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ESPP input to the EU consultation on the Urban Waste Water Treatment Directive

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ESPP considers that the Urban Waste Water Treatment (UWWT) Directive (and the Nitrates Directive) are key backstops of EU water and environmental policy.

Because it is command-and-control, the UWWT Directive provides clear minimum requirements which are coherent with the more ambitious and holistic approach of the Water Framework Directive (WFD). These UWWT Directive requirements provide quantified specifications necessary to ensure implementation and EU-level infringement enforcement. **The UWWT Directive has led to large improvements in sewage collection and treatment, and so very significant water quality improvements in many Member States**[i] **often because of EU verification and infringement procedures.**

However, we suggest that the field of the UWWT Directive should be extended to take into account not only "removal" of nutrients from waste waters, but also recovery and recycling (nutrient circular economy).

Phosphorus is one of the most critical parameters leading to failure to achieve Water Framework Directive quality objectives (e.g. phosphorus is the most important cause of failure to achieve quality objectives for UK water bodies, other than morphological modifications). Still today, over a quarter of England's rivers and lakes suffer from "very certain" eutrophication, and 50% of river water bodies show phosphorus levels too high for Water Framework Directive good ecological status, with around 2/3 of phosphorus loads to freshwaters coming from sewage works[ii]. Considerable further work is therefore needed to further reduce phosphorus emissions, both from municipal wastewater and from agricultural losses. In many ecosystems, eutrophication impacts occur even with very low water phosphorus levels, and this is accentuated by climate change and by the presence of legacy stocks of phosphorus in both soils and aquatic sediments. Phosphorus was also added to the Groundwater Directive listed substances in 2013.

It is therefore important to maintain the phosphorus removal requirements of the UWWT Directive, as a minimum requirement in eutrophication sensitive areas, whilst specifying that **lower phosphorus discharge limits**, **phosphorus discharge limits for smaller sewage works** (< 10 000 p.e. agglomeration), additional nitrogen removal requirements or catchment-level phosphorus emissions trading systems may be required to achieve WFD Directive objectives – in addition to and beyond the UWWT Directive requirements.

We support the **EU Court of Auditors recommendations** (special report n°2, 2015) to tighten discharge limits to take account of technological progress, but also to improve cost-recovery to ensure sustainable financing of wastewater infrastructure. In particular, it should be clarified that **"appropriate" treatment (agglomerations < 2000 p.e.)** under the UWWT Directive should ensure phosphorus removal in eutrophication sensitive areas, subject to catchment permitting (see below).

Addressing eutrophication will in many cases require further reductions in phosphorus emissions beyond current UWWTD requirements, both to reduce water-body phosphorus concentrations, and also to avoid accumulation in sediments. In order to optimise cost-effectiveness and minimise environmental impacts (energy consumption, chemicals inputs) **catchment permitting or catchment level nutrient emissions trading** should be implemented, subject to ensuring that quality objectives are achieved at all points in the catchment.

Achieving lower phosphorus emissions, and phosphorus removal in smaller sewage works, will imply energy consumption, materials and chemicals, and will both increase the quantities and modify the nature of sewage biosolids (dewaterability, nutrient content, chemical content such as polymers, flocculants, reactants). This should be considered when defining phosphorus discharge consents, in particular implications of **valorisation of sewage biosolids** (methane production, return of stabilized organic carbon to soil, nutrient recycling).

Support is needed for large scale testing and monitoring of technologies and systems, by water companies, to achieve low phosphorus discharge consents (below 0.5 mgP/l) and to enable cost-effective (investment, maintenance) phosphorus removal in small sewage works. A range of technologies today exist[iii], but performance and cost in real operating conditions in sewage works, with variable flows, climate, maintenance by works staff, etc. need to be improved.

Support, regulatory enabling and assessment is also necessary for **catchment nutrient discharge trading systems**, or similar, to develop reliable and quantifiable approaches to achieve Water Framework Directive objectives at optimal cost/resources, whilst continuing to take as minimum requirement for all sewage works the UWWT Directive phosphorus removal specifications.

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Concerning the text of the UWWT Directive we draw attention to following definitions:

- "Agglomeration" (art. 2.4) : clarify that this refers to the population and/or economic activities in an area which could potentially be collected and conducted to one treatment plant (not as sometimes interpreted, only currently collected)

- "Appropriate treatment" (art. 2.9): clarify that this will generally mean phosphorus removal in eutrophication sensitive areas, or inclusion in a catchment management approach including overall phosphorus reductions

- "Sensitive areas" (Annex II): revise the specification "or which in the near future may become eutrophic if protective action is not taken"
  - climate change should be taken into account. We suggest to change from "near future" to "foreseeable future" or to simply delete "near"
  - the term "eutrophic" (not defined in the Directive) should be replaced by "subject to eutrophication" (defined in art. 2.11)

We support the EU Court of Auditors recommendations (special report n°2, 2015) call to require **appropriate valorization of sewage biosolids, including nutrient recovery or recycling and also valorisation of organic carbon**, by energy recovery and/or return of stabilized organic carbon to agricultural soils subject to appropriate treatment and safety requirements (important for soil productivity, crop drought resistance and climate resilience, and for the Paris 4/1000 soil carbon objective) and (phosphorus and nitrogen, micronutrients). This should be included into the UWWT Directive.

The Directive should specify that if sewage biosolids are valorized on land, it should be ensured that nutrients are not then lost into surface or ground waters, and that nutrients should only be applied to correspond to crop needs (e.g. not apply up to crop nitrogen needs resulting in excess phosphorus application).

The European Sustainable Phosphorus Platform (ESPP) brings together a range of industry sectors and stakeholders concerned with sustainable phosphorus management, for which core aspects are reducing phosphorus losses to the environment (eutrophication) and developing phosphorus recycling.

[i] Deloitte - IEEP review ("Support to Fitness Check Water Policy", 2011)
[ii] Simon LEAF, Environment Agency, in SCOPE Newsletter n°124 www.phosphorusplatform.eu/scope124
[iii] EWWM Conference July 2018, in ESPP eNews n°26 www.phosphorusplatform.eu/eNews26