



An Introduction to Solar Grazing

*By Judy St. Leger, owner of Dutch Barn Farm and Board Member of the American Solar Grazing Association (ASGA)
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Reasons for Considering Solar Grazing

The landscape of agriculture is ever changing. Farmers need to be prepared to change too – no matter how hard that can be. One important change in the world of sheep is the growth of solar grazing. This change is a real opportunity for shepherds and for farmers new to sheep as well. Solar grazing increases profit per sheep and total profits.

Solar arrays are typically based on land with vegetation to control erosion and the introduction of invasive shrubs and trees. Keeping that vegetation under control is important. If it shades the solar panels, the panels produce less energy. To prevent

this, the vegetation needs to be kept low to the ground. This is where the sheep come in. By using sheep instead of mechanized management of vegetation like mowing and weed eating, solar companies can increase their green footprint, improve site management – especially when the terrain is rough or wet, and sometimes reduce costs for operations and management. So, there is a value to the grazing and tromping done by sheep on solar farms. Some of this value gets into shepherds' pockets through grazing contracts.

Our 100-acre farm has a grazing capacity of about 100 ewes and their lambs, when you take into consideration the pasture size and quality as well as the fields we use for making hay. This capacity is based on a rotational grazing plan. With the addition of solar grazing contracts, we can expect additional grazing land and thus increase the farm capacity for sheep. For every 20-acre solar site we graze from May – October, we have an additional 10-30

ewe capacity for our main flock. We need to be sure that we have barn space for these extra sheep, and that we make more hay. If we do, we can carry more sheep on the same sized farm and still have finished lambs on the schedule we established before solar grazing.

Solar grazing diversifies your farm income stream. We still see most of the income from our flock coming from sales of lamb for meat or purebred animals for breeding and showing. The added income from grazing increases total revenue and provides a buffer against reductions on lamb prices. I often speak to my neighbors going out of dairying due to lower milk prices. If they could shift from cows to sheep, they might be able to stay in farming – just in a new enterprise. They already have barns and pasture that are becoming empty once they sell the dairy herd. The thought of sheep is tough for many of these farmers, but I see opportunities to save family farms through the growth of solar grazing.

What do you need to become a solar grazer?

First and foremost, you need to be (or become) a good shepherd. The tools for solar grazing are sheep. You need a healthy flock with good ewe, lamb, and ram management. You need to consider what animals will go on solar sites and when. It's easiest to use non-lactating ewes. This means considering using open yearlings or ewes after weaning. If you are looking to have dry ewes out in May, you need to schedule lambing accordingly so the ewes can be dried off before placement in the solar array. Foot care needs to be under control. If you are not observing these animals every day, you need to be comfortable that they will remain healthy on the site. Parasite management is as important at the solar site as it is on the home farm. Efficient grazing and trampling of vegetation mean rotational grazing, often with a high stocking density. We figure a stocking rate of at least 1-5 sheep per acre per solar field. The use of internal pens made with electro netting creates smaller spaces for more intensive grazing and an effective stocking density of 3-15 sheep/acre. Just like at home, a well-considered grazing plan is important. As vegetation growth rates change through the grazing season, the sheep rotations need to change as well.

Solar arrays generally have a tall wire mesh perimeter fence that is capable of safely holding the flock. But beware! While most predators don't breach the outside fence, regular monitoring to assure that no coyotes or dogs can get into the array is still important. The internal pens require additional fencing. Movable electro net works well to create small pens within the array. We always add a sign to the entry gates so that folks can easily contact us if there are any sheep questions or concerns.

Once they are at the solar array, the shepherd needs to assure that all of the sheep's needs are met. This includes water and salt/minerals. Most solar sites do not have on-sight water. Getting water to the flock requires hauling water or finding a nearby good Samaritan that will allow you to fill up buckets or tanks near the array to water the sheep. One nice side-effect of the abundant shade under the solar panels is a reduction in water consumption by more than 50%. This means that providing daily water may be easier than on the home farm.

Just having sheep isn't enough. Before considering solar grazing, do you have the ability to move those sheep around? This likely means having a trailer and often some



Grazing site signage for public information and protection of the site and sheep.



Moveable electro net pen keeps the flock safe while panels provide shade.

sort of handling system or dog to make getting animals onto the array and then back into your trailer efficient and safe. Most solar sites weren't designed with sheep in mind. You may need to be able to back up and turn that trailer to get the sheep where you need them. You may also need to be moving more than just sheep. If there is vegetation that the sheep don't effectively control, you may need to do additional mowing or trimming. Consider how you would get this done – and get the equipment to the site.

You need to be able to get to the solar site on a regular basis. This travel costs you in terms of professional time, vehicle wear and tear, and fuel. When considering bids for grazing contracts, it is important to estimate the cost for your time travelling back and forth to the array as well as the time for animal management and movements. We estimate a minimum site visitation of 3



Watering the solar grazing sheep. Photo courtesy of Lexi Hain.

times/week. We include an estimate for fuel based on our miles per gallon and include the wear and tear at an estimate of \$0.37cents/mile. These figures are important in assuring that the grazing contract covers our costs – and provides a profit. It also keeps us from bidding on contracts too far from home.

Solar grazing is more than just grazing. Shepherds need to be comfortable with contracts, bidding, and able to present a professional persona. You are being paid for your professional management as well as the vegetation management the sheep are doing. The shepherd is the “eyes on the ground” at the array. Contacting and communicating with energy companies may mean presenting your farm in a manner that's new as a service provider. But contracts and billing aren't hard to learn, and they are important to successful solar grazing. Remember that having sheep away from the farm means that they have a

new set of eyes on them. It's important for the future of solar grazing that everyone working in this field is seen to provide good animal care while the sheep are doing their job. They serve as agricultural ambassadors.

Insurance can present another new element for many farmers. The standard policy you have on the farm isn't likely to cover solar grazing. Many solar companies request or require an umbrella liability policy. Umbrella insurance is a type of liability insurance that covers claims in excess of regular farm coverage. It covers you if the sheep should injure someone on the solar array, and if they should do damage to the infrastructure by rubbing, jumping, or chewing. This insurance doesn't cover damage to the sheep.

Where to learn More and how to get into solar grazing

As more farmland is used for solar arrays, there are more opportunities for solar grazing. We've just touched in the tip of the iceberg here. To learn more about solar grazing and get questions answered about how to add a vegetation management program to your farm enterprise, consider joining the American Solar Grazing Association (ASGA). ASGA is made up of solar professionals and farmers interested in solar grazing. ASGA

www.solargrazing.org

ATTENTION SHEEP PRODUCERS AND TARGETED GRAZERS

Solar grazing is a rapidly expanding industry that needs you

Join ASGA

Become a member of the American Solar Grazing Association at www.solargrazing.org

Membership includes listing on map.solargrazing.org and our networking app

ASGA

members are developing best practices that support shepherds and solar developers to both effectively manage solar installations and create new agribusiness profits.

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