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Summary of “Exploring Agrivoltaic Project Experiences” Webinar

The webinar, “Exploring Agrivoltaic Project Experiences,” was held June 18th and was hosted by John Ignosh, a Biological Systems Engineer at Virginia Tech. The first speaker was Maximilian Trommsdorf from the Fraunhofer Institute for Solar Energy Systems in Germany. Mr. Trommsdorf presented on his work with the Fraunhofer Institute and their pilot solar plant in Heggelbach. The second speaker was Riley Murray, recently retired from Secure Futures. Mr. Murray spoke about his project titled “Solar Sheep” conducted at the Carilion New River Valley Medical Center. This [link](#) contains the presentation and the Zoom recording.

Agrivoltaics, also known as Agrophotovoltaics (APV), is the concept of co-developing a plot of land for both solar photovoltaic power and agricultural purposes. Solar energy is predicted to become a major source of electricity in coming years and agrivoltaics could expand the field significantly. Many predict that agrivoltaics will increase crop yields and help improve land efficiency. Mr. Trommsdorf and Mr. Murray have both conducted unique projects utilizing agrivoltaics and presented their results at this webinar.

Mr. Trommsdorf and the Fraunhofer Institute determined that many popular crops do not require full sun to grow and would likely flourish in a shaded environment. To test this idea, they installed a pilot plant in Heggelbach in 2016 that installed solar panels on the same land as celery, grass, and potato crops. The bifacial solar panels used are more transparent than traditional panels allowing for better light distribution for plant growth while still providing protection from excess solar radiation. Since their pilot project has begun, potato crop yields on the land decreased 18% in 2017, but later increased 11% in 2018. Installation of solar panels also



Solar panels installed in crop fields, from the Fraunhofer ISE
(www.ise.fraunhofer.de).

improved land efficiency between 60 to 90%.

Mr. Murray and Secure Futures installed Virginia's largest solar project at a hospital, the Carilion New River Valley Medical Center, and maintained it with "solar sheep" from local farmers. The solar grazing project was installed in 2017 on a ten-acre site behind the hospital. In order to minimize landscaping costs and pollution from mower emissions, sheep were brought to the site to manage the landscape naturally. Temporary fencing panels were erected around the solar panels and equipment to protect sheep and water tanks were installed to provide a water source for the animals. The project has gone quite well as the sheep appreciate the shade from the panels in the hot Virginia climate and local farmers are eager to utilize new grazing land.



Sheep graze among solar panels behind the Carilion New River Valley Medical Center, image from the Roanoke Times (<https://www.roanoke.com/news/local>).