ABSTRACT

The Centre for Best Available Techniques (BAT) is founded by the Flemish Government and is hosted by VITO. The BAT knowledge centre collects, evaluates and distributes information on environmentally friendly techniques. Moreover, it advises the Flemish authorities on how to translate this information into its environmental policy.

The aim of the study is to provide Flemish policymakers and involved sectors with an overview of the techniques for treating and valorizing concentrate streams. After all, good management of the treatment and valorisation of concentrate streams is crucial for the successful application of water purification techniques for extensive water reuse.

The analyzes in this study were based on research results from relevant literature and research projects, supplemented by surveys and interviews with experts. The study does not aim to provide a ready-made answer to every concentrate issue but can be regarded as a preparatory step for a possible later integration in a horizontal study on water conservation and concentrate management as well as for an update of BAT studies for specific sectors. The formal consultation was organized by means of an advisory committee with representatives of the sector and Flemish Government.

In this cross-sectoral study, the techniques that are currently being used in Flanders (or elsewhere) or have potential for the treatment and valorisation of concentrate streams are inventoried. These techniques are divided into 5 categories in this study: membrane-based techniques, thermally based techniques, advanced oxidation techniques, biological techniques and various techniques. In addition, the study also contains valorisation options for recovered substances (salts, metals, nutrients, chemicals) and water.

Subsequently, these techniques are evaluated regarding the stage of development, effectiveness and financial aspects. This makes it possible to check whether the techniques meet the BAT criteria or can be regarded as emerging techniques. The preconditions regarding the application of these techniques are in many cases decisive for their applicability in practice as well as what is intended, e.g. the recovery of salts, metals, nutrients and/or chemicals, in addition to the recovery of water.

Finally, recommendations are formulated regarding subsidy regulations and for further research and technological developments.