

SUSTAINABILITY IN THE GLOBAL PAINT & COATINGS INDUSTRY

Contributions to the United Nations' Sustainable Development Goals

World Coatings Council℠

About this Report

The World Coatings Council (WCC) and its 16 member associations collaborate on environmental, economic, and social issues. This publication is the result of an ongoing effort to highlight the industry's commitment to the United Nations' Sustainable Development Goals. This joint sustainability report of the global coatings industry is based on a materiality analysis with industry representatives and sustainability experts from business, science, networks, and non-profit-organizations. The challenges, opportunities, and achievements identified in the process, will serve as the basis for the further sustainability transformation of the global coatings industry.

Extensive gratitude is extended to the member associations of the World Coatings Council, representatives from paint and coating manufacturers around the globe, and external stakeholders who contributed to this publication with great commitment and valuable insights.

This publication is dedicated to the memory of David F. Darling, Vice President of Health, Safety, Environmental Affairs at the American Coatings Association.

DECEMBER 2022

Table of Contents

INTRODUCTION 4

CHAPTER 1 – About The World Coatings Council 6

The World Coatings Council's Organization 6

Sustainability Roadmap 8

CHAPTER 2 – Our Industry's Value Proposition 9

Paint and Coatings: Essentially Sustainable 9

CHAPTER 3 – Our Material Issues 10

CHAPTER 4 – Our Sustainability Principles 14

Sustainability Charter 14

Our Commitment to Sustainable Development 14

CHAPTER 5 – Our Industry's Contribution To The Sustainable Development Goals 15

Our Contribution to SDG 3: Ensure Healthy Lives and Promote Well-Being For All at All Ages 16

Our Contribution to SDG 4: Quality Education 18

Our Contribution to SDG 6: Clean Water and Sanitation 20

Our Contribution to SDG 8: Decent Work and Economic Growth 21

Our Contribution to SDG 9: Industry, Innovation, and Infrastructure 23

Our Contribution to SDG 11: Sustainable Cities and Communities 25

Our Contribution to SDG 12: Responsible Consumption and Production 26

Our Contribution to SDG 13: Climate Action 28

Our Contribution to SDG 14: Life Below Water 30

APPENDIX 32

WCC Member Associations 32

Definition of Material Issues 36

Participating Companies 38

Disclaimer 39

World Coatings Council℠

Introduction

Together for Sustainable Development

The World Coatings Council brings together 16 coatings associations worldwide, including their member companies. Each regional association and company – whether small, medium, or large – is on its own, yet interconnected, sustainability path. With the increased complexity of global challenges, it is more important than ever to coordinate actions and contribute to sustainable development as a whole industry. Through the council, members learn from each other's successes and challenges, and together increase their positive impact on society, the economy, and the environment.



Over the last few decades, the coatings industry has worked hard to continually increase the sustainability of its products and manufacturing processes while maintaining their safety and effectiveness. From the outset and as far as technically feasible, we have focused on substituting hazardous substances, while maintaining the quality and functionality of our products. At the same time, we have reduced the energy and resource demand of our production processes. In these efforts, it is important to recognize that various parts of the world are at different stages of implementing government-mandated requirements and industry practices to improve their sustainability. The World Coatings Council aims to provide each member with the resources appropriate to their abilities and legal requirements.

Our member companies support a wide variety of customers' needs that contribute directly to sustainability with their range of paint and coating products. Coatings provide resistance and durability to the products to which they are applied; they offer vital functions for consumer goods and industrial applications; they contribute to a safe and healthy environment for communities; and they add color and protection to buildings and other goods. During the events of the last few years, the global coatings industry has demonstrated that it is an indispensable industry, providing essential coatings for the health and food sectors.

As the World Coatings Council, we are proud of what the industry has already achieved on sustainability and are confident in our ability to continue to contribute to the to the United Nations' Sustainable Development Goals (UN SDGs). We are happy to present to you the World Coatings Council's first Sustainability Report which introduces our Sustainability Charter, highlights how the coatings industry currently contributes to achieving the UN SDGs, and addresses areas we will undertake in the years to follow.



Chapter 1 – About The World Coatings Council

The World Coatings Council Organization

Since its creation in 1992, the World Coatings Council (WCC) has provided a forum for the paint and coatings industry, where companies can exchange information and work to coordinate matters of international concern. Today, the WCC – originally named International Paint and Printing Ink Council – serves as a common and global voice, responding to strategic and regulatory issues. With this sustainability report, the WCC raises awareness on the collective sustainability contributions of the global coatings industry for the first time.



The association names below correspond to the logos listed above, from left to right.

1. American Coatings Association (ACA)
2. Australian Paint Manufacturers' Federation (APMF)
3. Brazilian Coatings Manufacturers Association (ABRAFATI)
4. The British Coatings Federation (BCF)
5. Canadian Paint and Coatings Association (CPCA)
6. China National Coatings Industry Association (CNCIA)
7. European Council of the Paint, Printing Ink, and Artists' Colours Industry (CEPE)
8. French Paints, Printing Inks, Artist Colours and Adhesives Association (FIPEC)
9. German Paint and Printing Ink Association (VdL)
10. Japan Paint Manufacturers Association (JPMA)
11. Malaysian Paint Manufacturers Association (MPMA)
12. Mexican Paint and Printing Ink Manufacturers' Association (ANAFAPYT)
13. New Zealand Paint Manufacturers Association (NZPMA)
14. South African Paint Manufacturers Association (SAPMA)
15. Spanish Association of Manufacturers of Paints and Printing (ASEFAPI)
16. Association of the Paint Industry in Turkey (BOSAD)

The role of the council's Secretariat is appointed to one of WCC's member associations. The Secretariat ensures timely and proper communication between members, as well as complete preparation for all WCC meetings. The American Coatings Association (ACA) has been Secretariat since the council's inception. The chair and the vice chair of the WCC are elected by its members. Currently, the chair is held by the British Coatings Federation (BCF).

The World Coatings Council carries out numerous important tasks for the industry. It acts as a focal point for monitoring and communicating international issues, produces a global market analysis every two to three years, and drafts recommendations on global issues. Furthermore, the council coordinates industry positions on matters affecting paint and coatings companies in all countries through open dialogue between the participating member associations. It also communicates with other international organizations and, as a Non-Governmental Organization (NGO), serves as a technical consultant for the United Nations' International Maritime Organization (IMO) and the UN Economic and Social Council (ECOSOC), as well as on the UN Environment Program (UNEP) Business Industry Major Group (BIMG), among others.

Sustainability Roadmap

Sustainability is one of the World Coatings Council's key focus areas, as demonstrated by the wide array of sustainability initiatives undertaken since the council's formation 30 years ago. Our sustainability milestones show how we act together to make the voice of the industry heard and to increase our sustainability impact. We evolved together with our association members and their customers' needs. The latest step was the creation of this report in which we present our industry's efforts in the area of sustainability.

THREE DECADES OF MILESTONES

1990s

1992
Creation of the International Paint & Printing Ink Council, now known as the World Coatings Council

1994
Foundation of Asian Paint Industry Council

1996
Development and adoption of the global version of the Coatings Care program to promote sustainability in the industry

2000s

2005
The council was granted NGO status by the UN Economic and Social Council (UN ECOSOC) as well as by the UN Sub-Committee of Experts on the Transport of Dangerous Goods

2008
The council was granted permanent NGO status by the UN International Maritime Organization (IMO)

2010s

2010
Creation of the Global Alliance to Eliminate Lead Paint (GAELP), also known as Lead Paint Alliance (LPA), with WCC participation from the beginning

2014
The Latin American Federation of Associations of Paint and Ink Technicians and Manufacturers (LATINPIN) is founded

2017
Creation of the Responsible Mica Initiative (RMI); the WCC is an active serving member

2018
The council reaffirms its policy statement regarding lead in paints

2019
The name of the council was changed to World Coatings Council (WCC)

2020s

2020
Launch of the WCC Sustainability Platform

2021
Having worked together since 2018, the WCC joins the GloFouling Partnership for implementing the IMO guidelines on the control and management of biological fouling on ships

2022
WCC appointed to UNEP BIMG

First, joint publication on sustainability of the global coatings industry and reinforced effort to contribute to the UN SDGs

Chapter 2 – Our Industry's Value Proposition

Paint and Coatings: Essentially Sustainable

Paints and coatings serve all of us in our daily lives: they protect our buildings and infrastructure; support the hygienic production and transportation of food; provide essential coatings for offshore wind power plants and solar panels with resistance to the negative effects of weather; and add color to the spaces we inhabit and the objects we use, among many other things.

- Coatings improve the durability of critical assets including the buildings we work and live in and the many objects to which they are applied. The core function of coatings is to preserve and protect substrates. Their resistance-enhancing properties contribute to safer, longer lasting infrastructure and buildings, extending their useful life and thus preserving both renewable and non-renewable resource materials for future generations.
- As functional surfaces, coatings are a crucial ingredient in production processes and spark innovation in many industries. Coatings can enhance the sustainability of the materials and products to which they are applied. They can protect products from corrosion, abrasion, extreme temperatures, and prevent microbial growth. Coatings can also provide functions such as solar reflectivity, insulation, minimized adhesion to surfaces, reduced friction, or conductivity. All these functions are beneficial in the transition to renewable energy and in many other sectors.
- Coatings contribute to a healthy environment as well as a safe and reliable provision of foods. The industry offers antimicrobial products for the health care sector, hygienic surfaces for the food industry and protective coatings for food packaging. Furthermore, it enables consumers' well-being with low emitting indoor paints. The industry delivers innovative antimicrobial paints that aim to further protect people, which has been especially important during the pandemic.

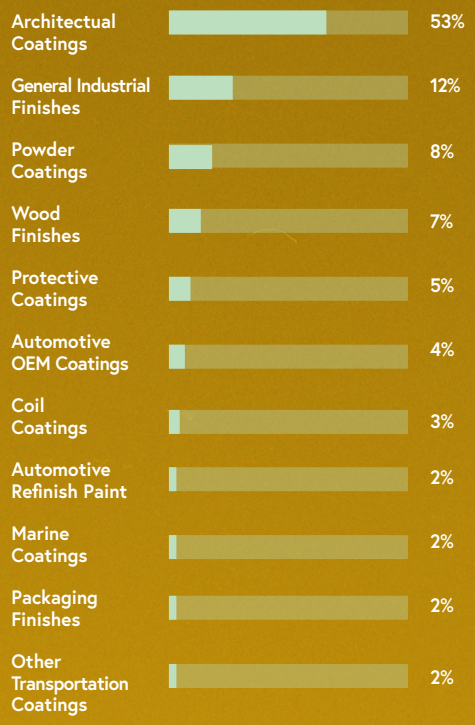
Paints and coatings play a fundamental role in saving resources: they help reduce the environmental footprint as they extend the life cycle of many products, delay replacement of those products, or make them more suitable for recycling. Through their functions, paint and coatings ensure that companies and consumers can continue to thrive in the world we share.

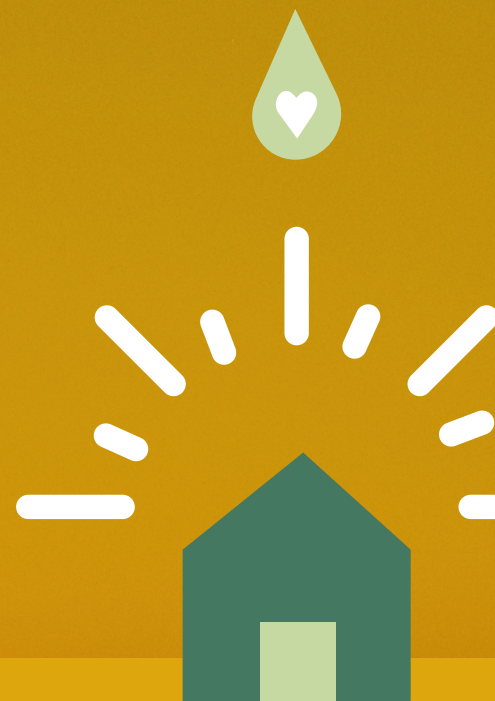
Put simply, every manufacturing process that results in the production of a non-liquid product includes a process for coating the finished good, making the coatings industry an integral part of and partner to myriad larger manufacturing and end-use industries.

Global End-Use Market Share (2019)

The paint and coatings industry has a global market revenue of US $173 billion. Architectural coatings represent the largest market, with more than 50 % of market volume. Nevertheless, our diverse products serve all major industries.

Source: The ChemQuest Group, Inc.





Chapter 3 – Our Material Issues

To define the most relevant sustainability issues for the coatings industry, the WCC conducted its first, industry-wide materiality analysis. The analysis helped the WCC identify the industry's challenges, achievements, and the matters requiring the most urgent action. The results were decisive for determining the industry's contribution to the UN Sustainable Development goals and the content of this report.

Methodology

The materiality analysis was conducted in 2021 according to the principles of the Sustainability Reporting Standards of the Global Reporting Initiative (GRI SRS). In a workshop with member associations, the WCC selected a short list of 26 topics in five fields of action to be included in the materiality analysis. To ensure all relevant issues were considered, sustainability reporting standards – such as GRI, Sustainability Accounting Standards Board (SASB), CDP, UN SDGs – were applied. Also, the process included an evaluation of studies by the WCC and its members and of paint and coatings companies' sustainability reports.

The WCC member associations and 60 companies from the industry took part in the global survey "Sustainability in the Coatings Industry," and prioritized the 26 topics from an industry perspective. The selection and the assessment of the material topics was validated by including feedback from external stakeholders. Stakeholders were chosen according to their expertise within the five fields of action: Business Model & Innovation, Environment, Human Capital, Leadership & Governance, and Social Capital.



Our Fields of Action	External Stakeholders' Feedback
Business Model & Innovation	Research and innovation are key for future sustainability and economic performance. With funding for paint and coatings-related university curricula, research and development capacities can be enhanced. Stakeholder dialogue is an important aspect on the path to achieve a sustainable business model.
Environment	Decarbonization is a major task for the industry. More efficient production processes and waste management play a key role for resource efficiency and environmental performance.
Human Capital	Fundamental labor rights need to be enforced in all workplaces. Offering career paths and enabling personal growth to employees helps attract and retain a qualified workforce. Training plays an enabling role for all aspects of sustainable development.
Leadership & Governance	Compliance with existing regulations is a basic requirement for doing business. Future potential lies in creating smarter rather than more regulation.
Social Capital	In its long and complex supply chains, the industry has to tackle forced and child labor. To ensure consumer safety, all chemicals that go into products need to be assessed, especially if they are potentially toxic.

Industry Ranking of Material Issues*

1. Employee Health and Safety
2. Research and Development
3. Customer Satisfaction
4. Product Safety and Stewardship
5. Management of the Legal and Regulatory Environment
6. Product Design and Lifecycle Management
7. Waste and Hazardous Materials Management
8. Air Quality
9. Economic Performance
10. Efficient Choice and Use of Raw Materials
11. Responsible Supply Chains
12. Compliance and Anti-Corruption
13. Corporate Governance and Ethics
14. Training and Education
15. Greenhouse Gas Emissions and Climate Strategy
16. Circular Economy and New Business Models
17. Attracting and Retaining Employees
18. Water and Wastewater Management
19. Labor Rights
20. Stakeholder Engagement and Public Policy
21. STEM Education and Learning
22. Community Relations and Contribution to Industrial Development
23. Renewable Energies and Energy Management
24. Diversity and Inclusion
25. Digitalization and Data Security
26. Biodiversity

* Ranking according to member associations and companies. For a definition of each material issue, refer to the Appendix, p. 36-37. Colors correspond to the above Fields of Action.

Achievements and Challenges in the Areas of Action

The coatings industry has worked hard to address critical issues, to ensure full compliance with regulations worldwide, and to increase the sustainability of its products through innovation. Adherence to environmental, health and safety regulations form the basis for the industry's continued success. There are, however, areas in which the industry still needs to increase its efforts, as well as challenges which will require extensive research and, in some cases, novel solutions. The feedback collected from WCC member associations, companies, and external stakeholders provides a picture of the achievements and challenges in the five fields of action.

Business Model & Innovation

The industry is constantly challenged to provide sustainable products without compromising on consumers' demand for high-level performance. For companies in the paint and coatings industry, the design of new products, as well as their life-cycle assessment and management, demand continuous improvement. These actions form important stepping stones for the transition to a circular economy. Achieving a full transition will require additional investments in the research and development of green alternatives and an increased standardization of life-cycle assessments. Acceptance of new business models can be greatly enhanced by clear sustainability guidelines from governments and a high level of transparency on societal and environmental impacts provided by companies. Increasingly, environmental and societal issues are and will continue to be embedded in companies' structures.

Environment

Reducing the use of hazardous substances, offering low-VOC (volatile organic compound) products, while at the same time considering the carbon footprint of its production lines poses ongoing challenges for paint and coatings manufacturers. An increased focus on the composition and sourcing of raw materials will help deliver greener products. Barriers to overcome in this area include high costs and lack of standardization of life-cycle assessment procedures. Marginal improvements are still possible for the efficiency of the industry's production processes. At the same time, finding more efficient ways of recycling paint and closing the loop remains a challenge. To guarantee an efficient handling of paints and coatings along their lifecycle, there is a continued need to train workers in manufacturing plants, painters and waste managers, and for skilled labor.

Human Capital

Workers' health and safety are maintained through strict regulatory compliance, which has been implemented throughout the industry supply chain. Future success of the industry depends on a skilled workforce. Key elements in attracting and retaining a skilled workforce include a renewed focus on wellbeing at work and continual learning opportunities. In addition, the industry will need to pay additional attention to the values of diversity and inclusion. Meeting sustainability challenges and achieving continued economic performance will require extensive training and career pathways for highly skilled individuals.

Leadership & Governance

The paint and coatings industry is a mature sector operating in a highly regulated environment. Individual companies are faced with different rules within both national and international jurisdictions, which can cause a lack of alignment across countries and geographic regions. Industry associations and the companies they represent engage with governmental bodies and advocate for a better informed and more consistent legal environment, to assure effective and valuable products for society. Additionally, harmonization of regulations worldwide contributes to raising the sustainability standards of the industry.

Social Capital

Ensuring that labor rights are upheld along the supply chain is one of the most complex and challenging tasks for the industry, and cooperation within the industry and with stakeholders along the supply chain plays a crucial role in identifying blind spots. Regarding consumer use of products, the industry has been successful in providing strong product safety and stewardship. Nevertheless, the assessment of chemicals in commerce remains a central concern of governments at both the national and regional levels to ensure consumer safety.

The paint and coatings industry also builds social capital by supporting educational activities with a focus on Science, Technology, Engineering and Mathematics (STEM) education.



Chapter 4 – Our Sustainability Principles

Sustainability Charter

The paint and coatings industry is proud to provide products that protect, sustain, and add value to buildings, infrastructure, vehicles, and the objects we depend on every day. We want to achieve this with products that are safe to use and increasingly eco-efficient. As such, the industry evaluates the impacts of our products along their entire life cycle, and continuously develop product offerings that reflect currently available science. At the same time, industry works to ensure sustainable production processes and the health and safety of its workforce.

Both national and regional industry associations have already introduced guidance on environmental and societal impacts and collected metrics on a regional level. With Our **Sustainability Principles,** the WCC and its members have – for the first time – created a globally harmonized basis for sustainability programming in the paint and coatings industry. In addition, our **Commitment to the United Nations Sustainable Development Goals** shows how the paint and coatings industry can contribute to overcoming global challenges.

Our Sustainability Principles

1. **Contributing to value creation worldwide through long-term economic performance**
2. **Committing to ethical business practices and responsibility throughout the supply chain**
3. **Providing good employment and ensuring a safe workplace**
4. **Producing and developing safe and sustainable products**
5. **Supporting education for STEM and applied sustainability**
6. **Engaging with stakeholders and local communities**
7. **Working to maximize efficiency and reduce the impact of manufacturing processes**

Our Commitment to Sustainable Development

The WCC and its members support the UN's 17 global Sustainable Development Goals (SDGs). We have identified nine strategic SDGs in which our industry has a high impact or to which coatings companies can make a large contribution. This report outlines our commitment and provides examples of industry's good practices from around the world.



Chapter 5 – Our Industry's Contribution to The Sustainable Development Goals

We are at the beginning of a decade of action for global Sustainable Development from 2021 to 2030. In 2015, the United Nations presented its plan for achieving 17 Sustainable Development Goals (SDGs) by 2030. The SDGs outline a plan to eradicate poverty, preserve the planet, and achieve prosperity on a global level. The building blocks of this plan are the 17 goals that, together with their 169 targets, guide efforts at international and local levels.

For more information on the SDGs, visit https://sdgs.un.org/goals

The World Coatings Council and its members embrace the UN's 2030 Agenda for Sustainable Development. To focus our efforts in this decade of action, we have identified the nine SDGs wherein our industry can have the greatest impact. The following pages describe the challenges specific to our industry and show examples of how the WCC, our regional member associations, as well as paint and coatings manufacturers around the world, contribute to achieving these SDGs.



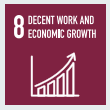
SDG 3 — Good Health and Well-Being
See pages 16-17



SDG 4 — Quality Education
See pages 18-19



SDG 6 — Clean Water and Sanitation
See page 20



SDG 8 — Decent Work and Economic Growth
See pages 21-22



SDG 9 — Industry Innovation and Infrastructure
See pages 23-24



SDG 11 — Sustainable Cities and Communities
See page 25



SDG 12 — Responsible Production and Consumption
See pages 26-27



SDG 13 — Climate Action
See pages 28-29



SDG 14 — Life Below Water
See pages 30-31



"The coming years will be a vital period to save the planet and to achieve sustainable, inclusive human development."
– **António Guterres, Secretary-General of the United Nations**



Our Contribution to SDG 3: Ensure Healthy Lives and Promote Well-Being For All at All Ages

Decorative paints and specialized functional coatings enable the creation of safe and healthy environments throughout everyday life. The industry offers a variety of specialized products like antimicrobial paints and coatings for medical instruments. To increase safety and mitigate health impacts on consumers, manufacturers have greatly reduced the use of solvents in indoor paints throughout all product lines. In addition, the coatings sector acts to ensure the safe management and handling of chemicals throughout their supply chain, as well as identifying and eliminating hazardous materials from their formulations.

Safe Management and Handling of Chemicals

Paints and coatings, for the largest part, are produced using chemical materials such as pigments, binders, solvents and other additives. Therefore, adequate management and safe handling of chemicals along the value chain is a vital prerequisite for doing business in this industry.

Regulations are in place on multiple levels that require manufacturers to ensure that chemicals used in their products undergo an evaluation first and be classified according to their impact on human health and the environment during manufacture and use. In addition to national laws and regulations, a set of international frameworks exists and therefore, ensures safe coatings products for all.

The voluntary Globally Harmonized System of Classification and Labelling of Chemicals (GHS) introduced by the United Nations, provides the main international framework for the classification of chemicals. The World Coatings Council is proactively engaged in efforts to promote global harmonization to ensure effective and technically sound classification of chemicals and labeling requirements. As such, the council regularly sends representatives to the UN Subcommittee of Experts on the GHS and takes part in the discussion and refinement of technical issues.

Numerous national regulations are based on the GHS, given its broad scope and far-reaching impacts. For example, the United States and Canada each implement a Hazard Communication Standard (HCS), based on GHS. In the EU, the Classification, Labelling and Packaging (CLP) Regulation adopts classification and labeling criteria defined by the GHS. The European Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation sets the rules for classifying and labeling the chemicals used in products. It makes sure that only those chemical inputs — registered with REACH first — are used in the European market. Therefore, it requires hazard classification information from the GHS as part of a chemical's registration dossier.

The coatings industry especially contributes to the following SDG-targets:

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

A growing number of national regulations is a constant presence in the industry and a challenge to globally operating enterprises. Different countries or regions follow different sets of regulations. In places where regulation is not sufficient, many of the World Coatings Council member associations and their industry members have established their own standards for the assessment and declaration of their products, to ensure safety during the manufacturing and use phase. Globally, the member associations of the WCC support their member companies in the management of their regulatory requirements.

Example: Since 2005, the German Paint and Printing Ink Association (VdL) and its members have an industry-wide objective to minimize substances classified as carcinogenic, mutagenic, or toxic for reproduction (CMR substances). This is ensured through monitoring, declaration and voluntary commitment using VdL's sets of guidelines.

Consumers Benefit from Wider Range of Low-VOC Paints

Reducing exposure of workers and consumers to volatile organic compounds (VOC) from paints has been a priority for the industry 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. Especially low or near-zero VOC paints for indoor use are now widely available for consumer use.

Biocides Remain an Essential Ingredient

To preserve materials and prevent paints from spoiling, biocides serve a crucial role. Biocides are additives used to prevent the growth of unwanted microorganisms such as fungi and mold. In waterborne paints and coatings they prevent products from spoiling, while stored in cans and after being applied. Without biocides, these paints would spoil and have to be discarded more frequently. Additional biocides are applied in products for wood preservation and in marine coatings to preserve hulls and reduce friction (see SDG 14).

The availability of effective biocides has made it possible to develop a wide range of waterborne products. The industry strongly recognizes the need for effective policies regarding biocides and supports policies concerning proper handling. However, stringent biocides requirements without industry input could jeopardize the circular economy approach to leftover paint, which has seen significant quantities of paint recycled in countries like the United States, Canada, Australia, Brazil, Germany and New Zealand. To protect the environment and the public, the industry continuously engages with governments to ensure levels of biocides are closely monitored. Consequently, regulation is becoming increasingly comprehensive globally.

Global Alliance to Eliminate Lead Paint

Due to the health risks associated with lead, its use in paints has been restricted by most countries around the globe. 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 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.

Coatings for Hygienic Environments in the Health Care and Food Sectors

For the health sector the industry offers a wide range of specialized products, ensuring hygienic surfaces as well as safe performances of medical gear and instruments. Antimicrobial coatings are routinely used on surfaces in high-stress environments like hospitals, nurseries, and consulting rooms. Care facilities and kindergartens also increasingly make use of the antimicrobial features of specialized coating products. This safeguarding potential has received recognition and a wider application as the need for protecting people from the spread of disease continues to grow. This recent trend has motivated companies to develop new solutions and performance characteristics, especially for anti-viral coatings.

Coatings also play a crucial role along the value chain of food provision. In facilities and on machinery for food processing, coatings ensure hygienic conditions. Coatings for food packaging can have a positive impact on the shelf-life and hygiene of food items, thus contributing to the provision of food globally and reducing the amount of food waste along the entire supply chain.



Our Contribution to SDG 4: Quality Education

The companies and associations in the coatings industry play an important role as a source of educational opportunities. Bringing up the next generation of coatings scientists and enabling lifelong learning is crucial for continued innovation in the industry and for establishing the knowledge to tackle global sustainability challenges. This is addressed through programs offered for students in partnership with schools and universities, as well as for both potential and current employees. Beyond vocational and professional training, the industry sponsors STEM programs and Sustainable Development programs; helps teenagers enter the job market; and contributes to the training of teachers and professors.

Bringing up the Next Generation of Coatings Professionals

The paint and coatings industry offers increasingly specialized career paths. The development of formulations as well as the correct and efficient application of coatings requires the right set of skills. Therefore, the industry supports STEM education as well as vocational training. Initiatives span from programs that offer a basic understanding of coatings science to young children, to science programs in high schools, to vocational chemical education facilities that link important resources with a possible career path and traineeships. Progressively, more programs also include sustainability aspects of coatings. Courses and curricula are sponsored by trade associations as well as by single companies. Existing programs are targeted at entrants in the sector and seasoned professionals who aim to hone specific skills, be they marketing strategies or chemical formulation technologies. Larger corporations also offer educational opportunities on sustainability — beyond the core business — to their workers, and in some cases, to the communities around their facilities.

The coatings industry especially contributes to the following SDG-targets:

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

Sponsoring Education to Bring Youth into Meaningful Employment

Individual companies from the industry help young people acquire the skills they need for a decent livelihood and career – and in many cases to lift them out of poverty. Having access to a new generation of young and educated people is also key to the sustainable transformation of all industries. Therefore, beyond the traditional focus on STEM education, companies — especially in countries without widespread opportunities for vocational training — offer initiatives with a broader focus on skills for entering the job market with the aim of bringing kids out of poverty.

Lifelong Learning in an Increasingly Specialized Industry

High quality outcomes for paints and coatings rely on a skilled workforce along the entire value chain. This encompasses the development of paint formulas, but also the production, distribution, and application of the industry's products. In the future, career profiles will further shift towards highly specialized and skilled tasks. The curriculum for the industry covers chemical composition capabilities, laboratory practices, as well as marketing and sales skills. Essentially, but very crucially, all workers need to be trained on proper handling of machines and chemicals and following application procedures – which is both key to workplace safety and producing high quality products. The human resources of the industry play a crucial role in fulfilling the sustainability potential of functional coatings and a correct and resource-efficient application of products.

As such, the coatings industry offers training for employees at all stages of their careers. Regional coatings associations sponsor an array of coatings diplomas. They span from partnership with universities and chemistry education to online courses. Additionally, regional associations offer updating and training webinars from the industry, for both the industry and vocational training. But opportunities also come from companies that provide young people with entry-level abilities, fund science laboratories, disseminate scientific knowledge, offer traineeships, or promote careers in the sector. They also sponsor scholarships for chemistry university programs. Globally, there is a plethora of approaches towards training and lifelong learning. Through the World Coatings Council, knowledge transfer on best practices is encouraged.

Examples: *The National Autonomous University of New Mexico offers a degree in paint technology in partnership with ANAFAPYT; FIPEC has an agreement in place with third-level chemistry schools to offer traineeships and foster crucial skills; BCF, CNCIA, and CPCA all provide online diplomas in Coatings Technology. Workshops and webinars are also offered by ANAFAPYT and VdL. VdL also uses various channels to offer information about educational opportunities, including a dedicated website. CEPE launched a three-year Master's Engineering Program for paint and ink technology.*



Our Contribution to SDG 6: Clean Water and Sanitation

The availability of clean water is a global challenge. Since water is one of the main ingredients for our industry products, we aim to manage water sustainably. The companies in the coatings industry adopt water management practices in their production plants and seek ways for wastewater treatment to avoid creating additional wastewater. The most ambitious projects implement closed-loop systems. Water use is also considered in the product development process: the industry has managed to preserve water by increasing the effectiveness of coatings. Finally, products like water pipe and roof coatings support the provision of safe and clean water.

Water as a Resource in the Coatings Industry

Due to climate change, water stress is projected to increase in many parts of the world. This means ensuring the provision of fresh water for humans as industrial processes become continuously more challenging. Water is also an important input in certain segments of coatings production. In line with the rise in demand for waterborne architectural coatings, water demand also increased. Consequently, for a global manufacturer like the coatings industry, careful water management and sensible water use policies are fundamental.

Manufacturers' activities are defined by national regulations on water and wastewater management during production, but also during the transportation of chemical raw materials and the final products. Beyond regulations, practices may differ among companies and ambition towards circular approaches is on the rise. Wastewater treatment is key in reusing as much water as possible and in preventing inadvertent discharges.

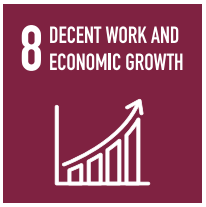
However, solutions also focus on wastewater management by painters and contractors. Portable separation treatments are currently the norm in many parts of the globe and ensure safe application, handling and management of residues, and cleaning of painting supplies.

Coatings for the Supply of Clean Water

The industry's impact on the provision of clean water goes beyond the water treatment in production facilities and by contractors. Pipes that allow drinking water to come to houses and workplaces need a layer of coating to ensure that the water inside them remains safe and not contaminated by dangerous substances. Dams, infrastructure, sewage systems, wastewater treatment plants: all water infrastructure relies on coatings to prevent corrosion and to ensure clean and safe transportation of water resources. In addition, roof coatings help reduce corrosion, prevent fouling, and slow the accumulation of dirt, mold, algae and lichen. This is especially important in countries where rainwater collection via roofs is an important source of fresh water.

The coatings industry especially contributes to the following SDG-target:

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.



Our Contribution to SDG 8: Decent Work and Economic Growth

The coatings industry provides and ensures good work with safe conditions in a global industry. As a global employer, the companies in the coatings industry provide livelihoods for millions. As a supplier of paints and coatings, the industry contributes to economic growth. The industry creates value and seeks to increase its resource efficiency through efficient production processes and careful consideration of its consumption of raw materials. Enforcing social and environmental standards for individuals across the supply chain is an ongoing challenge for the industry. We work together for the implementation of health and safety measures, enabling equal access to jobs, and sourcing raw materials responsibly.

Providing Occupational Opportunities around the World

The paint and coatings industry is a global employer. As such, it offers good work in its many supply chains, its own production facilities, as well as in industries trading and applying paints and coatings. Careers in the coatings sector offer many growth opportunities and will make a significant contribution to sustainable development in decades to come (see educational opportunities under SDG 4). By offering good occupational opportunities coatings manufacturers can contribute to lowering poverty levels worldwide.

Moving toward Renewable Materials for Value Creation

Providing inputs to the construction, automotive, shipping and many other industries, the coatings industry enables economic growth and employment for millions of people around the world. As such, it is under constant pressure to create value while increasing its resource efficiency – using less raw materials per output and ramping up renewable materials used for manufacture. Our contribution to SDG 12 describes how the industry is increasing resource efficiency in its production lines.

A less established part of the solution is the substitution of traditional raw materials for bio-based and renewable materials. New business models based on renewable raw materials hold challenges but also great opportunities for the industry. Pioneer products, such as wood varnishes based on plant oils, already exist. More applications are still in early development. The possibility of transitioning to renewable materials is ultimately limited by the demand for food and energy crops. Identifying real sustainable solutions with bio-based ingredients requires more research, and continued dialogue with political and social leaders and communities, as well as actors from other industrial sectors.

The coatings industry especially contributes to the following SDG-targets:

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.

8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.

8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.

Ensuring Health and Safety of a Global Workforce

Associations support their member companies with compliance strategies. The industry follows national regulations on health and safety in its facilities and many companies undertake efforts to implement programs that achieve and surpass regulatory requirements. Basic requirements for companies to ensure health and safety in the workplace include frequent trainings, the provision of protective equipment, and sensible building design.

The industry has also looked after its workforce during the coronavirus pandemic by converting production lines to manufacture of hand sanitizer for citizens and hospitals, providing it to the workers together with masks and other protective equipment. The industry has been recognized globally as an essential one during the first stages of the pandemic, since it supplies almost all other essential industries, like the pharmaceutical and food sector.

Examples: *ACA awards outstanding safety performances with its Safety Awards Program; VdL supports companies increase safety levels through their Vision Zero program.*

Addressing Challenges in Supply Chains

While most inputs for the manufacture of paints and coatings stem directly from the chemical industry, the coatings industry is aware of issues in its own supply of raw materials. In particular, the industry uses mica minerals in a range of products, including paints and powder coatings for cars. Mica is one of the most challenging supply chains to the sector. India, as one of the main countries of mica sourcing, continues to struggle with child labor issues.

To help families send their children to school, stop child labor in the mica sector, and establish transparency across the mica supply chain a group of companies and non-governmental organizations launched the Responsible Mica Initiative (RMI) in 2017. The World Coatings Council and its members have been active participants in RMI since its foundation. Through the initiative's platform, the WCC has contributed to the development of global mica procurement specifications to increase traceability, as well as create community development programs with improved access to education for children in the Indian mica sector. To increase its impact, RMI is currently expanding its activities to Madagascar.



Our Contribution to SDG 9: Industry, Innovation, and Infrastructure

Coatings enable innovation and contribute to the sustainability of critical infrastructure. Buildings, bridges, and trains are protected from weather and last longer if the right coatings are applied. A widespread application of anti-corrosion products saves resources. Coatings also reduce the energy demand on infrastructure, for example, by reducing the friction of ship hulls as well as car parts. The industry also offers a range of highly specialized functional coatings: resistance against extreme temperatures; adding self-cleaning properties to surfaces; and insulating wires or adding electric conductivity. These functions all spur innovative applications in mobility, renewable energies, and construction.

Protecting Infrastructure

In our daily lives, we rely on safe and well-functioning infrastructure for getting from A to B via roads and train tracks, for telecommunication services, water supply (see SDG 6), and green power (see SDG 13), to list a few. All built infrastructure relies on coatings to increase the endurance of the materials they are made of to offer a long service life and ensure required safety levels. Bridges, for example, are subject to constant weathering and designed to last decades. Protective coatings available for their steel, concrete and wooden elements make that possible. They offer protection to buildings placed in all kinds of atmospheric conditions: extreme temperatures, high or low humidity, or high levels of salinity.

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 damages due to temperature variations, wooden structures may be shielded from getting moldy 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.

The coatings industry especially contributes to the following SDG-target:

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

Enabling Industrial Applications

Beyond their basic feature of protecting our built infrastructure, coatings are essential components to the production processes of many different industries. Functional coatings can provide additional properties to materials, paving the way to upgraded infrastructure, innovative products, and resource efficiency.

- The shipping industry relies on **antifouling hull coatings** to protect hulls, achieve fuel efficiency and prevent ships from introducing invasive species (see SDG 14).
- **Coatings adding smoothness or lower friction** are also relevant in many applications, including pipe coatings, aerospace, and power generation.
- The increased visibility provided by **highly reflective paints** is used for road markings and to light up indoor parking lots. Thus, paints contribute to the safety and functioning of our transport infrastructure.
- **Paints reflecting solar radiation** are mainly used to cool down roofs and buildings and reduce energy demand for air conditioning (see SDG 13). Other applications include streets and train tracks.
- **Fire-retardant coatings** delay fires from attacking built structures and increase the safety of industrial sites.
- Self-healing coatings are used in the automotive industry to guarantee a long-lasting protection of cars and decreasing the need for maintenance.
- **High-percentage solids coatings** make sure that almost no gas emission is produced during the drying process and last for a very long time after application.

Innovation in Coatings

Novel concepts for coatings and applications of coatings stem from within the industry as well as from universities and research institutions. To foster innovation, companies of all sizes fund their own research and development departments. In these laboratories and research centers, companies test new materials and develop new formulations, and thanks to exchanges with major target sectors, products and processes are continuously improved. Driving forces for these improvements are the construction and automotive sectors, which require high performance coatings to be applied in efficient processes.

Another building block to increase the potential for innovation is established through coatings science programs on different education levels (see SDG 4). Many larger companies and industry associations sponsor programs in high school programs or coatings degrees in universities. To incentivize innovation in those institutions, actors from the industry offer awards in recognition of improvements in industrial processes, new products, alternative or even renewable raw materials and advancements on environmental impacts.

Example: *The Brazilian Coatings Science Awards were launched in 1987 to incentivize and award coatings research. More than 50 projects have been awarded so far.*



Our Contribution to SDG 11: Sustainable Cities and Communities

Paints facilitate a feeling of wellbeing and safety in rural and urban communities. Public infrastructure relies on coatings such as road markings and hygienic coatings. With ongoing climate change, heat-reflective paints will increase in importance as they help save energy while cooling down cities. Due to their wide spread application, the coatings industry takes care to provide products that are both safe and environmentally friendly. To further increase the positive environmental impacts of our industry, companies are developing more green products based on life-cycle assessments. Transparency for consumers is increased through eco labels or environmental product declarations.

Building Sustainable Cities for our Communities

Most of the human population is projected to live in cities. How we continue to build and protect existing infrastructure has an impact on reaching the Sustainable Development Goals. Paints and coatings can increase the sustainability of our communities, as demonstrated by the following examples.

- By slowing down weathering, coatings increase the durability and resource efficiency of built structures, since there is less need for substitution of materials and repairs.
- Bridges, roads, road signs, buildings, and public transportation are protected and can safely function thanks to coatings.
- Coatings can also help create safe and hygienic surfaces for high-stress environments like hospitals and schools, as well as subways, airports, nurseries, and cafeterias.
- Highly reflective coatings can help lower indoor air temperatures by reflecting solar radiation from the outside walls and roofs of buildings.

Finally, paints offer an opportunity to create a sense of community that enhances our daily lives and beautifies our world.

Communicating Product Impact on the Environment and Human Health

It is the industry's goal to provide its customers with safe products – both for their health as well as the environment. To help consumers make sustainable choices, the industry aims to provide end users with as much information as possible, especially regarding decorative paints.

Declarations of potential environmental and health impacts of products help consumers choose the right products for their purpose. Product declarations are either standardized by governments or by industry associations.

In response to increased quality demands by consumers the industry is actively working to provide products with the highest quality possible. Extensive research is working toward developing innovative ingredients that can improve performances while decreasing environmental impacts.

To highlight their products' benefits, manufacturers increasingly use additional certifications and labels to further increase transparency to consumers, creating alignment with consumer demands and anticipating future regulations.

The coatings industry especially contributes to the following SDG-targets:

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.



Our Contribution to SDG 12: Responsible Consumption and Production

The move toward a circular economy is a central concern and opportunity for the paint and coatings industry. Compliance with regulations on the management of chemicals and waste is considered a basis for doing business. Additionally, companies are increasingly evaluating resource efficiency along the entire life cycle of their products: starting from the raw materials that serve as ingredients for the industry's products to the management of water, energy, and waste in production processes. A major challenge in closing the loop lies in the proper treatment of post-consumer paint. The WCC's member associations and companies have successfully implemented programs for the treatment and recycling of paint, as well as plastic and steel containers.

Management of Chemicals throughout their Life Cycle

The paint and coatings industry handles a wide range of chemical materials as inputs to its products. Chemicals are labeled according to the UN classification system GHS (see SDG 3). These systems are in place to make sure potential exposure of workers and consumers to harmful substances is avoided. Nevertheless, the handling of chemicals during production, transport and use still poses potential threats to consumers, workers and the environment. The UN Subcommittee of Experts on the Transport of Dangerous Goods provides direction for their safe transportation. The World Coatings Council was granted NGO status in 2005 to attend the Subcommittee meetings, where its representatives engage at the global level, submitting proposals and speaking on behalf of the paint and coatings sector. Efforts are directed to harmonize requirements in an effective way to ensure the safe handling and transport of industry products.

Resource Efficiency in Production and Use Phase

Innovation in manufacturing processes has led to energy and material efficiency in production. A wider dissemination of efficient technologies and practices holds the potential for ever more efficient use of ingredients as well as final products. Even more potential lies in the correct and efficient application of paints and coatings.

Generally, proper treatment of the surface that needs to be coated as well as correct application procedures are fundamental for the resistance and durability of the layer of paint. This, in turn, increases resource efficiency and better use, enabling responsible consumption. Appropriate techniques can be achieved by professionals that undertake the coatings industry's approved training courses. By learning and employing the correct procedures, the product can last longer and enhance resource use.

Major successes have also been achieved in collaboration with big target industries. For example, coatings manufacturers have developed efficient processes for the precise requirements of the automotive industry. Combining paint booths with a cyclone system that collects excessive powder coatings and reintroduces them to the powder system can bring about material efficiency rates up to 99 percent.

Closing the Loop

Coatings companies are faced with the circularity challenge at all levels — from sourcing, to production, to disposal — and are in the process of adapting their business models. Solutions for the end-of-life management of leftover products are organized in different ways across markets. The main challenge is the correct disposal or ideally recycling of leftover paints, as well as containers from professionals and consumers. In countries where recycling schemes are in place, leftover paint is collected and prevented from entering unqualified waste streams. Depending on quality, quantity and other parameters, paint can be reused or recycled, individual components can be recovered or they can be used for energy production. Recycling schemes for paint prevent waste from enteing landfills or sewage systems.

A select number of companies produce recycled paints directly from reclaimed leftovers. These paints find use for the remediation of walls and buildings tagged with unauthorized graffiti. In a slightly more demanding process, individual components can be recovered from the collected products, to be reused in the production of new paints.

Examples: *The industry provides a range of solutions for the recycling and treatment of leftover paints. Schemes include Paint Back Australia (APMF), PaintCare Canada (CPCA), PaintCare UK (BCF), PaintCare US (ACA), Residuos Solidos Brazil (ABRAFATI) and the PaintWise paint recycling scheme (NZPMA) in New Zealand. In Germany, leftover paint management is covered by national regulation and achieved via 3.300 public recycling stations.*

The coatings industry especially contributes to the following SDG-targets:

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.



Our Contribution to SDG 13: Climate Action

Despite being a comparatively energy-efficient industry, the reduction of its products' carbon intensity and developing climate strategies is increasingly becoming a priority. The number of companies and associations that report on their social and environmental measures and goals via their own sustainability reports is increasing. The industry also contributes to mitigating carbon emissions through its products. Coatings manufacturers are an essential supplier for renewable energy technologies, providing insulation for electric wiring, coatings for solar panels, and protecting wind power plants against corrosion. They also provide coatings that increase the energy efficiency of buildings and transport vehicles.

The coatings industry especially contributes to the following SDG-targets:

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

13.2 Integrate climate change measures into national policies, strategies and planning.

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

Sustainability and Climate Programming: An Emerging Priority for Industry

The coatings industry is to assessing its environmental footprint and developing strategies to reduce it. While pioneering companies have put forth strategies to align with the Paris Agreement to reduce global warming to 1.5 or 2 degrees Celsius by 2050, it remains a challenge to introduce similar policies for the remainder of the industry. The growing number of climate strategies and sustainability reports published each year serves as an indicator of the increasing focus of the topic.

Example: *The BCF presents data on the industry's sustainability performance in its publication, "Sustainable Strokes." The industry's progress is recognized by the World Wildlife Fund (WWF). The VdL established the industry-wide goal to power offices and production facilities with progressively more electricity from renewable sources.*

Enabling the Energy Transition

The global effort to shift toward eco-efficient energy systems encompasses both more renewable energies and an increased electrification of our infrastructure. Throughout the value chain of green electricity, coatings play a vital role. Functional coatings support the production of green electricity through silicone coatings for solar panels and by offering corrosion protection as well as improved air flow characteristics to offshore wind turbines. The transport and storage of electricity in an increasingly complex system of decentralized renewable powerplants is supported by wire and cable coatings. These coatings also play a crucial role in the realization of small-scale electrical applications in electric vehicles. For more information on increasing energy efficiency through coatings see SDG 9.

Keeping Cities Cool

A major way in which coatings already bring relief to areas suffering from high temperature is heat reflection. In the context of climate change, paints with the ability to reflect a larger share of solar radiation play a major role in lowering the temperature of roofs and buildings. This helps homeowners to decrease their reliance on air conditioning, enabling them to save energy and decrease their carbon emissions as an added benefit. If applied on a larger scale, these paints contribute to cooling in cities and other large built infrastructures such as harbors or airports.

Example: *JPMA hosts a section on its website dedicated to efficient and certified high-reflective roof coatings; ANAFAPYT sponsors a "cool roof" certification for homeowners.*

Conservation Projects

As a voluntary contribution beyond their core business, many manufacturers from the industry support climate mitigation as well as environmental conservation projects. Project partnerships include the preservation of natural carbon sinks such as forests and bogs. These partnerships often present employees with the chance of volunteering together with environmental experts creating a stream of knowledge on environmental issues.



Our Contribution to SDG 14: Life Below Water

Shipping is an integral part of our globally linked economy. The coatings industry aims to protect our oceans and ensure sustainable shipping. The coatings industry's modern anti-fouling products play a key role in increasing the fuel efficiency of the shipping industry, while at the same time protecting ecosystems from invasive species. As an industry, we emphasize the importance of safe handling and application of anti-fouling products in both our local markets and through WCC representation in the International Maritime Organization (IMO), to establish global standards for anti-fouling products and regulations.

Anti-fouling: An Essential Component of Sustainable Global Supply Chains

The shipping industry holds a crucial position for our globally connected economies. Anti-fouling marine coatings provide an important solution for an efficient and safe supply chain. Since ships travel many miles with their hulls completely submerged, micro-organisms will naturally start growing. Even a thin layer of organisms present on a large portion of the hull can drive up a ship's fuel consumption – and ultimately result in more greenhouse gas emissions per mile. Anti-fouling coatings are designed to prevent the growth of unwanted micro-organisms on ships' hulls, which leads to a reduction in drag. Applied to commercial vessels, anti-fouling hull coatings can cut carbon emissions.

As an added benefit, they prevent harmful invasive species from entering other ocean ecosystems. Invasive species can lead to major problems in local aquatic habitats by disrupting food chains and reproduction cycles. Invasive species are extremely difficult to remove and their damage can be irreversible to delicate ocean habitats. Limiting opportunities for species' transfer is a key priority of responsible and sustainable shipping. Safe and effective use of anti-fouling coatings have helped to reduce the further introduction of invasive species in ecosystems around the world.

The coatings industry especially contributes to the following SDG-targets:

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.

Global Cooperation for Sustainable Use of Antifoulants

The manufacture and application of antifoulants is subject to intense regulation. To ensure that antifouling products meet the highest standards of eco-efficiency, many substances have been banned over the course of the years. The International Maritime Organization (IMO) is the main global body for cooperation on safe shipping and oceanic travels. In 2008, the IMO's International Convention on the Control of Harmful Anti-fouling Systems on Ships entered into force offering guidelines on which substances to avoid in the production of anti-fouling products. The World Coatings Council has been granted permanent NGO status at the IMO and lends its expertise on the issue via two internal committees dedicated to antifouling coatings and related technical issues. The WCC supports smart and effective regulations for marine coatings at the global level.

The WCC also serves as a strategic partner to the GloFouling Project. The GloFouling Project is a strategic partnership between the IMO, the UN Development Program and the Global Environment Facility, with the aim of protecting marine ecosystems from the negative effects of invasive species. The project operates through different workstreams, from legal reforms to capacity building, knowledge management, and stakeholder participation. At the climate conference COP26 in Glasgow, GloFouling held an event on biofoulings and greenhouse gas emissions from the maritime transportation sector.

Constant Improvement and Innovation

The industry is working on continually increasing the efficiency of its coatings. Firstly, by reducing the concentration of biocides required to achieve the wanted effects. Secondly, by finding anti-fouling solutions that do not require the use of biocides. However, the path from laboratory to market for these novel products is long and difficult. Research teams have developed various approaches to antifouling such as creating a sleek surface without the use of biocides products that copy the nano structure of shark skin, making it harder for microorganisms to attach themselves.

Safe and Efficient Application

Since most antifoulants make use of biocides as their active ingredients, they are intensely regulated to prevent adverse effects on marine ecosystems. Best practices for application, use, cleaning, and storage of these coatings are written by the IMO and are implemented globally.

Example: *BCF makes relevant information on safe anti-fouling techniques available via its website. It also advertises good safety practices at boat fairs and in marinas.*

APPENDIX

WCC Member Associations

The World Coatings Council is composed of 16 member associations covering all continents. The member associations represent manufacturers of paints and coatings, as well as producers of raw materials in their respective regions. The profiles and contact details for each of the WCC's member associations are listed below.

American Coatings Associations (ACA)



Contact:
Katherine Berry
kberry@paint.org
worldcoatings@paint.org
www.paint.org/

Australian Paint Manufacturers' Federation (APMF)



Contact:
Bernard Lee
blee@chemistryaustralia.org.au
info@apmf.asn.au
www.apmf.asn.au/

Brazilian Coatings Manufacturers Association (ABRAFATI)



Contact:
Fabio Humberg
fabio@abrafati.com.br
abrafati@abrafati.com.br
www.abrafati.com.br

The British Coatings Federation (BCF)



Contact:
Emily Bradley
Emily.Bradley@bcf.co.uk
info@bcf.co.uk
www.coatings.org.uk/

Canadian Paint and Coatings Association (CPCA)

CANADIAN PAINT AND COATINGS ASSOCIATION

Contact:
Peter Mirtchev
pmirtchev@canpaint.com
info@canpaint.com
www.canpaint.com/

China National Coatings Industry Association (CNCIA)

Contact:
Lian Ying Sun
office@cncia.net.cn
www.apic-paint.asia/members/cncia.html

European Council of the Paint, Printing Ink and Artists' Colours Industry (CEPE)

CEPE
The voice of paint, printing ink and artists' colours in Europe

Contact:
Karthik Kumar
K.Kumar@cepe.org

Christel Davidson
c.davidson@cepe.org
secretariat@cepe.org
www.cepe.org/

French Paints, Printing Inks, Artist Colours and Adhesives Association (FIPEC)

Fipec

Contact:
Emilie Blaise
emilie.blaise@fipec.org
accueil@fipec.org
www.fipec.org/
www.syndicats.fipec.org/index.php/accueil-sipev

German Paint and Printing Ink Association (VdL)

Verband der deutschen Lack- und Druckfarbenindustrie e.V.

Contact:
Dr. Sandra Heydel
heydel@vci.de
vdl@vci.de
www.wirsindfarbe.de/

Japan Paint Manufacturers Association (JPMA)

JPMA

Contact:
Tsutomu Baba
info@toryo.or.jp
www.toryo.or.jp/en/

Malaysian Paint Manufacturers Association (MPMA)

Malaysian Paint Manufacturers' Association
Persatuan Pembuat Cat Malaysia

Contact:
Gladys Goh
gladysgoh@nipsea.com.sg
www.mypma.org.my/

Mexican Paint and Printing Ink Manufacturers' Association (ANAFAPYT)

ANAFAPYT
ASOCIACIÓN NACIONAL DE FABRICANTES DE PINTURAS Y TINTAS

Contact:
Flor de María González Mariblanca,
flordemaria@anafapyt.org.mx

Brenda Camacho Correa
brenda@anafapyt.org.mx
www.anafapyt.com/

New Zealand Paint Manufacturers Association (NZPMA)

PAINTMAN
NEW ZEALAND PAINT MANUFACTURERS ASSOCIATION INCORPORATED

Contact:
Donna Vincent
admin@paintman.org.nz
admin@paintman.org.nz
www.paintman.org.nz/

South African Paint Manufacturers Association (SAPMA)



Contact:
Tara Benn
tara@sapma.org.za
sapma@sapma.org.za
www.sapma.org.za/

Spanish Association of Manufacturers of Paints and Printing Inks (ASEFAPI)



Contact:
Jose Luis Diez
secretariogeneral@asefapi.es
www.asefapi.es/

Association of the Paint Industry in Turkey (BOSAD)



Contact:
Rami Atikoğlu
Rami.atikoglu@basf.com
bosad@bosad.org.tr
bilge.cetin@bosad.org.tr
www.bosad.org.tr/

Definition of Material Issues

Business Model & Innovation	
Customer Satisfaction	Ensuring customer satisfaction through high quality products, good service and competitive prices.
Economic Performance	Strong financial performance to support continued growth of the industry.
Circular Economy and New Business Models	Applying circular thinking to the industry's products and services in order to create new business opportunities (e.g., product as a service or sharing models).
Product Design and Lifecycle Management	Designing products and services with the whole lifecycle in mind and offering sustainable solutions for every step of our value chain.
Research and Development	Developing new technologies and innovative products to meet ecological, societal and technological challenges and ensure a sustainable growth of the industry.
Digitalization and Data Security	Grasping the opportunities offered by digital innovations (Internet of Things, Artificial Intelligence, digitalization of processes) whilst taking precautions to ensure the safety of IT systems and customer data.

Environment	
Greenhouse Gas Emissions and Climate Strategy	Tracking greenhouse gas emissions (especially carbon dioxide and methane) and developing sound strategies for climate change mitigation and adaptation.
Air Quality	Ensuring clean air by managing emissions of pollutants from operations and products, especially with regard to nitrogen oxide, sulfur oxide, volatile organic compounds (VOC) and hazardous air pollutants (HAP).
Water and Wastewater Management	Minimizing water consumption in all core production processes through conservation and reuse, as well as environmentally conscious discharge of wastewater.
Waste and Hazardous Materials Management	Reducing waste throughout the manufacturing processes by minimizing material inputs, reusing and recycling waste materials, also eliminating hazardous materials whenever feasible.
Biodiversity	Reducing negative impacts of the coatings industry's activities and products on biodiversity, land use and the marine environment.
Renewable Energies and Energy Management	Establishing energy management throughout the industry, reducing energy consumption and increasing the share of renewable energies, as well as supporting innovations linked to renewable energy technologies with functional coatings.
Efficient Choice and Use of Raw Materials	Continually pushing for a more efficient use of raw materials to minimize the environmental footprint whilst saving costs, as well as choosing eco-friendly raw materials and replacing virgin material with recycled materials.

Human Capital

Diversity and Inclusion	Providing ways to maintain and increase diversity of race, ethnicity, age, gender, religion, sexual orientation, gender identity, gender expression, disability, economic status and other diverse backgrounds for management and other employees in the coatings industry.
Attracting and Retaining Employees	Hiring and retaining a highly qualified, creative and motivated workforce and actively monitoring workforce demographics.
Training and Education	Offering vocational training and retraining to all employees and enable lifelong learning and personal development.
Labor Rights	Ensuring labor rights within the companies of the industry, as well as their business partners, based on the core labor standards of the UN International Labour Organization (including freedom of association, the right to collective bargaining, the prohibition of all forms of forced labor, elimination of child labor and protection against discrimination).
Employee Health and Safety	Protecting employees and contractors from occupational injuries and illnesses through safe operations and work practices, safety training and management systems.

Leadership & Governance

Corporate Governance and Ethics	Implementing processes that ensure ethical conduct of employees in the coatings industry towards suppliers, customers, regulators, and other business partners.
Compliance and Anti-Corruption	Ensuring employees comply with all applicable government regulations regarding corruption, bribery and fraud, as well as company-specific codes of conduct.
Management of the Legal and Regulatory Environment	Providing information to member companies related to government regulations or policy proposals that address environmental and social factors affecting the coatings industry, as well as working towards a reduction in the complexity of laws and regulations.

Social Capital

Responsible Supply Chains	Engaging with actors along the supply chain to ensure suppliers are upholding human and labor rights and reducing negative environmental impacts.
Community Relations and Contribution to Industrial Development	Supporting communities at the company locations through donations, sponsoring, charity projects and corporate volunteering, as well as contributing to industrial development on a regional level and beyond.
Stakeholder Engagement and Public Policy	Engaging in a dialogue with relevant stakeholder groups to identify economic, environmental and social challenges and jointly work towards solutions.
Product Safety and Stewardship	Working with business partners, consumer protectors and government agencies to ensure a safe use and disposal of coating products.
STEM Education and Learning	Supporting the understanding of science, technology, engineering and mathematics needed to develop innovative coatings solutions via initiatives with kindergartens, schools and universities.

Participating Companies

Company	Country
Acoplásticos	Colombia
ACTEGA Terra GmbH	Germany
ADLER-Werk Lackfabrik GmbH & Co. KG	Austria
AkzoNobel	Netherlands
AkzoNobel South America	Philippines
Altex Coatings Ltd	Brazil
Axalta Coating Systems	USA
Baril Coatings B.V.	Netherlands
BASF Corporation	Germany
Boss Paints	Belgium
Boysen Philippines	Philippines
Chugoku Marine Paints, Ltd.	Japan
Cloverdale Paint	Canada
Concept Paints	Australia
Craig & Rose Ltd	UK
Comex	Mexico
Cromology	France
DAI NIPPON TORYO CO.,LTD	Japan
DAW SE	Germany
Domino Printing Sciences	UK
Dörken Coatings GmbH & CO. KG	Germany
Dow	USA
Dunn-Edwards Corp	USA
DYO	Turkey
Eurofins	Luxembourg
Fujichem Sonneborn Ltd	UK

Company	Country
Grpo Ind. HITRA, SA de CV	Mexico
Hempel A/S	Denmark
HMG Paints	UK
HP Inc.	USA
Hubergroup Deutschland GmbH	Germany
Industrias Titan	Spain
IPL Tamworth	UK
Jotun AS	Norway
Kansai Paint Co., Ltd.	Japan
Kelly-Moore Paint Co.	USA
KRAHN Chemie Deutschland GmbH	Germany
Micro Powders	USA
Mizutani Paint Co., Ltd.	Japan
Nippon Paint Holdings Co., Ltd.	Japan
NP Automotive Coatings (Europe) Ltd	UK
Organik Kimya	Turkey
P.A. Jansen GmbH u. Co., KG	Germany
Paint+	New Zealand
Paint360	UK
Paragon Inks	UK
Parker LORD	USA
Paumar S/A - Industria e Comercio	Brazil
Pinturas Doal SA de CV	Mexico
Pinturas Lepanto	Spain
Pinturas Mexicanas de Puebla SA de CV	Mexico

Company	Country
Pinturas y Recubrimientos Avitla S.A. de C.V	Mexico
Polyvine Ltd	UK
PPG	USA
Pulse Printing Products Ltd	UK
Reincke Naturfarben GmbH	Germany
Renner Sayerlack SA	Brazil
Resene Paints Ltd	New Zealand
Signet	Germany
Sika Deutschland GmbH	Germany
Sime Kansai Paints Sdn Bhd	Malaysia
Sun Chemical Ltd	USA
Synthomer	UK
T & R Williamson Ltd	UK
Teknos	Finland
The Sherwin-Williams Company	USA
Tikkurila Oyj	Finland
Tnemec Company, Inc.	USA
UGL	Australia
U-POL	UK
Uroxsys Limited	New Zealand
Valspar NZ	New Zealand
Wacker Chemical Corporation	Germany

DISCLAIMER

While reasonable efforts have been made to include reliable data and information in this report, the WCC cannot assume responsibility for the validity of all facts, data, and materials contained herein, the consequences of their use, or any translation of the contents of these stories. The information contained in this report was created and/or compiled by WCC, the WCC member organizations, or its agents, and is offered solely to aid the reader. To the fullest extent permissible under applicable law, WCC and its member companies do not make any guarantees, representations, or warranties of any kind, express or implied, with respect to the accuracy and completeness of the information contained herein and assume no responsibility for the use of this information. The WCC and its member companies do not assume any responsibility to amend, revise, or update information contained herein based on information which becomes available subsequent to publication.



World Coatings Council℠

Published by:
World Coatings Council
901 New York Ave NW
Suite 300 West
Washington, DC 20001
www.worldcoatingscouncil.org

This report was written for the World Coatings Council by:
Response, www.good-response.de.