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Source Classification Framework for an optimized European wide Emission Control Strategy

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1. Short abstract

European legislation such as the Water Framework Directive (WFD) from 2000 and the Environmental Quality Standards Directive and the Marine Strategy Framework Directive both from 2008 focus on a range of priority substances (PSs) with the aim of obtaining an ecological and chemical healthy environment. This should be obtained through reducing releases or phasing out of discharges said chemicals. In order to appropriately design emission control strategies (ECSs) and monitor releases before and after implementation of various measures it is required to identify pollution sources and releases, and thereby establish an appropriate inventory containing such information. Suited for this purpose a Source Classification Framework (SCF) was developed. It consists of harmonized European classification codes for economic activities and emission processes combined with the CAS# for the PS as well as an urban structure descriptor. It also includes a release profile descriptor and when ever possible the release factor describing the extent of PS release from a given pollution source, i.e. commodity or activity. It has been possible to establish PS emission inventories for a given catchment of an urban environment by testing the approach on a range of the PSs listed on the WFD, and thereby identify potential problematic pollution sources. To the extent published data on release factors allows it, it has also been possible to quantify PS load to the considered catchment and thereby compare with European environmental quality standards for the considered PSs. The developed SCF emphasized the need for further knowledge and research within the area of quantification of PS releases from given commodities and activities. These release factors are required for a more thorough, solid and valid quantification of the PS environmental emission. The SCF also provides a well structured approach for European pollutant source and release classification and management. With further European wide implementation, the SCF has the potential for an optimized ECS in order to obtain good chemical status of European water bodies.