Water-ReUse in Industrial Parks

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Industrial parks usually rely on the availability of water. Therefore, especially in times of climate change, shortage of resources and the increasing importance of environmentalism, it is crucial to ensure a sustainable water supply. With the aid of an integrated water management – a sustainable and economically feasible treatment and reuse of wastewater flows based on the principle “fit for purpose” – the demand for water from natural resources can be reduced, raw materials retrieved from the wastewater and as a result, costs can be cut. Furthermore, this concept can be an opportunity for industrial developments in regions with natural water shortage (e.g. in parts of South-East-Asia). Especially for the chemical-pharmaceutical industry there is a high application potential, because it is one of the industries with the largest water requirement as well as large amounts of wastewater (Ante et al. 2014).

Proceeding from the initial situation of the water management in most industrial parks, which can be described like: tap, ground or surface water is used for the water supply and usually the park intern waterworks provides three different water quality types – drinking water, industrial water with a lower quality for instance for cooling purpose and highly purified water. The wastewater is proceeded in a central wastewater treatment plant, which discharges the treated wastewater back into nature or to a further municipal wastewater treatment plant. The approach of the research project “Water-ReUse in Industrial Parks – WaReIp” is it to generate new water-reuse concepts for those industrial parks, whereby several wastewater flows can be treated differently and as a result e.g. new cross-company water loops can be closed. The contribution will present first results coming from literature and case study analyses as well as expert interviews in Germany, China and Vietnam and will point out identified challenges and potentials.