VALUING PLASTIC

SECTOR SPOTLIGHT: **AUTOMOBILES**

Plastic is one of the most useful and important materials in modern society. Life without the vast range of products and technologies it enables is almost unthinkable. But the environmental impacts of plastic cannot be ignored. Concerns are growing about its effect on the world's ecosystems, while its growth as a waste material is outpacing many of our collective waste management and recycling infrastructures. These issues are gaining increased attention from stakeholders, including shareholders, non-governmental organisations (NGOs), international institutions, governments, and the general public.

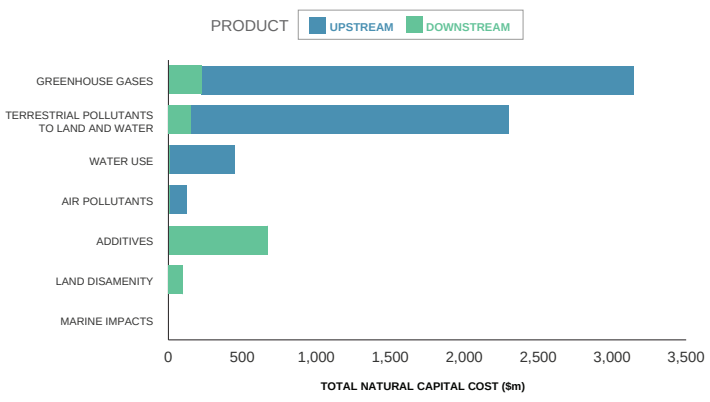
'Valuing Plastic' was commissioned by the Plastic Disclosure Project, with research conducted by natural capital analysts Trucost, and supported by the United Nations Environment Programme (UNEP). The objective was to help companies identify and manage the opportunities and risks associated with plastic use. In order to provide a sense of scale, the report quantifies the physical impacts of plastic translated into monetary terms using natural capital valuation.

The research considered 16 sectors of the consumer goods industry, and the disclosures of 100 listed companies. **The results show that the total natural capital cost of plastic used in the consumer goods industry is over $75bn per year,** and that many businesses are not yet prepared for the stakeholder attention this issue will receive.

The Automobile sector and its supply chain uses 9.9 tonnes of plastic per $1m in revenue annually. The natural capital cost of plastic directly used by this sector is estimated to be $7bn per year, representing 9% of the consumer goods industry as a whole.

Plastic is increasingly used in the automotive industry, from approximately 60 kilograms per car in the 1970s, to around 150kg at present. This is equivalent to around 10% to 15% of the total weight of a car, found in more than 2,000 parts. Plastic presents numerous advantages such as improved durability, corrosion resistance, design flexibility and high performance at low cost. Several types of plastic are used in automotive manufacturing, ranging from polypropylene (28.6% by weight) to polyvinyl chloride (3.8%), mostly in the interior of the cars (52.5%), but also in the exterior and electric system.

Distribution of impacts for plastic-in-product



83% of impacts are located upstream (or $5.5bn) and 17% downstream (or $1bn). The most significant upstream impact is greenhouse gas emissions ($3bn), followed by land and water pollutants ($2bn). Downstream, the impact of unmanaged waste from chemical additives, land disamenity and marine litter is $760m. Of these, the impact of chemical additives is the most significant ($660m). The impact of managed waste is lower, at $380m, with greenhouse gases the most significant.

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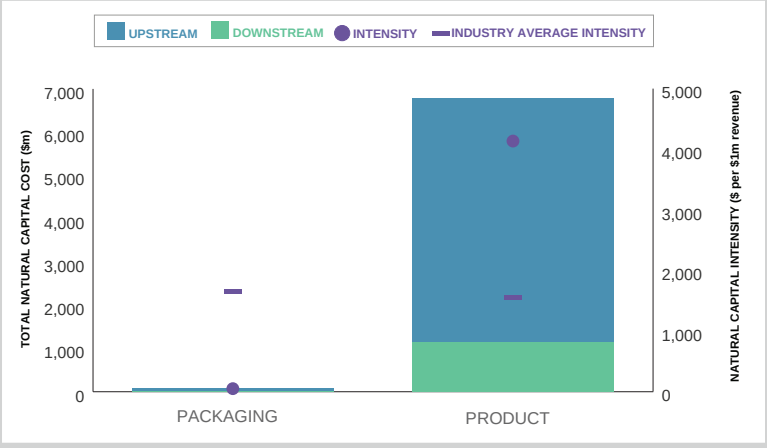
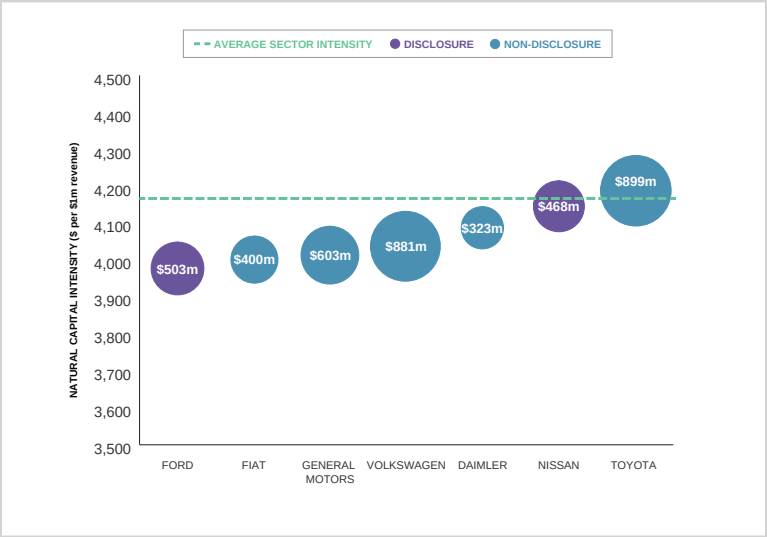
The objective of this ground-breaking report is to help companies manage the opportunities and risks associated with plastic use. It articulates the business case for companies to improve their measurement, disclosure and management of plastic use in their designs, operations and supply chains. **Risks** include the impact of tougher environmental legislation, carbon pricing schemes and chemicals regulation, damage done to the reputation of brands with relation to litter, clean-up costs and disruption to the plastic supply chain caused by resource scarcity and price volatility. **Opportunities** include cutting costs through more efficient use of plastic, developing new revenue streams through 'closed loop' business models, and winning customers by demonstrating more sustainable products.

Plastic Intensity for the Automobile sector



The total natural capital cost of plastic use by the automobile sector is $7bn per year, or 9% of the total natural capital cost of the consumer goods industry. The automobile sector has a modelled plastic-in-product and plastic-in-packaging intensity of over 4 and less than 1 tonnes per $1m revenue respectively. Plastic-in-packaging accounts for 1% of the overall natural capital cost, while plastic-in-product accounts for 99%, mainly in the upstream stage (82%). This amounts to a total natural capital intensity higher than $4,000 per $1m revenue, or 0.4% of total revenue. The risk related to plastic-in-packaging, expressed by the natural capital intensity, is significantly lower than that of the overall industry. However, the risk related to plastic-in-product is higher, meaning that on average the automobile industry is more at risk from plastic than other sectors.

Estimated Natural Capital Cost and Intensity of Selected Companies



The figure on the left displays the estimated natural capital cost and intensity of selected companies. Three companies in the peer group disclosed useable data; all the rest is modelled. As such, any comparisons should be taken with care. Ford has the lowest overall intensity and Toyota the highest due to their geographical sales, as Ford sells more in the US and Europe, while Toyota's primary market is Asia. Toyota and Volkswagen have the higher total natural capital cost due to their high revenue. Nissan and Ford disclosed data points on use of recycled content that have been used to model their total natural capital cost. All other companies mentioned qualitative information that could not be integrated and are thus modelled.

**Company specific results are based on a combination of modelled and publicly disclosed data, and should NOT be used to compare companies performance due to limitations in methodology, scope and available data. Refer to the full 'Valuing Plastic' report for the complete methodology.*

The report concludes with the recommendation for companies to **measure and manage** their "plastic footprint" just as they measure their carbon, water or other sustainability related metrics, and publicly report their results, plans and progress on an annual basis. This recommendation was echoed by UNEP at the first ever United Nations Environment Assembly in June 2014, where the report was launched.

For additional information on the business case, research findings, methodology, case studies and summaries of other sectors, the report is available for free download at *http://bit.ly/PDPreport2014*. Contact the Plastic Disclosure Project or Trucost directly at the co-ordinates below to discuss the implications for your organisation.

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