

## **PPG's Industrial Coatings Segment – Information Session**

September 15, 2021



## **Forward looking statements**

This presentation contains forward-looking statements that reflect the Company's current views with respect to future events and financial performance. You can identify forward-looking statements by the fact that they do not relate strictly to current or historic facts. Forward-looking statements are identified by the use of the words "aim," "believe," "expect," "anticipate," "intend," "estimate," "project," "outlook," "forecast" and other expressions that indicate future events and trends. Any forward-looking statement speaks only as of the date on which such statement is made, and the Company undertakes no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our reports to the Securities and Exchange Commission. Also, note the following cautionary statements:

Many factors could cause actual results to differ materially from the Company's forward-looking statements. Such factors include global economic conditions, increasing price and product competition by foreign and domestic competitors, fluctuations in cost and availability of raw materials, the ability to achieve selling price increases, the ability to recover margins, customer inventory levels, our ability to maintain favorable supplier relationships and arrangements, the timing of and the realization of anticipated cost savings from restructuring initiatives, the ability to identify additional cost savings opportunities, difficulties in integrating acquired businesses and achieving expected synergies therefrom, economic and political conditions in the markets we serve, the ability to penetrate existing, developing and emerging foreign and domestic markets, foreign exchange rates and fluctuations in such rates, fluctuations in tax rates, the impact of future legislation, the impact of environmental regulations, unexpected business disruptions, disruption to our business resulting from the COVID-19 virus, the results of governmental investigations and the unpredictability of existing and possible future litigation. However, it is not possible to predict or identify all such factors. Consequently, while the list of factors presented here and under Item 1A of PPG's 2020 Form 10-K is considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements. Consequences of material differences in the results compared with those anticipated in the forward-looking statements could include, among other things, lower sales or income, business disruption, operational problems, financial loss, legal liability to third parties, other factors set forth in Item 1A of PPG's 2020 Form 10-K and similar risks, any of which could have a material adverse effect on t



## **PPG** speakers and attendees









## What we intend to share with you today...

Growth Aligned w/ Secular Themes	Differentiated Innovation	Modernizing Productivity	
Well Positioned for Above Market Organic Growth	Leveraging One PPG: Advanced Technology	Driving Stability, Speed, & Customer Intimacy	
1 Mobility coatings products	Broad and robust new product pipeline; advancing technology advantaged capabilities	Developing the operator of the future for the factory of the future	
Global scale and product breadth drive strong customer support capabilities	Developing sustainable products to assist customers in reaching their goals	Reducing product complexity to further reduce costs and create customer value	
3 Strategic acquisitions complement areas of growth focus	3 Leveraging data and services to further enhance customer intimacy	3 Utilizing advanced manufacturing to leverage use of data and assets	

Building long-term shareholder value with sustainable strategy and focus







## **Automotive**

#### **End-Uses**









#### **PPG Competitive Advantages & ESG Highlights**

- 1) Leading positions across key product lines
- 2) Global leader in new factory start-ups
- 3) Improving customers' sustainability (less water and energy consumption); enabling conversion to electrification
- 4) Innovation leader: delivering new advantaged technology products
- 5) Leading digital color capability

#### **Industry Trends**

- Mobility: electrification, autonomous vehicles
- Compaction of paint layers
- Removing manual processes
- Seeking sustainability solutions at same quality

#### **Recent PPG Acquisitions**







*April* 2019



## **Industrial Coatings**

#### **End-Uses**













#### **PPG Competitive Advantages & ESG Highlights**

- 1) Global leader in waterborne coatings
- 2) New product offerings (e.g., Coraflon® Platinum and ErgoLuxe®)
- 3) Partner with customers for product innovation
- 4) Continued investment in powder coatings offering benefits of low waste & zero applied VOC emissions

#### **Industry Trends**

- Coatings demand typically correlated to industrial production and construction
- Increasing customer focus on environmental impact
- Customer investments in emerging economies continue

#### **Recent PPG Acquisitions**





Alpha Coating Technologies
a wholly-owned subsidiary of PPG
February 2020





June 2021



## **Packaging Coatings**

#### **End-Uses**







#### **PPG Competitive Advantages & ESG Highlights**

- Enables life cycle circularity of aluminum and metal packaging
- 2) Continued PPG investment in capacity for sustainably advantaged solutions
- 3) Support customers, and their efficiency goals with industry-leading technical service teams
- 1) PPG SafeAssure™ program for consumer safety

#### **Industry Trends**

- Consumer preferences are driving growth of metal packaging (sustainability, portability, performance, and safety)
- Unparalleled customer investment in metal can-making capacity
- Continued and increased attention on materials of concern

# Metal Packaging End-use markets Other Beverage Food Care



## **Specialty Coatings & Materials**

#### **End-Uses**















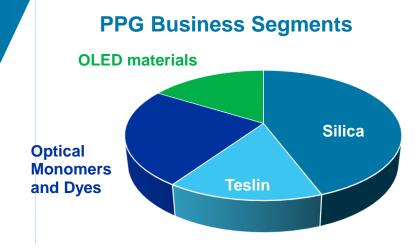


#### **PPG Competitive Advantages & ESG Highlights**

- 1) A portfolio of sustainably-driven, advanced technologies
- 2) A technology leader in high performance silicas
- World-class quality and commercialization speed for energy-efficient OLED emitters
- 4) Leader in optical materials for lenses

#### **Industry Trends**

- Auto fuel efficiency regulations driving increased silica demand
- Display industry shifting from LCD to OLED
- 2 billion people, and growing, need vision correction (Optical Monomers)
- Increasing focus on durability and document security (Teslin)







## Well-positioned in secular growth areas

#### TRENDS & DRIVERS

**EV & Mobility** 



EV builds, urban mobility, environmental footprint

**Powder Solutions** 



- Sustainability advantages
- Zero waste

**Consumer Products** 



- Work from home
- Shift from single-use plastics
- Sustainable solutions
- Growth in touch-screens

**Monetizing Services** 



- Greater customer intimacy
- Access to data

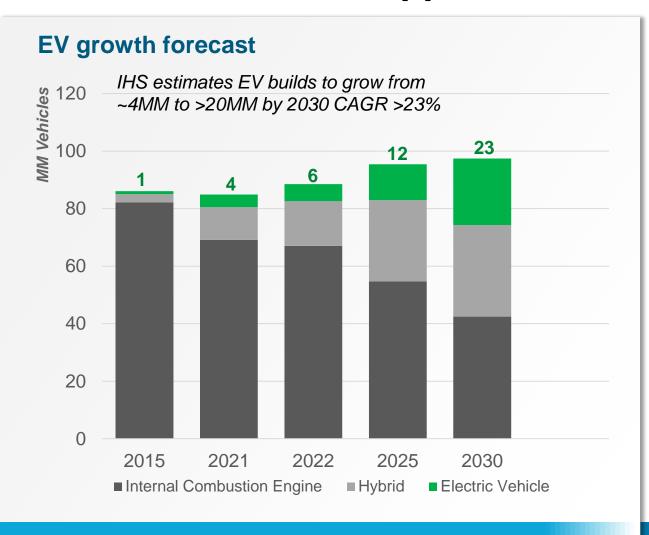
**Acquisitions** 



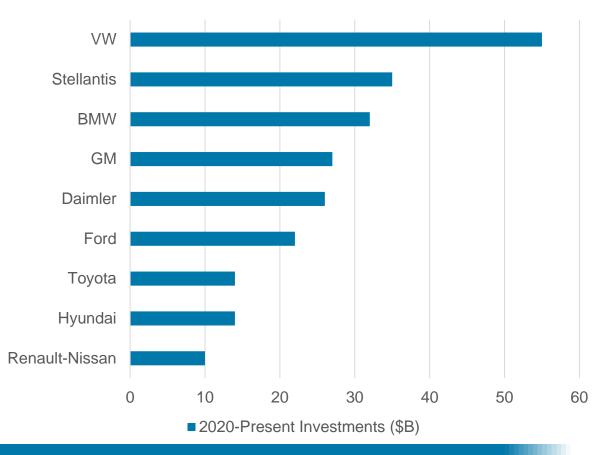
 Expanding technologies, product breadth, and customer reach



## **OEM** investments support forecasted growth



#### **Announced investments in EVs and FCVs**

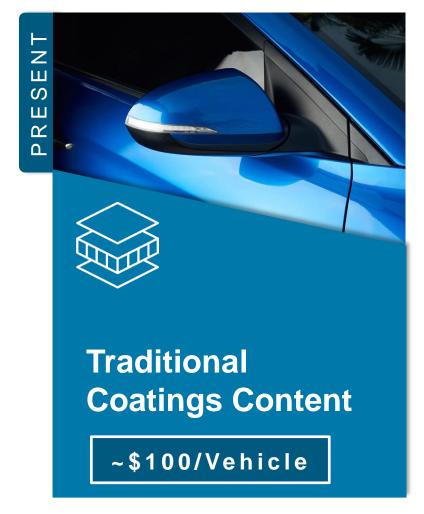


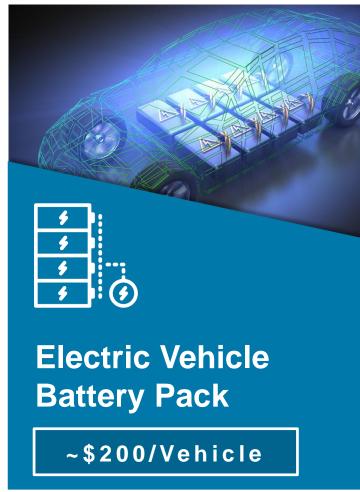
~\$300 billion in EV investment

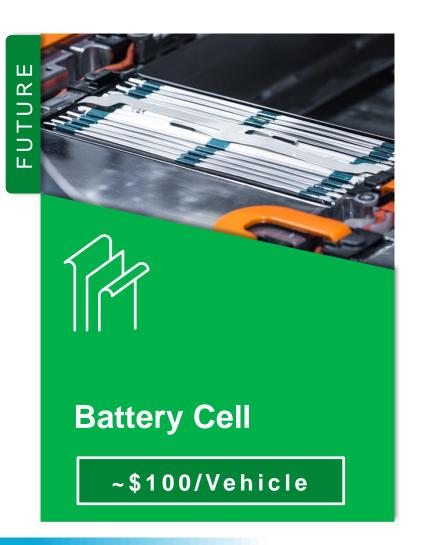
~100 new EV models by 2025



## PPG is expanding content per vehicle







2025 EV Coating Total Addressable Market ~\$2.5B



## PPG's battery coatings deliver needed benefits

## **Challenges ENHANCED BATTERY** PERFORMANCE **Fire Protection IMPROVED BATTERY SAFETY Dielectric Isolation AUTOMATED APPLICATIONS Thermal** Management **REDUCED BATTERY COST**

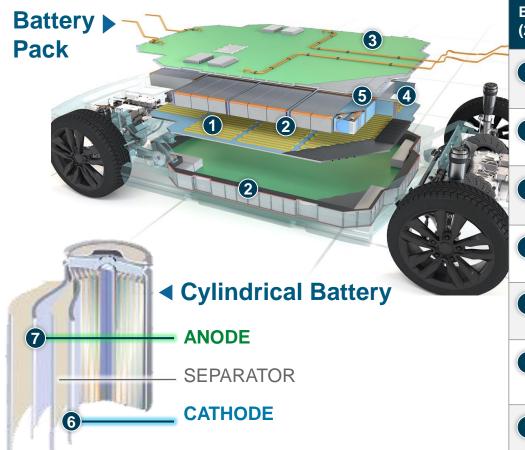
#### **Value / Benefits:**

- Automotive OEM
  - Manufacturing at scale
  - Customizable solutions
  - Lower applied cost
  - Battery performance
  - Occupant safety
- Consumer
  - Longer range
  - Faster charging rates
  - Occupant safety

PPG Solutions help address Performance, Safety & Manufacturability



## PPG's solutions for electrification



End-Use/Product (2025 Estimated Sales \$MM)	соѕт	PERFOMANCE	SAFETY	Customer Status
Thermal Conductive     Fillers	<b>✓</b>	<b>✓</b>	<b>✓</b>	• • •
2 Adhesives & Sealants	<b>✓</b>	<b>✓</b>		• • •
3 Corrosion & Impact Protection	<b>✓</b>	<b>✓</b>	<b>✓</b>	• • •
Dielectric Protection	<b>✓</b>	<b>✓</b>	<b>✓</b>	• • •
5 Battery Fire Protection	<b>✓</b>	<b>✓</b>	<b>✓</b>	• • •
6 Cathode Binder Formulation	<b>✓</b>	<b>✓</b>	<b>✓</b>	• •
7 Anode Binder Formulation	<b>✓</b>	<b>✓</b>		•
	<ul><li>Awarde</li></ul>	d Active Pipelin	e Next G	en Development

Enabling cost, performance and safety



## **PPG Mobility pipeline continues to grow**

Customer	Binder	Dielectric	Corrosion	Sealing & Bonding	Thermal Materials	Fire Protection
OEM 1						
OEM 2						
ОЕМ 3						
OEM 4						
OEM 5						
ОЕМ 6						
OEM 7						
OEM 8						
OEM 9						
OEM 10						
Battery 1						
Battery 2						
Battery 3						
Battery 4						

## **Year in Review Progress**

200% increase in pipeline

## 35 qualifications

new products have been commercialized

>15 program wins aligned with OEM EV leaders



## Application solutions for battery fire protection (BFP)

PPG technology enables high efficiency and low labor costs

HIGH	APPLICATION:	EFFICIENCY:	LABOR:
N M E	Robotic Applied Coating	High	Low
UILD VOL	Hand Applied Coating	Med	Med
Low	Blankets, Mica Sheets  photo credit: glt products	Low	High

PPG's BFP provides scalability







## Auto Parts: Total system solution provides organic growth

Complete layering system for legacy products



- Powder & liquid clearcoats
- Liquid basecoats
- Powder primers
- Pretreatment

Value to Customer

System performance

Selling existing and EV/mobility portfolios to Tiers supporting EV



- Battery back structure coatings
- Plastic parts coatings
- Chassis and structure coatings

Technically proven solutions
PPG expertise and market access
One stop shop

## Capturing higher content from modularization



- Latch, hinges and fasteners coatings
- Outer panel and spoiler coatings
- Polymer to polymer adhesives
- Sensor coatings

Breadth of portfolio: low temperature cure, adhesives and sealants, E-coat, liquid functional coatings, interior PPG expertise



## Powder technology organic secular growth opportunity

\$10B segment and growing faster than the market driven by sustainability

# Premium product innovation



#### POSITIONING AND OFFERING

- Three launches in '21 to target architectural aluminum, shared mobility, battery electric vehicles applications
- Heat sensitive, metallic bonding

# Superior customer service



- Color match, online ordering
- Liquid to powder conversion
- Technical expertise

Focus on strategic end uses, regions



- General industrial, aluminum extrusion, automotive/mobility
- Wood and wood alternative substrates
- Emerging regions, e.g. China

Leverage global scale and broaden infrastructure



- Platform and manufacturing harmonization
- Lower relative manufacturing costs
- Strategic M&A



## Consumer products organic secular growth opportunity

Deliver against consumer needs in growing categories: Electronics, kitchenware, canned beverage

#### POSITIONING AND OFFERING

#### **Product innovation**



- Electronic materials performance: anti-fingerprint, anti-glare, OLEDs
- Waterborne liquid alternatives to solvent-based

# Superior customer service



- Plant start-up support
- Technical expertise and training
- Quality and robustness

Deliver against consumer trends & needs



- Material of concern-free product roadmap
- Lead in sustainable product platforms
- Differentiated exterior coatings (colors, textures, finish)
- Brand owner engagement

Leverage scale and broaden infrastructure



- Simplify waterborne liquid platforms
- Expanded footprint and capacity expansion (emerging regions)
- Raw material localization and lab centralization



## PPG packaged beverage can technology sustainability advantages



#### POSITIONING AND OFFERING

- The leading global supplier of non-BPA/non-bisphenol inside spray coatings
- Water-borne technology; wide and versatile pack range
- Achieved Cradle to Cradle® Gold Certification™
- Globally compliant solution with localized production for optimized logistics



- Performance and specialty over varnishes protect and beautify the infinitely recyclable beverage can
- Specialty coatings that create sensory brand experiences on increasingly crowded cooler shelves
- Water-borne technologies; optimized for high-speed can lines
- Low VOC profile designed for improved cure efficiency



## Unlocking value for the customer through service capabilities

A multiple segment opportunity

**Coatings Optima Solutions** Support Service Solutions UNDERSTANDING OF VALUE Advanced Problem Quality Paint Shop Management Solving Operations support Chemical Management Data and Al Appearance Paint Line Cleaning Sustainability Quality Laboratory Services Sensor & Monitoring Demand Planning Application Services Inventory Management



Leveraging digital tools to build insights and deliver value



## Industrial Segment acquisitions provide unique strategic value

Recent Acquisitions					
HEM	MELRATH	wörwag	CETELON		
Revenue	~\$160MM	~\$260MM	~\$40MM		
End Markets	Automotive coatings	Auto Parts, Powder, Film	Wheel		
Alpha Coating Technologies  a wholly-owned subsidiary of PPG		Whiters	TIKKURILA		
Revenue	~\$10MM	~\$220MM	~\$100MM Industrial Segment Only		
End Markets	Powder	Consumer products	Wood		

- ✓ Strategic and complementary to growth areas: Powder, Consumer, Electronics, Auto Parts
- ✓ Enhances PPG's ESG
  capabilities: reducing customers'
  carbon footprint, VOCs, and waste
- ✓ Incremental technology and product breadth: expanding offering for customers
- ✓ Expansion in higher growth emerging regions





## Continuing PPG's legacy of innovation supports long-term growth

#### **EV & Mobility**



#### Safety

- Performance and functionality
- Application at volume scale

## E-Coat/Corrosion Resistance



Extended protection – UV durability, edge protection

POSITIONING AND OFFERING

- Expanded operating windows low temperature cure
- New content pipe coatings

## **Powder Coatings**



- Corrosion protection edge-to-edge
- Dielectric functionality
- Better environmental solution

## **Digital Color**



- Remote working
- Decreases time to market
- Increased color options

#### **ESG**



- Sustainability embedded in innovation processes
- Products enable customer sustainability



## Increasing and adapting corrosion protection requirements

Corrosion is a significant challenge for coatings customers

Corrosion-resistant primer protects against wear and friction



Zinc-rich coatings protect steel against corrosion



Corrosion protection against high heat and in underwater environments



Corrosion inhibiting sealants & coatings create effective barriers of protection



Thin film pretreatment creates strong adhesion between multiple substrates



#### MARKET CHALLENGES

- Coat mixed material substrates
- Increase infrastructure longevity
- Regulation eliminating traditional corrosion inhibitors
- Coating in extreme environments
- Sustainability water and sludge savings
- Product life cycle

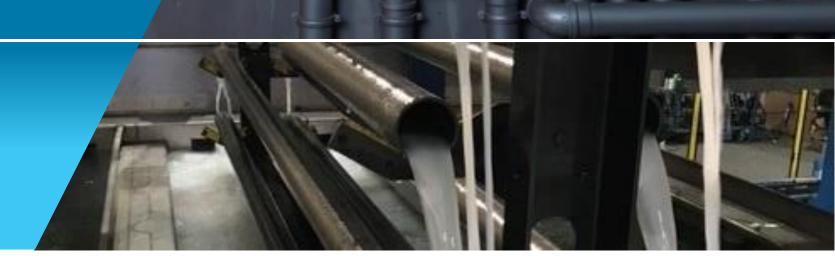


## New PPG electrocoat technology enables Charlotte Pipe

Hitting hard to reach places

Partnered with customer to tailor a new electrocoat technology and process

Created a high performance drain pipe that addresses a significant market gap









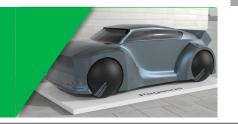
## PPG powder coating for the extrusion industry





## PPG is deploying digital tools to increase speed and agility

## **Color Styling**



#### POSITIONING AND OFFERING

- Connecting with our customers to differentiate their products
- Style color in real-time

#### **Color Matching**



- Digital color fingerprint
- Accelerate matching capabilities
- Reduce time to specification

#### **Formula Development**



- Prediction tools for weathering properties
- Generates global standards and enables quality manufacturing
- Modular factory creates easy pivot to end products

#### **Production**



- Adjust color in-line for quality batch production
- Use AI/ML sensors for accuracy
- Produce at scale on time and at demand
- Manufacture to order

Digital tools and new technology developments are synergistic and interdependent



## Changing the paradigm with digital color

#### Color is key decision factor for consumers

88% of respondents say color is a key deciding factor when buying a car, 99% in China<sup>1</sup>

64% said they would change manufacturers if favorite color was not offered<sup>1</sup>

Sources: 1.) Automotive Color Preferences 2021 Consumer Survey

#### **COLOR COMMUNICATION**

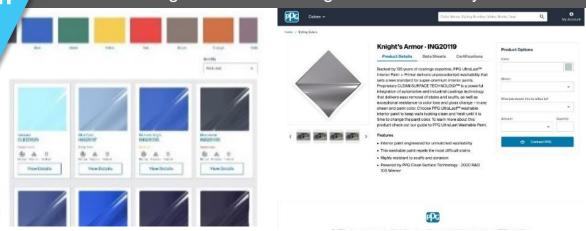
Color virtualization and rendering, Al applied to paint formulation



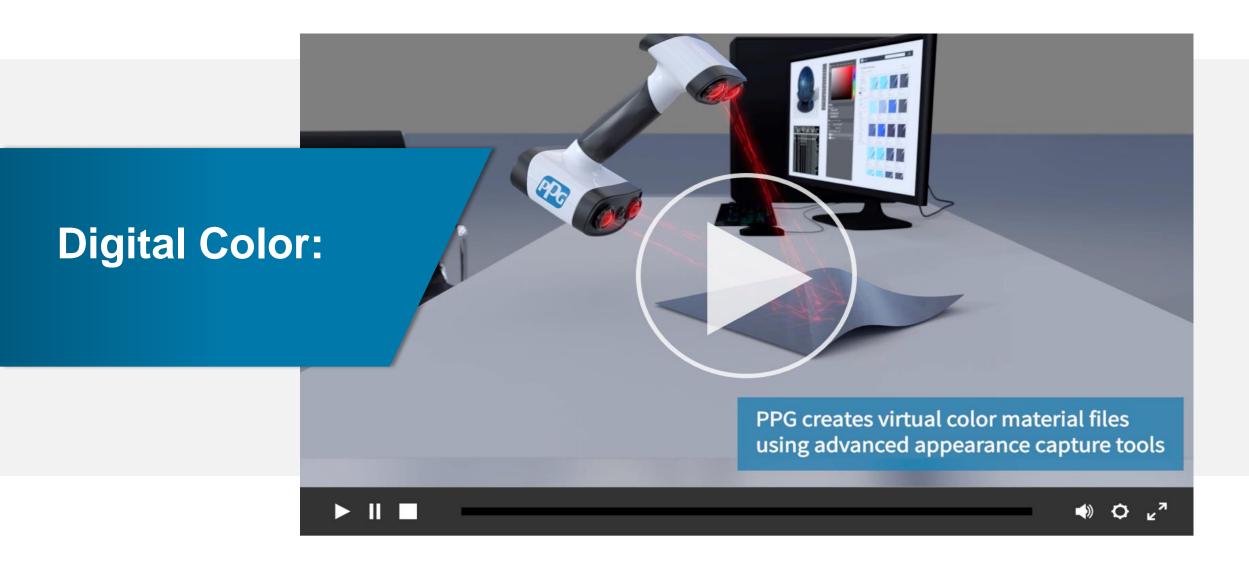
## PPG developing solutions to shift color paradigm

- Shift to digital color creates internal efficiency and augments the interaction with customers
- 60% reduction in cycle time for new colors
- More than 15 virtual color shows completed since mid-2020 kick-off

# FUNCTIONAL STYLING Digital Color Matching and Color Library









## PPG continues to plant seeds for the future

We have developed multiple technologies for additive manufacturing(3D printing)

#### POSITIONING AND OFFERING

Coatings for 3D printed parts



 PPG's primer promotes coating adhesion and smooths surfaces for thermoplastic parts

Electrocoat for 3D printed metal parts



PPG's core electrocoat technology delivers improved protection and increased coverage of complex 3D printed metal parts

Thermoset polymers for 3D printing

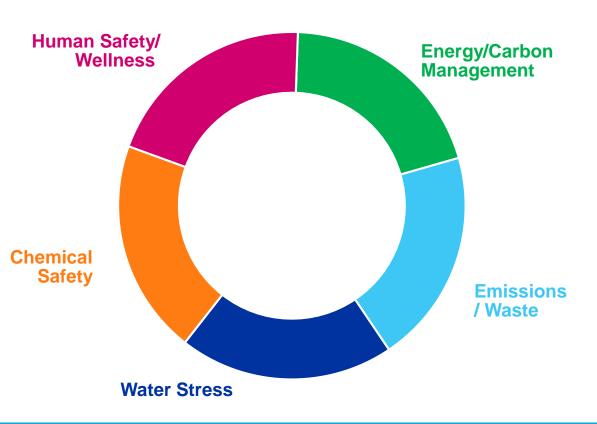


- PPG thermoset materials for 3D printing delivers:
  - A smoother surface finish
  - A reduction in post processing time ~50%
  - Reduced energy usage and is more sustainable
  - Supply chain consolidation



## PPG's product sustainable attributes provide needed benefits

# **Customer Challenges**



#### **PPG Benefits:**

#### **Energy/Carbon Management**

- Low temperature cure reduces energy consumption
- Battery products enable EV performance, reduces energy use
- Product life extension reduces energy, environmental and human impact
- Waterborne and high solids lower energy consumption

#### **Emissions/Waste**

- Improved transfer efficiency
- Recycle and reuse of overspray reduces waste

#### **Water Stress**

PPG services help to reduce customer water consumption

#### **Chemical Safety**

Focused removal of materials of concern

#### **Human Safety/Wellness**

Antimicrobial coatings, sanitizers and disinfectants offer human protection

35% (\$5B) of PPG products sold in 2020 delivered sustainable benefits





## PPG's operations roadmap to support growth

## **Continuous Improvement**

## **Portfolio Optimization**

## **Advanced Technologies**



- Lean Six-Sigma
- Standard work
- Built-in quality



- Platform consolidation
- Modular formulations
- Velocity optimization



- In-line analytics
- Digital quality control
- Advanced manufacturing technologies



## Advanced manufacturing technologies - modular factory

 Acquired technology; further deployed across PPG • Improved production efficiency, quality and sustainability • Fully enclosed and automated, and powered by Al quality algorithms • Current: Germany – 4 units, China – 2 units, Mexico – 1 unit

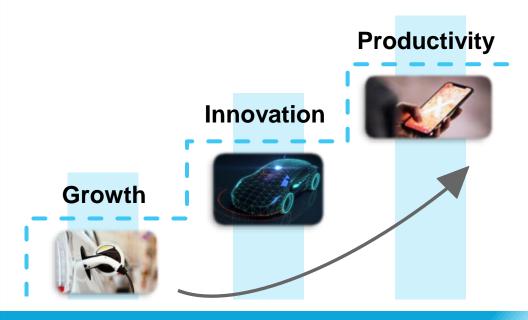


## PPG positioned for multi-year growth

#### **Key Takeaways**

- PPG's product breadth creates significant value
- Innovation leader in advanced product technologies enabling sustainability and consistent growth
- EV-related growth provides content expansion opportunity
- Acquisitions expand portfolio of technologies with significant synergy opportunities
- Advanced manufacturing positioning for the future

## **Industrial Segment Margin**



Driving margin to next peak level











## **Notes:**





We protect and beautify the world™