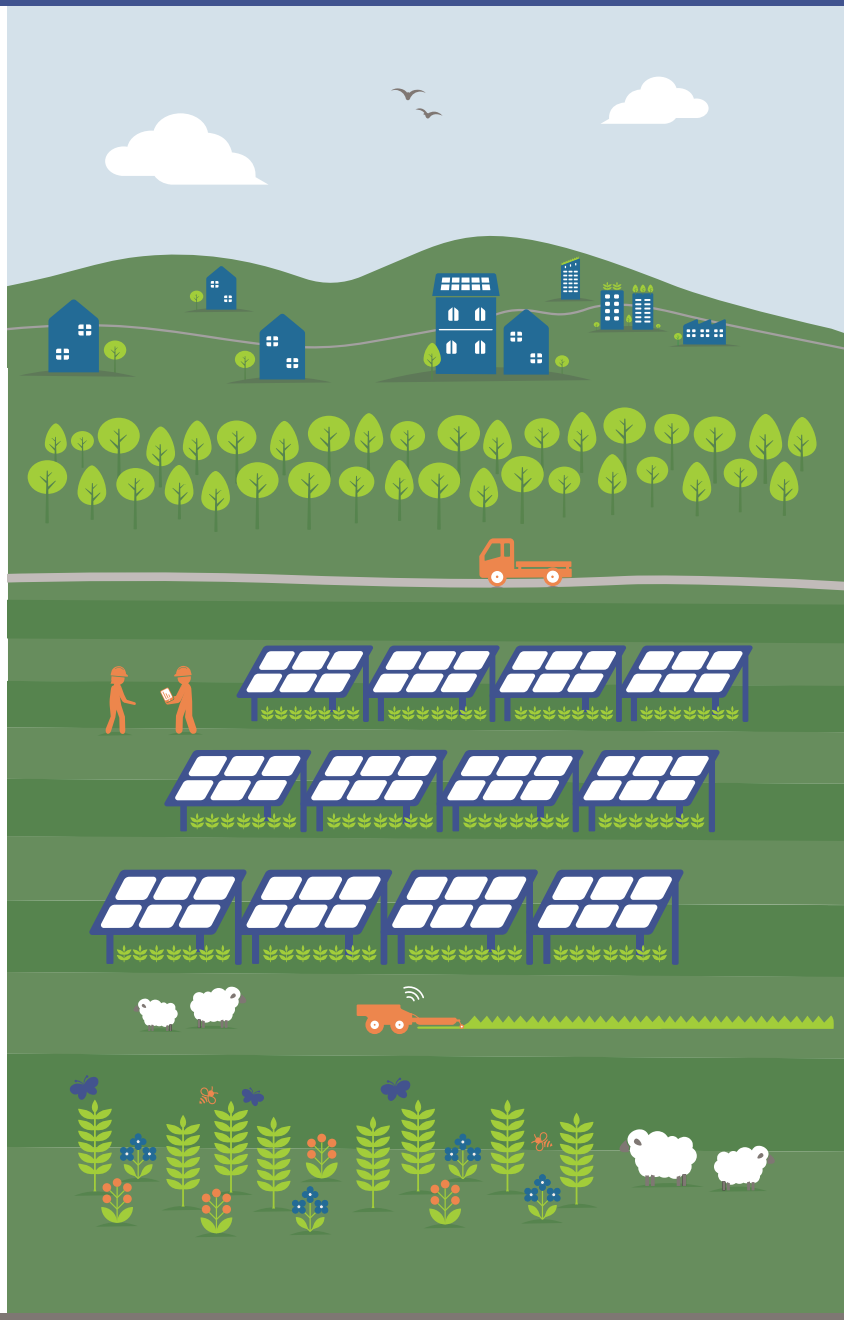
Getting Real About the Cost of Vegetation Management

Origis Energy SERVICES

Key Cost Drivers

1. **SITE DESIGN AND ENGINEERING**
   - Panel height and spacing considerations
   - Row spacing that accommodates mowing equipment
   - Access road placement and width for maintenance vehicles
   - Stormwater management integration with vegetation plans
2. **SITE PREPARATION**
   - Pre-construction soil assessment and amendment
   - Topsoil preservation during construction
   - Proper grading to prevent erosion and water pooling
   - Removal of invasive species before seeding
3. **SEEDING STRATEGY**
   - Native vs. non-native seed selection
   - Low-growth species to reduce mowing frequency
   - Drought-resistant varieties to minimize irrigation needs
   - Pollinator-friendly options to support local biodiversity
4. **WATER MANAGEMENT**
   - Drainage system design and maintenance
   - Erosion control measures
   - Irrigation requirements (if applicable)
   - Stormwater compliance monitoring
5. **LABOR CONSIDERATIONS**
   - Local workforce availability and wage rates
   - Specialized training requirements
   - Seasonal labor planning
   - Contractor vs. in-house management
6. **EQUIPMENT SELECTION**
   - Traditional mowing equipment vs. specialized solar array mowers
   - Sheep grazing as a natural alternative (benefits and limitations)
   - Equipment maintenance and replacement cycles
   - Equipment access requirements between panel rows
7. **SITE TRANSFER MANAGEMENT**
   - Clear documentation of vegetation conditions at handover
   - Establishment period management responsibilities
   - Warranty considerations for seeding success
   - Baseline documentation for future comparison
8. **COMMUNITY AND ENVIRONMENTAL IMPACT**
   - Visual screening requirements
   - Compliance with local regulations
   - Habitat creation opportunities
   - Pollinator support initiatives



"Vegetation management now represents an average of **14% of total O&M costs** for utility-scale solar facilities, with advanced sites implementing robotic and autonomous solutions reporting **cost reductions of up to 18%** compared to traditional methods."

NREL's "Solar Photovoltaic Operations and Maintenance Cost Benchmarks: Q1 2023"

Getting Real About the Cost of Vegetation Management

for Utility-Scale Solar Projects

Best Practices for Cost Control

Vegetation management represents a significant and often variable cost component in solar project operations, directly impacting ROI. The transition from EPC construction crews to long-term O&M operators is particularly vulnerable to unpredictable cost escalations when not properly planned. Plan smart. Manage proactively. Optimize sustainably.

1. Integrate Vegetation Management Early
- Include vegetation planning in initial site design and engineering.
- Coordinate with civil and electrical teams to ensure compatibility with vegetation goals.

2. Define Clear Specifications in EPC Contracts
- Establish vegetation establishment criteria and performance benchmarks.
- Include responsibilities for seeding success, invasive species removal, and soil stabilization.

3. Implement a Phased Approach
- Align vegetation installation with construction phases to reduce rework and erosion.
- Allow for adaptive strategies based on site-specific conditions.

4. Establish a Monitoring Program
- Conduct regular site assessments to track vegetation health and coverage.
- Use baseline documentation to compare performance over time.

5. Adopt Adaptive Management
- Adjust mowing schedules, seed mixes, and irrigation plans based on observed outcomes.
- Respond to seasonal and climatic variations to maintain cost efficiency.

6. Leverage Technology
- Use remote sensing and drones for vegetation monitoring.
- Consider robotic mowers and autonomous equipment to reduce labor costs—up to 18% savings reported by advanced sites (NREL, Q1 2023).

7. Negotiate Long-Term Contracts
- Secure multi-year vegetation management agreements to stabilize costs.
- Include performance incentives and flexibility for evolving site needs.

Environmental & Community Benefits

Effective vegetation management not only reduces costs but also:

1. Enhances biodiversity and pollinator habitats
2. Improves visual screening and community acceptance
3. Supports regulatory compliance and environmental stewardship

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