Sustainability assessment of two chains of biomass supply from field to bioenergy - DTU Orbit (18/03/2019)

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LogistEC, “Logistics for Energy Crops biomass”, is an FP7 Project aiming at developing new or improved technologies of the biomass logistics chains (http://www.logistecproject.eu/). Sustainability assessment of different biomasses is being performed by studying the environmental, economic and social impacts, based on the supply chain of two existing bioenergy plants, located in France (Bourgogne) and Spain (Extramadura), respectively. Our contribution to the project is part of the environmental impacts analysis and it is divided into two steps: 1) sustainability assessment of the systems by using emergy analysis, a method that accounts for all forms of energy, resources and human services that contribute to the system; 2) combination of all assessment results (coming from emergy, LCA, economic and social evaluations) in a Sustainability Multicriteria Multi-scale Assessment (SUMMA) framework. We present some results of the emergy evaluation for the French scenario, where Miscanthus is the energy crop used to produce pellet. In particular, results for each phase (i.e., growing, harvesting, transportation and pelletization of Miscanthus) are described.

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