



# OCEAN WISE

Linkages between the  
OceanWise Project and  
the European Green Deal

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## History

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## Introduction

The European Green Deal document was published in December 2019. By publishing this document the European Union (EU) Commission acknowledged that it is possible for the EU, with its policies and actions, to help deliver far-reaching positive outcomes, through more integrated and better policy-making which puts sustainability at its centre, while meeting the needs of its citizens.

When the OceanWise project was originally conceived in 2015/2016, concerns about marine litter and its potential for environmental harm were largely the preserve of policy makers and legislators, together with some NGOs, researchers and stakeholders such as fishermen and divers. By the time the project commenced in early 2018, there was far greater concern and awareness by both businesses and consumers about the pollution in our seas and found on our beaches caused by poorly managed waste and litter, particularly plastics. In light of this development, the OceanWise project could be described as timely, focusing as it does on two specific materials which form a significant part<sup>1</sup> of the marine litter problem, namely products made from Expanded Polystyrene (EPS) and Extruded Polystyrene (XPS).

When a project such as this runs for more than three years, there is always a risk that the project outputs will be out-of-date by the time the project is completed. The OceanWise project, which will include concrete recommendations and proposals for the improved management of end-of-life EPS and XPS products, will publish its final report in Q4 2021. This will coincide with the review of existing policies and the drafting of new policies under the Green Deal programme. This leaves it well placed to help inform legislators in reviewing policy areas, particularly those linked to the implementation of the 'Single Use Plastics' and Waste Framework Directives.

It should be noted that OceanWise research has confirmed that any EPS and XPS left at the end of production by EPS and XPS product manufacturers is added back into the start of the production process. Therefore there is no 'waste' EPS or XPS at this stage of the manufacturing process. The end-of-life and EPS and XPS products referred to in this document are those items which have been used by businesses and consumers for a specific purpose, such as packaging for food, equipment and other items.

## Links between OceanWise and the Green Deal

There are many linkages and areas where the OceanWise project dovetails with the Green Deal objectives:



1. The overall aim of the OceanWise project is “to develop long-term measures to reduce the impact of EPS and XPS in the North-East Atlantic Ocean”. By finding ways to better manage these materials at end-of life, it should be possible to reduce the amounts that are found as marine and beach litter. This feeds directly into the stated aim of the Green Deal to “.....protect, conserve and enhance the EU’s natural capital....”. It also links to the plan for Member States to restore more effectively the areas covered by the Natura 2000 network, many of which lie on the edge of the North-East Atlantic.

2. One of the overarching goals of the Green Deal is to increase the use of recycled materials so that the need for virgin resources is lessened. There are already a number of initiatives where used EPS<sup>ii</sup> and to a lesser extent XPS, are captured by industrial users and recycled into new products. There are also companies targeting specific industries, such as fish processing<sup>iii</sup>, where they are collecting and compacting the used EPS fish-boxes and selling the material for recycling into garden furniture. As long as this material is recycled, it is displacing the use of new resources. Thus the OceanWise project links to the Green Deal by showcasing successful recycling operations and in so doing, encouraging more organisations to explore ways in which they can improve their recycling rates or use recycled material in new products. If EPS and XPS products are better managed and the rate of recycling increases, then the demand for virgin resource is reduced, the less non-renewable resources are used and there is lower potential of leakage of waste items into the marine environment.
3. Linked to this is the OceanWise project objective to highlight the fact that both EPS and XPS are already 100% recyclable, a fact which often gets overlooked. While reuse options are limited, particularly where items have been used as food packaging, used EPS can be recycled into food-grade polystyrene (PS) containers, (successfully trialled at the EPS Life Sure project<sup>iv</sup>) and even waste EPS carrying flame retardant can be recycled into new building products (the PolyStyrene Loop project<sup>v</sup> is ongoing). This is an important link to the Green Deal aim of making it a requirement that all packaging in the EU market is reusable or recyclable in an economically viable manner by 2030. EPS and XPS already meet these criteria and OceanWise project deliverables should encourage more businesses to develop the required recycling infrastructure or ensure that their waste EPS/XPS is actually captured and recycled.
4. Following on from the above is the Green Deal aim to make it mandatory for construction materials to have a minimum recycled content amount. EPS and XPS are already widely used in construction (such as insulation and sound-proofing systems) and engineering applications (such as bridge and foundation building); recycled EPS and XPS could be used in the same manner if there was enough material available for companies to incorporate it into their manufacturing processes. It is hoped that the OceanWise project reports will help to drive an increase in the amount of recycled EPS and XPS available to the construction industry.

5. Two of the strongest links are the twin OceanWise objectives of:
  - a) reviewing alternatives to EPS and XPS where possible, and
  - b) increasing the rate of recycling where EPS and XPS cannot be replaced.

Before the Green Deal paper was published, the EU had already recognised that the linear model of “take, make, use and dispose” is not sustainable, leading to the publication of its Circular Economy Plan in 2015. The Green Deal explicitly states that markets for climate neutral and circular products are to be developed under a new policy framework – both EPS and XPS products fit within in these categories. So too should their alternatives and substitutes; for example, the SEAclic Boxes by *Storopak*, recent winners of the Ocean’s Calling competition<sup>vi</sup> run by Sociedade Ponteverde, the OceanWise partner in Portugal.

6. The OceanWise research to date has indicated that, while there are a small number of large EPS and XPS manufacturers / transformers<sup>vii</sup>, it is also an industry that supports a large number of micro- businesses and SMEs, particularly in Italy. The systems required to compact and recycle EPS and XPS can be quite labour intensive and many of the companies involved in recycling are small businesses. In promoting the development of more recycling infrastructure for EPS and XPS waste products, which should generate additional employment, the OceanWise project is linking to the Green Deal objectives of encouraging job-intensive activity and ensuring a Just Transition for those workers whose current employment may not be environmentally sustainable. OceanWise will welcome the opportunity to share outputs and knowledge with any relevant projects funded under the Programme<sup>viii</sup>, particularly under the areas of ‘Industry for a clean and circular economy’, ‘Energy and resource efficient buildings’ and the two horizontal areas of ‘Strengthening knowledge’ and ‘Empowering citizens’, which offer a longer-term perspective in achieving the transformations set out in the European Green Deal.
7. The OceanWise research indicates that policies to manage EPS and XPS products, in the absence of a specific EU Directive, are designed and implemented at local and regional levels but rarely at national level. This results in very uneven recycling rates across European Economic Area Member States. For instance, project research to date estimates that the recycling rate for EPS in Denmark is 17%, while in Norway it is 70%. OceanWise’ primary objective is to develop recommendations that could be included in future Directives and therefore cascade down to the national level. Making recycling economically viable needs sufficient scale and a common approach by Member States could help to provide the economies of scale required to develop more EPS and XPS recycling infrastructure. Shared learnings and cooperation between

countries link directly with the Green Deal aim of developing a ‘sustainable products’ policy based on a common methodology and principles as the design of all products will have to include end-of-life management. It also links to the ambition that where waste cannot be avoided, the economic value must be recovered.

8. The Green Deal aspirations to double the rate of energy efficiency initiatives and renovations, to enforce the existing legislation relating to the energy performance of buildings, and to create more sustainable school buildings, will all help to stimulate increased demand for products like insulation. The OceanWise project intention, to showcase the potential for increased recycling opportunities as referenced previously, dovetails neatly as there is plenty of end-of-life EPS and XPS available for collection and recycling. These case studies should clearly demonstrate that there are opportunities for much more waste product to be recycled into the fabric of buildings and by so doing, displace the use of new materials. This aspect of the project also ties into the Green Deal planned renovation wave to tackle energy poverty, as better insulated homes require less energy for heating and cooling.
9. When an EU Directive, such as the Waste Framework Directive, is passed each Member State is required to transpose it into their national law. These Directives can be months and even years in the planning and drafting with many revisions and amendments being made before they are passed into law. Each Member State’s transposition process takes further time, although Directives generally stipulate a date by which they must be transposed. The Green Deal ambition, to review both existing legislation and ensure future policies are better informed is a timely one. Part B of the ‘Directive on the reduction of the impact of certain plastic products on the environment’ (Directive (EU) 2019/904) clearly states<sup>ix</sup> that food containers made of EPS, which are used to contain food which is intended for immediate consumption, shall be restricted from being placed on the market from 2021. However, the Directive is not explicit in relation to items made from XPS; this is despite the fact that, anecdotally, OSPAR beach litter surveyors report XPS food packaging as more commonly found than EPS. The OceanWise project, which will report on both materials, may help to drive discussion and consideration of the treatment of XPS food packaging under the Directive. It may also inform the detailed guidance that is currently being prepared by Ramboll<sup>x</sup>, as it supports the European Commission in the development of implementation documents for Member States. This feature of the project also links to the Green Deal ambition for better regulation.
10. A very tangible output of the OceanWise project will be the identification of alternative materials that may, in certain circumstances, replace EPS and/or XPS. Rigorous testing of new products/materials is already underway to identify those EPS

and XPS products that could be made from more sustainable (renewable) alternatives. Where it is not feasible to replace EPS and XPS, there is a focus on recommending ways to increase the recycling rate. These outputs feed into the Green Deal aims of finding more sustainable products and the waste reduction targets envisaged in the paper.

11. OceanWise project research has found that there are several reasons why EPS and XPS are used as materials for packaging, including their temperature control properties, lightness and ability to protect even the most delicate goods, particularly during transport. These are some of the factors behind the widespread use of EPS and XPS in the food logistics chain, particularly EPS in the transit of fresh fish, fruit and vegetables and XPS in the delivery of packaged meat and hot food for immediate consumption. Their use can mean less fresh and cooked food goes to waste, which is central to the Green Deal support of the Farm to Fork strategy; it is hoped that the outputs of the OceanWise project will lead to a greater investment in the capture and recycling of end-of-life food-use EPS and XPS, which will make their continued use in the instances above more circular.
12. The Green Deal states that sustainable investment will be promoted, encouraging the financing of environmentally sustainable activities. It is intended that the OceanWise project outputs will encourage more businesses to examine the opportunities for investment in infrastructure, such as facilities for end-of-life EPS and XPS collection, compacting and recycling. Furthermore, identifying new products which utilise the recycled EPS and XPS could also have economic, social and environmental benefits. This will also help in enhancing the EU's reputation as a leader in developing the Circular Economy model across all Member States.
13. The OceanWise project team of 13 partners, which includes actors from the public sector, higher education, research institutes and private sector organisations, fits well with the Green Deal mission to promote and encourage greater collaboration between research organisations, higher education providers and companies. Extensive stakeholder engagement has been central to the OceanWise project since its inception. The Green Deal states that such multi-sectoral engagement is vital to the process of better and more informed policy-making.
14. The OceanWise project is unlikely to find that all EPS and XPS can feasibly be replaced by other materials and it won't be possible to recycle all EPS and XPS food packaging back into polystyrene food-grade material; however there are sufficient avenues for businesses and local authorities to recycle used EPS and XPS into other products. This



links to the Circular Economy objectives and the Green Oath ‘Do no harm’ of the Green Deal.

### Covid-19

At the time of writing, the Covid-19 pandemic has been raging across the EU for several months, exacting its toll on all sections of society, the economies of all European countries and the wider environment.

While it is heartening that the DG Environment of the EU Commission has already confirmed<sup>xi</sup> that the planned implementation dates for the EU Directive on Single Use Plastics are not due to be delayed, the material effects of Covid-19 on all Directives, and particularly those relating to the waste industry, have yet to be determined.

The Green Deal document was written before the Covid-19 reverberations were being felt in Europe. As it is a strategic policy document, how the roll-out of implementation the drafting of new legislation will be affected by Covid-19 remains to be seen. However, the ability of Member States individually, and the EU collectively, to quickly introduce legislation where it was needed, in order to deal with the crises presented by the arrival of Covid-19 in Europe, demonstrates that it is possible for countries and a large complex organisation like the EU, to pivot and react when necessary. This demonstrates that the ambitious plans outlined in the Green Deal document can be delivered by the target dates, if the will is there. The Green Deal can now be viewed as one of the cornerstones of the EU plan to “build back better” as all stakeholders recognise the importance of building climate-resilient economies and societies.

## Summary

The use of EPS and XPS across a range of industries will continue for the foreseeable future, given how well these materials perform against a range of criteria, be it temperature control, weight or protection of delicate products. But to date the recycling rate has been extremely low with a lack of any coordinated approaches taken in EU Member States to improve the situation. The OceanWise outputs, if used to inform better policy decisions will, in the longer term, help to realise improvements in the recycling rates for both waste EPS and XPS.

The entire OceanWise project is focused on how EPS and XPS products can be better used and managed at end of life, thus contributing to a more circular rather than linear use, linking it directly to the Green Deal document and the Circular Economy Action Plan.

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<sup>i</sup> OSPAR Commission, Beach Litter statistics from data collected in 2019, available at: <https://www.ospar.org/work-areas/eiha/marine-litter/assessment-of-marine-litter/beach-litter> Accessed October 2020.

<sup>ii</sup> EPS Garden Trays programme, details available at: <http://www.eps-gardentrays.nl/index.htm> Accessed October 2020.

<sup>iii</sup> WasteMatters, operating in Ireland, details available at: <http://wastematters.ie/> Accessed October 2020.

<sup>iv</sup> <sup>iv</sup>EPS-SURE Life Project, details available at: <http://www.life-eps-sure.com/en/the-project/>. Accessed 22 September 2020.

<sup>v</sup> PolystyreneLoop Project, details available at: <https://polystyreneloop.eu/>. Accessed 23 September 2020.

<sup>vi</sup> Ocean's Calling competition, by Sociedade Ponte Verde, details available at: <https://oceanscalling.pt/?lang=en>

<sup>vii</sup> Transformers are those businesses who take the EPS and XPS in 'bead' form and transform them into a range of products, such as packaging and insulation systems.

<sup>viii</sup> European Green Deal Call: €1 billion investment to boost the green and digital transition, published by the European Commission, available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_1669](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1669)

<sup>ix</sup> Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904&from=EN>. Accessed 21 September 2020.

<sup>x</sup> Ramboll, "Reducing the environmental impact of certain plastic products in the EU", new release available at: <https://ramboll.com/projects/germany/reducing-impact-of-plastic-products-eu>

<sup>xi</sup> DG Environment Spokesperson, details available at: <https://www.euractiv.com/section/circular-economy/news/eu-dismisses-industry-calls-to-lift-ban-on-single-use-plastics/>. Accessed 25 September 2020.