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Integrated Water Approach and Urban Water Reuse

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The implementation of European Union (EU) legislation on water and land has been identified as one of the top challenges in the recent research from European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) because difficulties at several levels, such as the transposition of EU legislation into national laws as well as the setting of environmental objectives and plans in Member States and the enforcement of the requirements, for example through permitting and inspection regimes.
In this framework, one of the current searches involves the study of good practices in urban and industrial water management through the reuse of treated wastewaters as an alternative water source, through a project named "Integrated Water Approach and Urban Reuse", which deals with the Industrial Emissions Directive (IED) and the Water framework Directive (WFD).
During 2017, the project focused on the industrial sector, namely on oil refinery and pulp & paper industry, and its aims were collecting and comparing procedures that are used within Europe for water resources management and protection in these industrial sectors and identifying new approaches for reducing fresh water consumption and innovative technologies for industrial water treatment able to provide energy saving, sludge production minimization and water reuse for multiple purposes.
The methodology used was a survey to collect the information on water management in industry within EU. This survey has been carried out by means of questionnaires filled in by people that are responsible or involved in environmental permitting, monitoring, compliance promotion and assessment, enforcement action, industry sector associations etc.
The responses obtained by the survey allowed the identification of principles, requirements, drivers and barriers in the industrial water management sector and selected several case studies/experiences. The IED requirements and the WFD requirements for industrial water management were also compared and identified main challenges.
The information collected and treated allowed the development of a guidance document, that includes a check list and suggestions for IED/Wastewater discharge permit writers to share among IMPEL members and other non-IMPEL participants including for example the IPPC Bureau, European Environmental Agency and industry sector associations.
During following year the project purposes to test one sector in practice with a selected industrial operator.
Regarding that the reuse of treated wastewater can be an important tool to contribute as a local solution to achieving the objectives of the WFD and to contribute to a more resource efficient economy as well as to adapt to climate change, namely in cases where water scarcity is identified as a significant pressure, during 2018, the study will also be extended to the water urban cycle though the exchange of current best practices with respect to water reuse of treated urban wastewaters for agriculture irrigation.