SoIU 4U: Geotech Reports

There is a proposed solar installation on your land, and developers are talking about a *"Geotech report."* What does that mean for you and your property? Here's what you should know.

WHAT IS A GEOTECH REPORT?

When a utility-scale solar installation is being planned, the location's landscape is often the first thing that comes to mind: Is the land flat enough, are there trees or open areas, will wetlands and bodies of water limit the layout. But one of the most important elements of planning such an installation isn't immediately visible, and that's the condition of the soil on which the equipment and structure will be built.

Solar panel equipment is attached to racks, and the foundation of those racks—how they're fastened to the ground—will vary depending on the condition of the soil. In the Mid-Atlantic region, virtually all projects can be secured by simply pile-driving steel beams into the ground. A geotechnical, or "Geotech" for short, investigation and report are critical, prior to final engineering, to confirm how and where these posts will be installed to ensure a secure footing.

WHY DO WE NEED IT?

Geotech investigations help influence engineering decisions related to a proposed solar installation site, and generally take place once permitting is completed. Often, developers will use Geotech reports to ensure that no significant structural design changes will need to be made or that obstacles are present—like water or bedrock—that might delay and/or significantly increase the cost of the project. Pile and load testing help determine the ground's overall strength and weight capacity. And, of course, the overall reliability and safety of the solar panel equipment would rely heavily on a properly installed foundation.

WHAT DOES IT MEAN FOR MY LAND?

Geotechnical engineers will conduct the investigation and produce a certified report. This often starts simply with a live walkthrough of the property for an initial determination of the land's suitability for the project. The actual soil analysis is then conducted through a series of boreholes and/or test pits. Boreholes are narrow openings that will generally be up to 20 feet deep, and test pits create a much wider but more shallow opening—perhaps up to eight feet deep. Geotech engineers will determine where the digging should occur, and it is likely they will dig in different areas of the proposed site to uncover any soil variations that may exist. These are temporary soil disturbances, as bore holes will collapse back into themselves naturally and larger disturbances will be filled back in by those conducting the work.

WHAT DOES THE REPORT SHOW?

The Geotech report provides the data for engineering decisions that will ensure the solar facility stands for multiple decades:

- **Soil stability**
- **Groundwater presence**
- **Heat and electricity resistance (resistivity)**
- **Frost susceptibility and depth**
- **Seismic activity**
- **Soil resistance to cracking (plasticity)**
- **Corrosiveness levels**

ABOUT SOLUNESCO

SolUnesco develops clean, renewable energy projects and also spearheads state and local policy development.

SolUnesco currently has 13 solar projects under development or construction in the Commonwealth of Virginia, contributing over 1,800 MWs to the Virginia pipeline.

We strive to connect rural landowners with new revenue opportunities through sustainable, cost competitive energy generation. We work with the community to ensure responsible development from early planning until the project is brought online.

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