sunfolding

Reducing Earthwork with Innovative System Design

Take civil grading out of the land-use equation for large-scale solar

Conventional site prep at a 100 MW solar project may require the transfer of 100,000 to 1 million cubic yards of dirt. It doesn't have to be this way. Large-scale solar projects can maximize preservation of natural ecosystems and minimize negative impacts on land. Adopting new techniques and flexible infrastructure, new projects have the ability to improve environmental benefits and mitigate project risks.

Environment Benefits

95% ↑ - in Soil & Sediment Retention

Undisturbed soil enables native grassland vegetation beneath ground-mounted solar. Compared to agricultural use, grassland improves soil and sediment retention by over 95 percent.[1]

4.8 Million M3 of Water Saved

Deeper root systems can reduce water runoff. Across 1.2 GW of Midwestern solar projects, native grassland could enable the retention of more than 4.8 million cubic meters of water.[1]

3.8+ Tons of Carbon Storage Potential

If 10 GW of Midwestern solar projects adopt native grassland vegetation, the total above-ground and below-ground carbon storage potential could exceed 3.8 tons.[1]

Project Risk Mitigation

Easier Permitting

Permitting guidelines by the Minnesota Pollution Control Agency allow streamlined approval for projects that preserve vegetation underneath and around the solar tracker table.[2]

Lower Cost

It's expensive to move dirt. In a recent third-party evaluation of earthwork costs at a 410 MW project, the delta between high-cost and low-cost alternatives was greater than 4.4¢ per Watt.

Accelerated Timeline

On public lands, environmental impact review generally takes 8-12 months. Impacts such as unnecessary soil disturbance can significantly increase the timeline for review.[3]

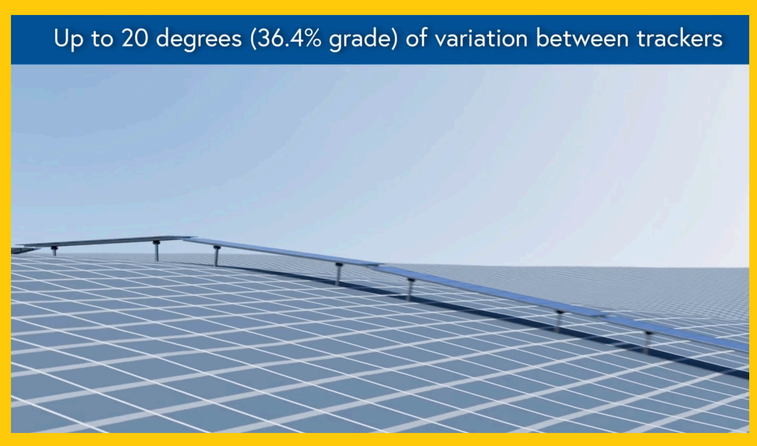
New Techniques & Flexible Infrastructure

Tracker Slope Handling

Mechanically independent tracker rows open uneven terrain for solar project development. With independent rows, systems can achieve up to 20 degrees of variation between trackers.

Flexible Infrastructure

In spite of challenging site conditions, flexible tracker infrastructure has enabled solar deployment at a former golf course in the northeast and a southeastern flood plain.



Leave More Earth Undisturbed

Scan the QR code to download a copy of this presentation. You can also share your contact details for more information about innovations in tracker slope handling and the referenced examples of flexible infrastructure.
Learn more at www.sunfolding.com/re-plus2023

[1] Walston et. al, Modeling the ecosystem services of native vegetation management practices at solar energy facilities in the Midwestern United States, Ecosystem Services, Volume 47, 2021, https://doi.org/10.1016/j.ecoser.2020.101227

[2] https://pages.services/info.sunfolding.com/blog-vegetation-management/?ts=1666373064400

[3] Gahl and Norris, Large-Scale Solar Siting, Sept. 20, 2022, https://www.seia.org/sites/default/files/2022-09/Large%20Scale%20Solar%20Project%20Siting%20-%20Land%20Use%20Framework%20-%20FINAL%20%209-19-22.pdf