



Spatio-temporal modelling of electrical supply systems to optimize the site planning process for the “power to mobility” technology

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The transformation of the energy sector towards decentralized renewable energies (RE) requires also storage systems to ensure security of supply. The new “Power to Mobility” (PtM) technology is one potential solution to use electrical overproduction to produce methane for i.e. gas vehicles. Motivated by these fact, the paper presents a methodology for a GIS-based temporal modelling of the power grid, to optimize the site planning process for the new PtM-technology. The modelling approach is based on a combination of the software QuantumGIS for the geographical and topological energy supply structure and OpenDSS for the net modelling. For a case study (work in progress) of the city of Straubing (Lower Bavaria) the parameters of the model are quantified. The presentation will discuss the methodology as well as the first results with a view to the application on a regional scale.