

## **ENERGETIC UTILIZATION OF BIOMASS FROM REWETTED PEATLANDS**

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The global biomass demand for food and fodder as well as for energy production will continuously increase in the near future, leading to increasing pressure on land use. For example, agriculture and forestry on drained peatlands will substantially change the physical, biological and chemical soil properties and results in peat degradation, accompanied by huge emissions of greenhouse gases. Peatlands cover an estimated area of ca. 400 million ha, equivalent to 3 % of the Earth's land surface [23]. According to FAO only 15 % of peatlands are drained and used for agriculture, grazing, peat mining and forestry, especially for bioenergy plantations, but causing almost 6 percent of total anthropogenic CO<sub>2</sub> emissions and almost 25 percent of the GHG emissions from the entire land use [10]. Since November 2018, HTW in collaboration with Greifswald University started a new and innovative research project, studying the production of biomass on wet peatland sites and the optimization of the thermal utilization of such biomass sources in small and medium scale applications, e.g. household systems and centralized heating plants for communities. The project is therefore focused on an alternative opportunity of using peatlands for bioenergy production, avoiding soil degradation and reducing fossil fuel based GHG emissions by replacing such fuels. Several peat forming plant species such as Common Reed, Reed Canary Grass Sedge species can be produced on rewetted peatlands. Common Reed (*Phragmites australis*) e.g. grows rapidly and the annual yields will reach under Central European conditions between 3.6 up to 43 t dry matter per ha and year (depending on water level, nutrient availability and pH values) [31]. The heating value of reed (17.7 MJ/kg) e.g. is remarkable and comparable with *Miscanthus*. Modified conventional agricultural technologies are suitable to harvest, compact, transport and store the reed and well established conversion technologies as e.g. boiler technologies for straw can be used for the utilization of the reed biomass. The presentation and the respective publication of the related paper will introduce the first results of this research project, including the results of measuring campaigns, carried out at a 800 kW heating plant for community heating in Malchin (Mecklenburg Western Pomerania) during February/March 2019.