

# Innovation in the Automotive industry

How can 3M support the implementation of sustainable goals and fulfill the industry's expectations?

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# 3M at a glance



- Sales in ~200 countries
- \$32.8 billion in sales
- Four business groups
- 93,000 3Mers globally
- 115,000 patents
- 100+ straight years of dividends
- One of 30 companies on the Dow Jones Industrial Index



# 3M in Poland

27 years of sustainable development, a positive impact on the local economy and industry



## 3M SuperHub manufacturing 12,000 products

the biggest 3M production center in EMEA region located in Wroclaw (Poland)



## Sales & Marketing HQ

27 years of satisfying our customers needs with over 50,000 offered products



## Shared services for 53 countries

professional services by BPO center (GSC) in Wroclaw



## 600m USD

3M investment in Poland for last 10 years



## >4,500

employees



## R&D Center

>80 scientists & engineers working locally on innovations for 3M





“At 3M we apply science to solve customer problems, reduce environmental impact, and improve the lives of people around the world. As a purpose-driven enterprise, we are committed to working with our customers, business partners, and communities to innovate for a more sustainable future.”

**Mike Roman**

*Chief Executive Officer, 3M*

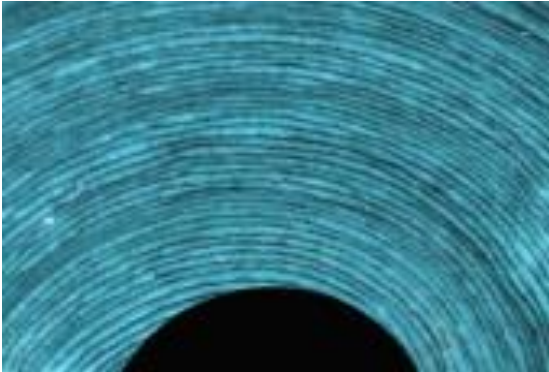


# 3M Sustainability Strategic Framework

**Our ambition:**     **Apply science to improve every life**

**Focus areas:**     **Science for circular**

**Aspirations:**     Design solutions that do more with less material, advancing a global circular economy.



**Science for climate**

Innovate to decarbonise industry, accelerate global climate solutions and improve our environmental footprint.



**Science for community**

Create a more positive world through science, and inspire people to join us.





# Driving sustainability in our own operations



## Pollution Prevention Pays

## 2025 Goals

**43 years**  
Started in 1975

**25 percent**  
Increase renewable energy  
to 25% of total electricity use

**10,000**  
3P Projects

**10 percent**  
Reduce global water use by an  
additional 10% indexed to sales

**2.1 million**  
Tons of pollutants  
prevented

**50 percent**  
Ensure GHG emissions at least  
50% below 2002 baseline

**\$2 billion**  
Saved (USD)

**250 million tons**  
Help customers reduce GHG's by  
250M tons with 3M products



An aerial photograph of a dense forest with various shades of green trees. The text is overlaid in the center-left area.

**Beginning in 2019, every new product that enters the new product commercialisation process must have a Sustainability Value Commitment, demonstrating how it drives impact for the greater good.**



# At 3M, sustainability is nothing new

3M™ PPS™ Paint Preparation System allows you to mix and spray paint from a single, closed cup system.

This improves operator efficiency up to 15%, whilst significantly reducing waste and solvent use for cleaning.





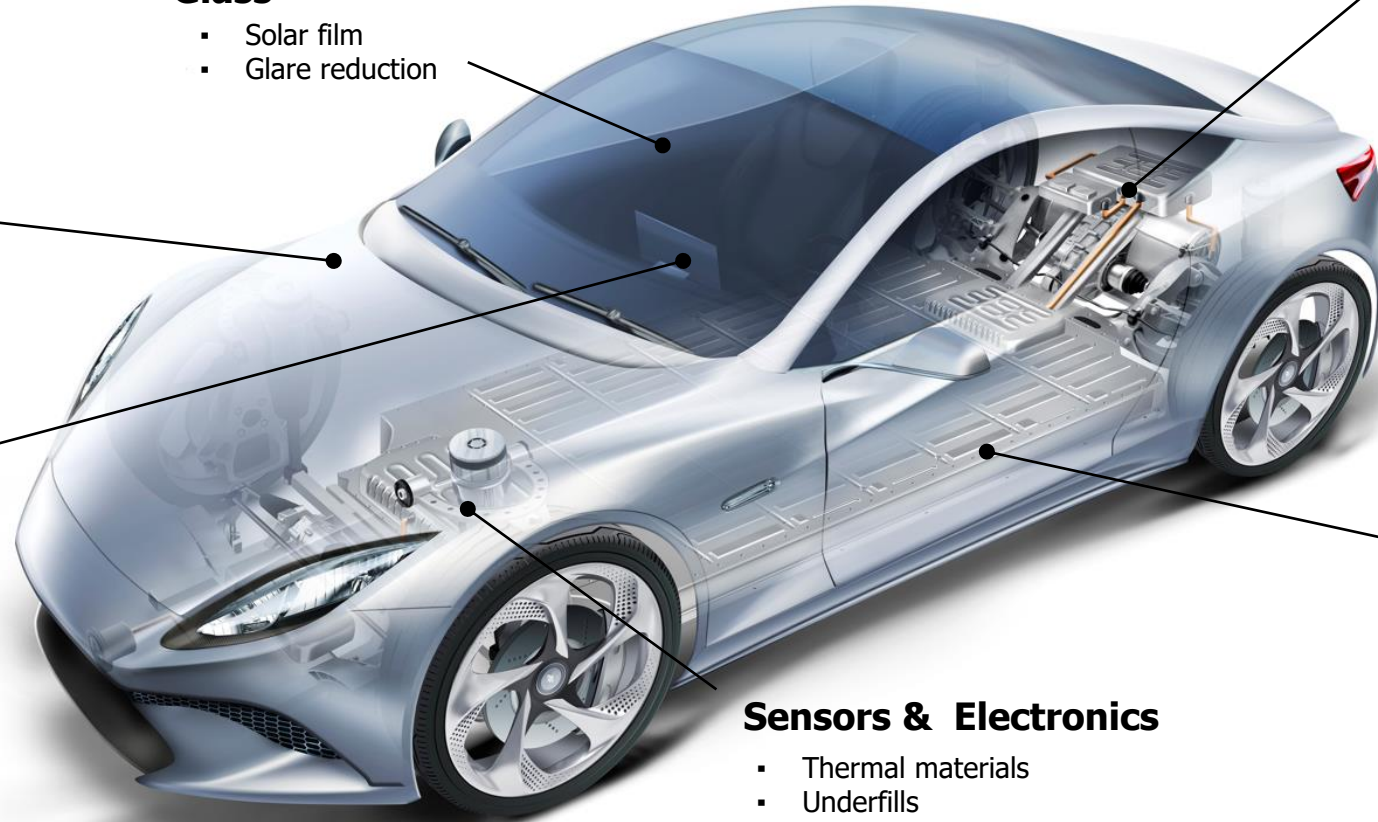
# Maximise your vehicle's energy ecosystem while delivering uncompromised performance

## Car Body

- Acoustic materials
- Thermal insulation materials
- Adhesives & tapes
- Light weight materials

## Glass

- Solar film
- Glare reduction



## Human Machine Interface

- Films
- Adhesives & tapes
- Thermal materials
- Shielding materials

## Sensors & Electronics

- Thermal materials
- Underfills
- Shielding materials
- Adhesives
- Tapes

## Motor

- Thermal materials
- Adhesives
- Powder resins
- Insulation paper
- Insulating tapes
- Underfills
- Shielding materials

## Battery

- Thermal materials
- Electrical insulating materials
- Cushion materials
- Fire protection materials
- Immersion cooling fluids
- Adhesives and tapes

# Lightweight solutions

## Because every ounce counts!



Components made of carbon fibre reinforced plastic are up to 40% lighter than steel, and thermoplastics can reduce weight by up to 30%.

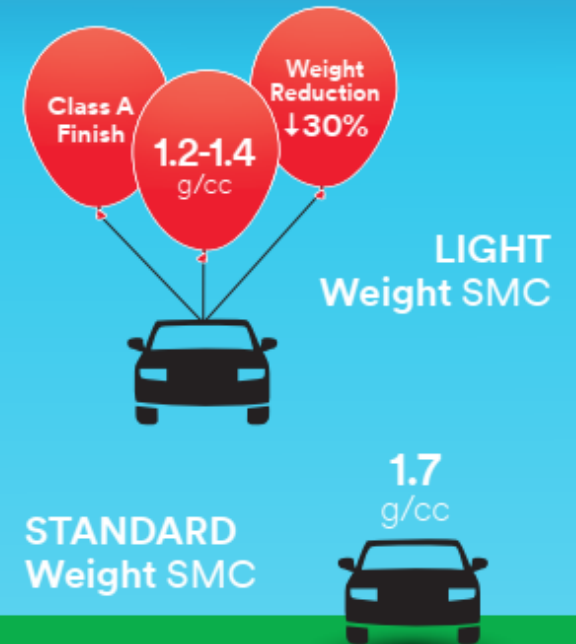
Acrylic adhesives improve aesthetics, bond to plastics and metals, and even deliver a secure bond between oily or contaminated surfaces.



Engineers are looking for solutions to reduce vehicle weight without sacrificing overall vehicle performance and power.

3M Friction Shims enhance friction to transmit higher loads while enabling more compact and lightweight designs.

Now there's a 3M™ Glass Bubble solution for all your SMC lightweighting applications:



**STANDARD Weight SMC**

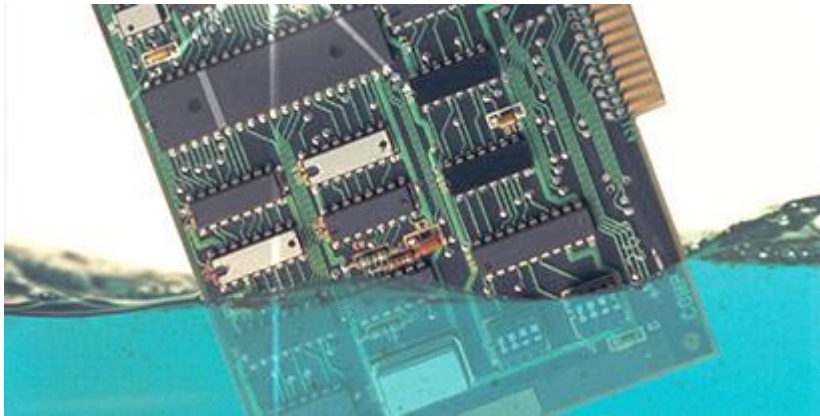
Lightweight SMCs made with 3M™ Glass Bubbles are the cost-effective alternative to aluminum, magnesium and conventional SMCs.



# EV battery performance

Go the extra mile.

Managing heat and battery performance are top priorities in EV battery design and production. We're working directly with automotive engineers to help develop cars that go further, while still optimising the entire energy management ecosystem.



3M™ Novec™ Engineered Fluids provide heat transfer solutions to extend the battery lifetime, whilst ensuring passenger safety.



Lightweight materials often generate more noise. The excellent compression recovery from 3M™ Thinsulate™ means it fills gaps and irregular spaces for extremely consistent noise absorption, whilst being 50% lighter than traditional insulation.

# Driver comfort

## The science inside.

Panoramic sunroofs and highly contoured glass are gaining popularity. These beautiful designs bring more light into the cabin. Decrease reliance on air conditioning, increase power efficiency and improve passenger comfort with 3M™ Ultra-Clear Solar Film.



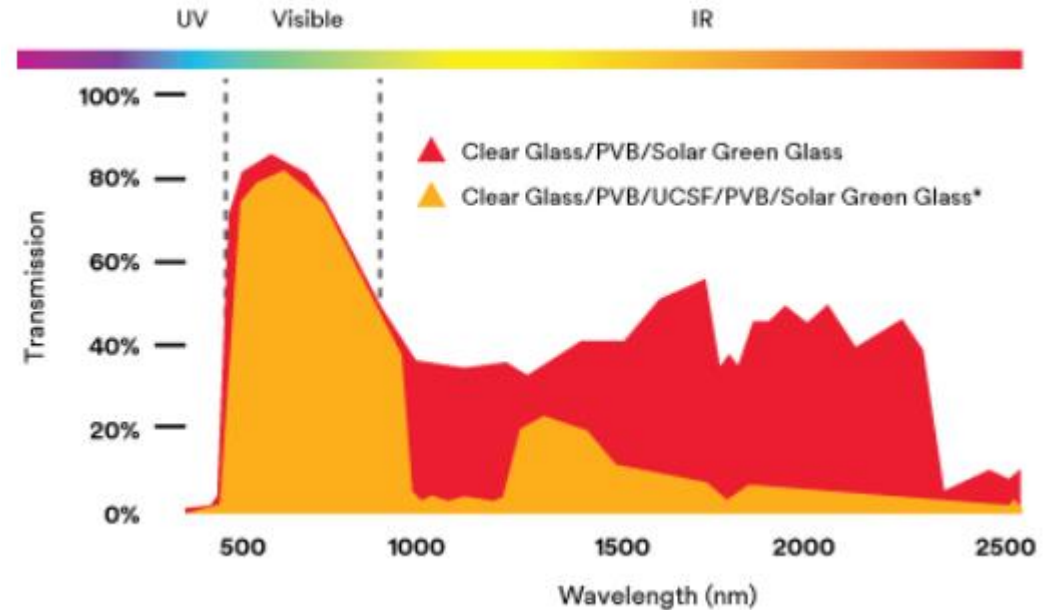
Reduction in skin surface temperature with a feeling sensation of up to 14°C cooler



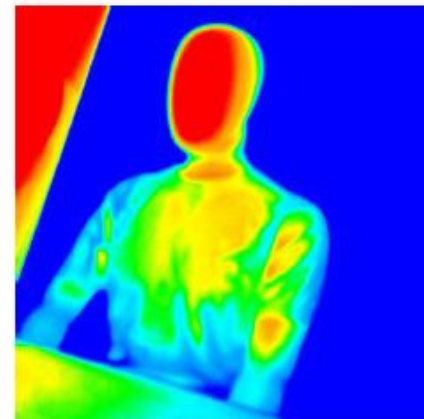
10% reduction in the power draw of the AC compressor and blower fan



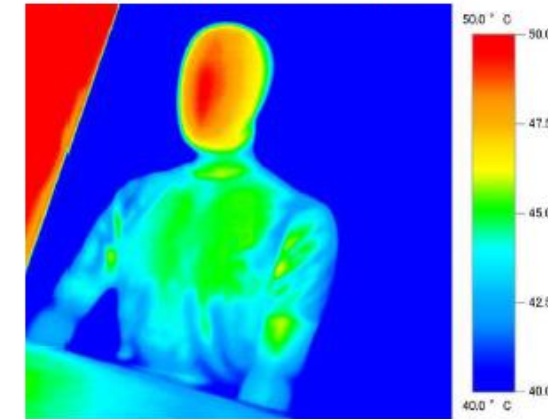
Minimal to zero Electromagnetic Interference (EMI)



Standard Windshield



Windshield using E-SCF & 3M UCSF





# Case study: Polish city buses

# 7500t

of CO<sub>2</sub> emissions

# 189M

litres of fuel

# 30k

litres of paint for new buses  
(20.2 litres per bus)



# ~450kg

weight reduction  
by using 3M™ Glass Bubbles



# ~1.5%

fuel reduction  
by using adhesives and tapes



# 100%

VOC emission  
reduction by using  
wrap films





An aerial photograph of a long, straight dirt road cutting through a vast, dense forest of pine trees. The sun is low on the horizon to the right, casting a warm, golden glow over the entire scene. In the distance, a prominent, rounded mountain peak rises above the treeline. A single dark-colored car is visible on the road, positioned in the lower third of the frame, facing away from the viewer.

**Coming together is a beginning,  
staying together is progress,  
and working together is success.**

~ Henry Ford



**3M** Science.  
Applied to Life.™

**Thank you.**

