

EU activities and plans to address plastics and microplastics in the aquatic environment

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Marine Strategy Framework Directive 2008 Good Environmental Status (by 2020): "the properties and quantities of marine litter do not cause harm to the coastal and marine environment"





Green Paper 2013

- First systematic approach to plastics in the environment at European Union level
- Made reference to the problem of microplastics and the issue of chemicals in and adsorbed to microplastics
- Cited UN statistic that 80% of marine plastics come from land-based sources
- Examined several policy options to improve the management of plastic waste in Europe
- Served as a basis for a public consultation



Green Paper 2013 policy options

- Application of the waste hierarchy to plastic waste management
- Achievement of targets, plastic recycling and voluntary initiatives
- Targeting consumer behaviour
- Towards more sustainable plastics
- Durability of plastics and plastic products
- Promotion of biodegradable plastics and bio-based plastics
- EU initiatives dealing with marine litter including plastic waste
- International action



Plastic Bags Directive 2015

- Public consultation in 2011
- Directive on single-use plastic bags adopted in 2015
- Implementation underway in Member States
- Very significant reductions in use





- Deposit onto or into land
- Land treatment and release into water bodies
- Incineration/disposal
- Incineration/energy recovery
- Backfilling
 - Recycling

- Low levels of recycling-high levels of landfilling
- Incineration of recyclable waste
- No long-term targets

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Circular Economy Package adopted by the Commission 2 December 2015



5 priority sectors







50 actions between 2015 and 2018/2019 – involving several policy areas

- **Ecodesign** to include reparability, durability, recyclability
- Actions on **Green Public Procurement**
- Funding of €650 million for `Industry 2020 in the circular economy'
- Legislation on **fertilisers**
- Interface between chemicals, products and waste legislation
- Proposals on **waste**
 - More prevention
 - Long-term recycling & re-use targets
 - Landfill restrictions
- Proposals on marine litter, water reuse



Aspirational target of 30% reduction in marine litter by 2020

- Baseline needed JRC working on
- Programmes of measures under MSFD being assessed in 2016/2017

Strategy on plastics to be established by 2017

- Major aim to reduce marine litter
- Consideration of recyclability/biodegradability and bio-based plastics
- Vision/actions on microplastics
- Strategy for most-found items

In the waste proposal:

- Higher recycling target for plastics (55% by 2025), to be defined for 2030
- Litter to be included in waste management plans
- Common rules on Extended Producer Responsibility (EPR)



Recent studies

- Mudgal et al (2011) Plastic Waste in the Environment
- van der Wal et al (2015) Identification and Assessment of Riverine Input of (Marine) Litter
- Sherrington et al (2016) Study to support the development of measures to combat a range of marine litter sources
- Oosterbaan et al (2016?) Riverine Litter Monitoring – Options and Recommendations (JRC Technical Report)

How much litter is in the sea?	How much plastic is added annually?	How much of the annual incr. is micro- plastics?
Over 150 million tonnes	5 to 13 million tonnes (from Jambeck et al.)	No reliable estimates
2 to 5 million tonnes	150,000 to 500,000 tonnes (about 80% from land-based sources)	80,000 to 220,000 tonnes (primary sources) 70,000 to 275,000 tonnes (secondary sources)

Source: Sherrington et al (2016) Eunomia report for European Commission DG ENV (adapted)









Water Framework Directive 2000/60/EC

Objectives: Good ecological and good chemical status by 2015 Assessment of 2nd RBMPs in 2016-17 **Review of the Priority** Substances List Review of the Groundwater Directive Review of the WFD by 2019





Riverine litter

- Rivers = vectors
- In the context of the Water Framework Directive Member States must report on the presence of litter, if they are taking measures to address it
- New studies in preparation (with JRC), addressing technical aspects of riverine litter monitoring, aiming at harmonised and regular monitoring, development of modelling tools (considering river flow, meteorological information, and population and other socio-economic data) and at an EU floating-litter observation network



Microplastics in sediments

"Very recent research suggests that deep sea sediment could be a significant sink for marine litter. **Even plastics which would normally be buoyant in sea water can sink if they are biofouled by microbial communities.** Sediment sampling tends to concentrate on microplastics; their concentration in sediment has been found to be up to 30,000-130,000 times the level of concentration by particle count found in surface waters. However this was taking into account fibres of a size far below that considered in typical floating litter surveys."

Sherrington et al (2016) Eunomia report for European Commission DG ENV



The importance of links – and some other ongoing/forthcoming initiatives

- WFD-MSFD links (including in context of revision of the GES Decision)
- Review of the Drinking Water Directive
- Refit of the Urban Wastewater Treatment Directive
- Innovation Partnership on Water
- Fitness Check of Chemicals Legislation
- Community Strategy on Endocrine Disruptors
- Mixtures follow-up of Council Conclusions
- Non-toxic environment strategy
- Information Platform on Chemical Monitoring (IPCheM)
- EFSA opinion on micro- and nano-plastics in seafood



Plastics in the environment - a *shared* footprint

- International (incl. UNEP)
- Regional (e.g. HELCOM)
- "Domestic"

 (European/ National/ Sub-National)





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