Timothy W. Kelsey, Ph.D.
The Pennsylvania State University
105 Armsby, University Park, PA 16802
814.865.9542 tkelsey@psu.edu

Comments for the Public Hearing of the Senate Agriculture and Rural Affairs Committee on "Utility Scale Solar Development and Agricultural Land"

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Dr Timothy W. Kelsey
Professor of Agricultural Economics, The Pennsylvania State University

Good morning, Senator Vogel and honorable members of the Committee. I appreciate the opportunity to address the topic of utility scale solar development and agricultural land preservation in Pennsylvania. I am a professor of Agricultural Economics at The Pennsylvania State University, and over the past 30 years I've conducted a variety of studies relating to land use, land use change, and agricultural land preservation. For about 21 years of my time at Penn State, my primarily responsibility was within Penn State Extension, and during those years I participated in numerous local and regional meetings across the Commonwealth on these issues, including with farmers, non-farm neighbors, local government officials, and others.

The focus of my comments this morning is to share with you my thoughts on why agricultural land preservation is important, the major threats to farmland in Pennsylvania, and the challenges and opportunities arising with utility scale solar development. To set the context, the latest U.S. Census of Agriculture reported that Pennsylvania lost about 6% of its farmland between 2012 and 2017. Much of this loss was pastureland (which fell 13%) and woodland (which feel 18%). Cropland actually increased by 2% during this time period. It is important to take these numbers with a bit of caution, however, because the U.S.D.A. commonly adjusts their definition of 'farms' with each Census of Agriculture, which means the numbers in 2012 and 2017 aren't totally comparable (but they're the best we have).

I. Why Agricultural Land Preservation is Important

Farming plays important economic, social and historical roles in many Pennsylvania communities. It is a direct source of income and a way of life for thousands of Pennsylvania families. Tens of thousands of other residents make their living providing services and goods to farms, or processing farm production and getting it to market. Many Pennsylvania communities hold farming as a significant part of their community identify, and the land is a critical part of that.

When we discuss agricultural land preservation, we often actually mean preserving farm families and farming activity; the land itself provides community benefits such as open space, groundwater recharge, and wildlife habitat, but without the people working that land it becomes overgrown and no longer contributes to the food supply or economy. The agricultural land preserved must remain workable and usable for farming activity, rather than just 'preserved' as in a museum. A critical element of agricultural land preservation is an understanding of farmers and farming activity, and that the preserved land can be farmed profitably into the future.

Another important ingredient for successful agricultural land preservation is the community and business context in which the agricultural land exists. Agricultural activity depends upon formal and informal networks connecting individual farms with the inputs and processing capacity essential for them to be successful. These typically include seed dealers, fertilizer suppliers, milk haulers, feed mills, equipment dealers, large animal veterinarians, slaughter facilities, and the other services and goods required by conventional farming practices; without access to necessary inputs and processing capacity, an individual farm can find it difficult to survive. Successful agricultural land preservation thus requires thinking beyond individual farm parcels to see the greater whole of these connections.

It is for this reason I believe the concept of *Critical Mass* of agricultural land should be a driving force in agricultural land preservation. Input suppliers and processors require a sufficient number of local farms to remain in business, and if that number drops too low these businesses may close, making it more difficult for the remaining farms in the area to survive. Clustering preserved agricultural land together in contiguous blocks (or close to contiguous blocks), as the state's Purchase of Conservation Easement does, helps with this dynamic. It also helps prevent 'island' farms surrounded by residential development, which can make it very difficult for the farm to perform normal agricultural activities or adapt as necessary to changing market conditions. No one knows precisely how much farmland is necessary to keep farming vibrant in an area, in part because it varies by the type of agriculture, but the concept of Critical Mass is vital to keep in mind.

II. Threats to Agricultural Land

Historically, the primary threat to agricultural land in Pennsylvania has been population growth. The Pennsylvania counties with the fastest population growth over the past 30 or more years primarily have been those in southeast and central Pennsylvania. This area happens to have the best soils in the Commonwealth, and thus is home to Pennsylvania's top agricultural counties as measured by the value of production.

I believe population change still is the primary threat to agricultural land in Pennsylvania. According to the 2020 Census of Population, Pennsylvania's top ten agricultural counties collectively experienced a 5.6% increase in population between 2010 and 2020, more than twice the 2.4% statewide population change. Only one of these top ten agricultural counties lost population (Northumberland), while three of them were among the state's five fastest growing counties, including Chester (7.1%), Cumberland (10.2%), and Lebanon (7.3%). Our top county by agricultural sales, Lancaster, grew 6.5% during this same time period. Notably, our top ten agricultural counties accounted for 9 of the 23 Pennsylvania counties with positive population growth between 2010 and 2020. Pennsylvania's population is growing precisely where much of the agricultural activity is occurring.

Population growth and thus rising demand for housing generally leads to higher agricultural land prices, which can impact the taxes farmers pay as well as younger farmers' abilities to buy agricultural land. It can also bring more residents into close proximity of farms, increasing opportunities for conflict between farm and non-farm neighbors, such as over noise or odors, and making it more difficult for farmers to move equipment between fields. Such conflicts have been a common concern for farmers and non-farmers alike, which is one reason why Pennsylvania has a Right-to-Farm law that protects farmers from nuisance lawsuits.

Another primary threat to agricultural land in the past few years has been low commodity prices, particularly for milk, which has made it difficult for some farm families to remain in business. They retire

or otherwise leave farming, and low commodity prices make it more difficult for other farmers or those interested in farming to afford to buy the land based upon its agricultural use value.

III. Land Use Planning in Pennsylvania

The responsibility for regulating land use in Pennsylvania, such as through zoning and subdivision ordinances, primarily has been delegated by the Commonwealth's Municipalities Planning Code (MPC) to municipal governments. County governments have some land use planning authority, yet the MPC specifically says that when county and municipal ordinances conflict, the municipal ordinances supersede the county. The result is that land use regulation in Pennsylvania largely is done municipality by municipality. The MPC carves out several exemptions from such local control, including normal agricultural operations, forestry and coal mining, which instead are regulated by other laws such as ACRE, the Noncoal Surface Mining Conservation and Reclamation Act, and the Oil and Gas Act.

An important consideration is that by law municipalities must zone for all land uses and thus are unable to exclude land uses they deem inappropriate for the community. Ordinances can make it more difficult to engage in certain land use activities, such as where the plan allows these to occur, but in practice this means that local governments cannot directly prohibit utility scale solar development even if their residents are uniformly against it.

It also is critical to recognize that land use planning by its nature involves a delicate balance between individual property owners' interests and the broader community. No one likes being told what they can or cannot do with their land, and yet decisions by individual property owners can have significant impact on neighbors and others. We are interdependent, with my choices affecting my neighbors' quality of life, and vice versa. People differ on where that balance should be, and fundamentally that's one of the major challenges when crafting a local zoning ordinance.

Finding this balance of individual interests and the broader community interests can be especially difficult with agricultural land. For many farmers, their most valuable asset is their land, which they need to sell for the highest price to be able to retire. This creates challenges for keeping the land in farming because typically the land is worth much more for its development potential than can be made from farming activity. This dynamic is one of the primary reasons the state and counties have focused most of their agricultural land preservation activities on purchasing development rights on agricultural land; purchasing the development rights is a way to let farmers capture this higher non-farm value for their land without pulling the land out of farming. The state's Clean & Green program, which provides preferential tax assessments on agricultural land, similarly is based upon the recognition that the market value of agricultural land typically represents its development value, which is much higher than what a farmer can earn from farming that land.

IV. Implications for Regulating Utility Scale Solar Development

From an agricultural land perspective, utility scale solar development can be viewed as just another type of land development that pulls agricultural land out of production. It may look different than other types of land development, but in practice its impact on agricultural land is similar to other types of land development which takes land out of farming. Some may argue that the farmer can still farm once the solar arrays are in place, yet the options are much more limited and thus more difficult to be profitable.

When thinking about development of agricultural land, it also is important to consider the other impacts on the community. Some types of development, such as residential development, can increase the demand for public services provided by local governments and school districts, such as roads, sewerage,

public water, and public schools, and thus affect local taxes. In that regard, once site construction is done, utility scale solar development has marginal impact on such public services; it adds very little traffic to roads, it doesn't add additional children to local schools, and it doesn't increase demands for county human services. On the other hand, it can materially affect the viewshed within the community and the quality of life of neighbors. It does change how the community looks and feels, especially for neighbors and nearby residents.

Some farmers may be choosing to lease for utility scale solar as a means of supplementing farm income, in the expectation that only part of their farm will be used for solar and that they can continue to farm the remainder. This can provide a steady source of income to the farmer, similar to how some farm families add a poultry or hog house when their adult children want to join the farm and the farm operation thus needs more income. Yet such a strategy only works if enough of their agricultural land is unused for solar, remaining for conventional farming activity. It also matters that the farmer doesn't lose their most productive land, and that they can easily access and work what isn't being used for solar. This leasing strategy also only can work if farmers have the complete and unbiased information they need to make informed decisions about leasing for utility scale solar. The accuracy of such information has been a concern among many officials and others.

From my perspective, all these factors make planning regarding utility scale solar development especially challenging. As I've mentioned, many farmers are facing financial difficulties due to commodity prices and they're looking for ways to be able to either remain in agriculture or to exit without significant debt. A steady stream of lease payments thus can look attractive. Solar power also has important environmental benefits, and the state is trying to encourage a shift towards this source of power. At the same time, utility scale solar development can negatively affect neighbors and others within the community.

V. Considerations for the Future

I believe the primary threat to agricultural land in Pennsylvania remains residential development. The regions of the state which have been experiencing population growth unfortunately also are home to our top agricultural counties, so we're continuing to face growing need for residential properties right where much of our agricultural activity is being done. That doesn't mean we shouldn't keep an eye on utility scale solar development. Individual utility scale solar developments by themselves largely won't make that large an impact on the quantity of farmland in Pennsylvania, yet collectively many such developments could have negative impacts, particularly to the extent that these occur on our highest quality soils and in ways that threaten the critical mass of agricultural activity in that area.

Utility scale solar development and the critical mass of agricultural land are both regional issues, broader in scope and implication than can be readily managed at the municipal level. The effects of the development can easily spill over into surrounding municipalities, and farmers typically purchase many of their needed supplies and sell their produce outside of their home municipality. In addition, relying upon municipal-level regulation means the focus primarily will be on local impacts, so the overall effects of multiple utility scale solar developments within a region may be overlooked. I'll note in passing that the ability of municipalities to successfully regulate this activity depends critically upon their capacity to understand this activity, update zoning and other ordinances in a timely way, and adjust quickly as needed. Some of our larger municipalities have the ability to do this, but those with fewer resources, including staff and revenues, may struggle.

I believe it is important there be accurate methods for monitoring the overall impact of utility scale solar development in Pennsylvania, tracking to what extent agricultural land is becoming lost from farming due to this activity, what types of agricultural land are being lost (prime farmland? marginal land?), where this land is located and how concentrated the losses are, and to the extent the losses may be affecting the milk haulers, feed mills, equipment dealers, slaughter facilities, and other providers of services and goods essential for the remaining farmers to remain viable. This needs to be done at a regional or state level, rather than municipal or county level, due to spillover effects.

Given the regional scale and scope of utility scale solar development, I similarly believe it is important for the state to consider methods of regulating the development at a more regional level than currently is possible for municipalities under the authority of the Municipalities Planning Code. A potential approach might be a state law similar to the Oil and Gas Act or the Noncoal Surface Mining Conservation and Reclamation Act, which give state agencies major regulatory responsibilities. Another approach might involve continuing regulatory authority at the municipal level for this development, yet with strong investment to increase local officials' capacity to understand and manage this issue, and with the active involvement of regional planning entities to help coordinate across municipalities and help local decisions nest within the regional Bigger Picture. Regardless of approach chosen, I believe it is critical that regulatory decision-making include strong and active engagement with the communities potentially being impacted, and local voice, because the decisions will materially affect the quality of life of residents within those communities, including farmers, non-farm neighbors, and others.