To: UNEP – Business and Industry Major Group
From: Riaz Zaman on behalf of the World Coatings Council
Re: World Coatings Council contribution to the BIMG Lighthouse Report
Date: November 8, 2023

As the World Coatings Council, we are proud of what the paint and coatings industry has already achieved towards reducing emissions, addressing climate change, protecting biodiversity and reducing end-of-life disposal of paint products. The industry is committed towards advancing the United Nations' Sustainable Development Goals. Paint and coatings products contribute directly to sustainability by providing resistance and durability to the products to which they are applied. Paint and coatings offer vital functions for infrastructure, consumer goods and industrial applications; contribute to a safe and healthy environment for communities; and beautify and protect buildings and other goods.

Over the last few decades, the paint and coatings industry has worked hard to continually increase the sustainability of its products and manufacturing processes while maintaining their safety and effectiveness. The industry has consistently focused on substituting hazardous substances, while maintaining the quality and functionality of products. The industry has also consistently reduced energy and resource demand of our production processes, while enhancing the functionality, durability and energy savings of other products. In these efforts, it is important to recognize that various parts of the world are at different stages of implementing government-mandated requirements and best industry practices to improve sustainability. The World Coatings Council aims to provide each member with the resources appropriate to their abilities and legal requirements.

Coatings lower the environmental impact of products by enhancing product life.

Coatings not only contribute to making the initial construction durable, but also provide solutions for maintenance and refurbishment of existing structures. Steel is protected from corrosion, concrete from water and damage due to temperature variations, wooden structures may be shielded from mold and rotting. Notwithstanding the benefits a well-functioning infrastructure has to quality of life, the longer lifespan leads to a reduced demand for raw materials. This effect alone results in substantial savings for our economies while lowering environmental impacts associated with material production and use, end-of-life disposal, and product manufacturing and transport.

Coatings enhance functionality and lifespan of roads, buildings, bridges, water infrastructure, etc. For example, coatings for water transmission improve the pipeline infrastructure by providing an internal lining and a corrosion-resistant external coating, enabling transmission of both potable and non-potable water transmission. This facilitates resistance against chemical contamination.

Coatings play an important role in lowering energy consumption.

Heat reflective coatings can bring relief to areas affected by high temperatures. The industry has focused on developing solar-reflective products to lower energy consumption and limit the effects of the Urban Heat Island. In the context of climate change, paints with enhanced capabilities to reflect solar radiation play a major role in lowering building temperature. This helps businesses and homeowners to decrease their reliance on air conditioning, enabling them to save energy and decrease their carbon emissions as an added benefit. When applied on a larger scale, these paints contribute to cooling in cities and other large built infrastructures such as harbors or airports. Reflective roof coatings have been shown to reduce building cooling costs by 20% to 70%. Functional coatings used to coat windows to deflect heat have been shown to reduce residential energy costs by 9% to 18%.

Coatings also lower automotive emissions while enhancing renewable energy production. Current developments in coatings technology are resulting in lighter vehicle coatings so vehicles use less fuel and emit less. Coatings are essential for energy storage for electric and hybrid vehicles. Electrically insulating coatings help control temperature for superconducting batteries and extend vehicle battery life. External coatings with infrared-reflective pigments keep the vehicle cabin cooler to reduce the need for extra energy to power air conditioning, ultimately enabling electric vehicles to go farther on a single charge.

Coatings also play an important role in renewable energy production. Specialty functional coatings applied to solar panels allow for enhanced absorption of solar energy enabling greater electricity production. Protective coatings also play an important role in durability of wind turbines, allowing them to remain functional in challenging weather.

The paint industry has minimized use of VOC-containing solvents in architectural paint.

Since the 1970's, the industry has prioritized reducing worker and consumers exposure to VOCs (volatile organic compounds) from paints as part of a sector-wide commitment to product safety and good air quality. This has led to a significant reduction in VOC emissions from coatings. Low or near-zero VOC paints for indoor use are now widely available for consumer use and are considered the standard for most household architectural paint.

VOC emissions from architectural coatings have drastically decreased over the last few decades, even as the use of architectural coatings has increased over the same time. More than 90% of architectural coatings sales in the United States are now for environmentally preferable water-based paint. California's South Coast Air Quality Management District estimates that VOCs from architectural coatings in the Los Angeles area— the air basin with the most severe air quality issues in the country — decreased by over 50% between 2008 and 2014.

Canada reports that 93.6% of all architectural coatings sold in Canada are low emitting, water-based paints. This is a 79% increase in the sale of low emitting, water-based paints over the past 10 years. Similarly, 99% of decorative coatings sold in Canada are compliant with federal low VOC limits. Canada estimates that VOC reductions in the past ten years are the equivalent of 41 kilotons of VOCs. This is the equivalent of emissions from 3,280,000 average cars over a year.

The paint industry has eliminated or minimized lead from architectural paint.

Due to the health risks associated with lead, its use in paints has been restricted by most countries. Prior to implementing restriction, the paint industry had voluntarily phased out lead-based paint in household architectural paint. The Global Alliance to Eliminate Lead Paint, also known as the Lead Paint Alliance - formed by the UNEP and the WHO - engages national governments, industry, non-governmental organizations and consumers to prevent and minimize exposure to lead paint, especially for children. The paint industry through the World Coatings Council is a contributing member of the alliance and has called for the adoption of restrictions for paint and printing inks. The council is also assisting in expanding the number of countries that restrict the use of lead in paint and offers its technical knowledge for the formulation of lead-free alternatives.

Paint recycling programs optimize raw material use while minimizing disposal.

The paint industry has initiated paint recycling programs to reprocess leftover paint for sale as a usable product. Most latex-based paint can be recycled into paint products for reuse or concrete mixtures for landscaping. Paint recycling minimizes waste and optimizes use of raw materials while preventing paint solids from going to landfills.

Currently, the industry has implemented paint recycling programs in the U.S., Canada, U.K. and Australia. In the U.S., the American Coatings Association facilitates recycling and leftover paint management through its non-profit paint stewardship program, PaintCare. The program is designed to encourage industries, businesses, and consumers to recycle and reduce paint waste thereby reducing the industry's environmental footprint. U.S. PaintCare has launched in 11 states and in Washington, D.C., and to date has collected 66 million gallons of paint to be recycled. In addition, U.S. PaintCare focuses on providing public education on responsible waste management including tips on extending the life of unused paint by utilizing proper storage techniques. Canada reports recycling about 28 million kilograms of paint per year, enough paint to cover 560,000 average sized homes.

Marine antifouling coatings promote biodiversity by limiting invasive species transfer while reducing greenhouse gas emissions and energy consumption.

An increase in world trade and subsequent transport of goods across the oceans could result in accidental introduction of potentially harmful non-native organisms in marine environments attached to hulls of ships. Specialty marine coatings called antifouling coatings help reduce growth of marine organisms on vessels, reducing transfer of invasive species that could lead to biodiversity loss. In addition, coatings reduce drag of a vessel which lowers a vessel's energy and fuel consumption. Antifouling coatings can reduce a vessel's greenhouse gas emissions by an average of 9%. This reduction results in fuel savings of about $60 billion annually with a reduction of about 384 million tonnes of carbon dioxide annually. This is the equivalent of eliminating 64 million average cars.

For additional information, please visit: https://worldcoatingscouncil.org/
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