Excursion 6

Solar Park on a Rewetted Peatland and Paludiculture Startup in Schleswig-Holstein/NW Germany

Guides

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Excursion Programme

Time	Programme
06:00	Depart from Greifswald
11:15	Visit Peatland PV in Lottorf
13:15	Depart from Lottorf
14:30	Lunch in Preets
15:15	Visit Paluboard from Planterial
16:15	Depart from Preets
20:30	Return to Greifswald

Stop 1: Solar Park on Rewetted Peatland in Lottorf

Location

- Solar Park in Lottorf, close to Eckernförde in the federal state Schleswig Holstein, NW Germany

Type of peat

- Degraded fen peat
- Peat depth 0,1-2,2 m (northern parts of the solar park on mineral soil)

Land Use History + Hydrological Condition

- Seems some peat cutting was occurring since at least 1879, when the railway already existed
- Ditches built sometime between 1944 and 1954
- Formerly agriculturally used as grassland, drainage via drainage pipes and ditches
- Construction of the solar park started in 2020, divided in 2 parts along the railway
    - western side completed in 2021
    - eastern side completed in 2023
- During construction, drainage pipes were destroyed, in the west side a causeway keeps the water in the site
- Measured water levels ranged from -33 to 13 cm on the west site and from -28 to 8 cm on the east site (measured from 2024/08 to 2025/03)

Solar Park

- Only known example of a solar park in Germany on rewetted peat
- 30 ha, 62% with solar panels
- Panels bifacial and have a single-axis tracking system
- Installed capacity of 17.1 MWp, annual yield of 20 million kWh
- Operator Wattmanufactur, wants to generate solar power and ecological benefits
- Vegetation management: mown once per year in August/September, biomass removed

About Solar Parks in Germany

- The Renewable Energies Act promotes the construction of renewable energy in Germany and facilitates a feed-in tariff for them
- Schwill et al (in prep.) found that in Germany solar parks were also built on more than 600 ha of peatlands and that solar parks on drained peatlands increase their GHG emissions by 38 - 72 %
- Since 2023 the Renewable Energies Act was recast and the feed-in tariff was adopted for peatlands: There is no new feed-in tariff for solar parks on drained peatlands anymore but a special feed-in tariff if the peatland is rewetted (so called „peatland-pv“). Requirements for this “peatland-pv” were defined by the Federal Network Agency. However, the European Commission has yet to confirm this
- If solar parks are financed via power purchase agreements, the requirements of the Renewable Energies Act can be circumvented. This would maintain the area's continuous greenhouse gas emissions from the drained peatland. Rewetting of the area is more difficult or even prevented by a PV system that is not adapted to high groundwater levels.
- But there is still a huge knowledge gap on the impacts of solar parks on rewetted peatlands and the impacts of rewetted peatlands on a solar park

Research

- The goal is to understand the effects of a solar park on rewetted peatlands, so that we can get an impression under which conditions solar parks could be an appropriate land use on rewetted peatlands
- Research project “Moor-PV”, 2024/01-2026/12, funded by Joachim Herz Stiftung (—> Poster Hohlbein et al.)

- Greenhouse gas exchange: measurements with chambers (—> Poster Gutekunst et al.)
- Biodiversity: Acoustic monitoring and traditional field surveys (—> talk Martens et al.)
- Economics (—> talk Pump et al.)

Stop 2: Paluboard in Preetz

Site Description

- Preetz, a small town south-east of Kiel, in the federal state Schleswig Holstein
- Start-up Planterial has created the paluboard
- The paluboard is made from biomass from rewetted peatlands and can be used to install green roofs
- Planterial stands for innovative, plant-based materials that protect the climate and the environment: “With our latest product, the Paluboard, we are revolutionising green roofs. This substrate made from paludi-biomass combines active climate protection with climate change adaptation and makes green roofs more efficient and sustainable.”

Links

Research project Moor-PV: https://moorwissen.de/moor-pv.html

Solarpark in Lottorf: https://wattmanufactur.de/moor-pv.html

Renewable Energies Act: https://www.gesetze-im-internet.de/eeg_2014/BJNR106610014.html

Requirements of the Federal Network Agency for “peatland-pv”: https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Energie/Unternehmen_Institutionen/Ausschreibungen/Solar1/BesondereSolaranlagen/Festlegung.pdf?__blob=publicationFile&v=1

Paludboard: https://www.planterial.de/paluboard