ABSTRACT

Towards zero water input at the river island of Wilhelmsburg, Hamburg

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The river Island of Wilhelmsburg, some 40 km2 of lowland between two branches of the river Elbe and now a mixture of green agricultural land, brown industrial areas and residential areas, was chosen to be converted in an example of water and energy self-sufficiency. SWITCH contributes to this desire and envisions an area with a zero net input of water. This can be accomplished by a combination of measures such as:

- the use of groundwater pumped up from underground sand pockets for drinking water purposes,
- restrictions in the use of certain chemicals by islands residential and industrial/agricultural water users,
- water minimization and internal reuse of water,
- (waste-)water treatment focused on direct (irrigation from surface storage of treated water) and indirect (infiltration of treated water in underground aquifers for later recovery), and
- rainwater discharge in surface water through infiltration mounds.

Moreover, the project intends to accommodate areas with varying water levels inside the island in times of high water levels in the surrounding Elbe river by creating water-based and floating residential areas.

Although energy self-sufficiency is not an integral part of the Wilhelmsburg SWITCH contribution, the energy-water footprint will be considered in parallel with the water footprint of the habitation of the river island.