

# AIRCOAT

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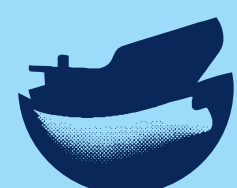
**A BIO-INSPIRED PASSIVE AIR  
LUBRICATION TECHNOLOGY TO  
INCREASE SUSTAINABILITY AND  
FUEL EFFICIENCY OF SHIPS**

27 September 2019

Graz, Austria

1st Sustainable Shipping Technologies Forum

Johannes Oeffner, Fraunhofer CML



**Project Coordinator**

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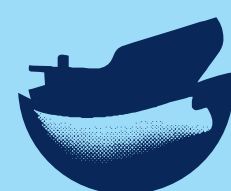
The AIRCOAT project has received funding from the  
European Union's Horizon 2020 research and innovation  
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**AIRCOAT**

# INTRODUCING AIRCOAT



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The Air Induced friction Reducing ship COATing (AIRCOAT) project aims to develop a passive air lubrication technology inspired by the Salvinia effect.



[www.aircoat.eu](http://www.aircoat.eu)



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# PROJECT PROFILE

## GRANTED FUNDING

**5.3** million Euros

## DURATION

**36** months  
(1. May 2018 – 30. April 2021)

## CALL

**MG-2.1-2017** – *Innovations for energy efficiency and emission control in waterborne transport.*

## PARTNERS

**10** partners from **6** countries



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# THE SALVINIA EFFECT

Complex micro- and nanostructures with hydrophobic surfaces create a permanent layer of air. Inspired by this phenomenon, AIRCOAT intends to implement this effect on a self-adhesive foil system.



MAGNIFICATION



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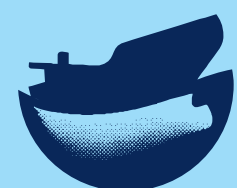
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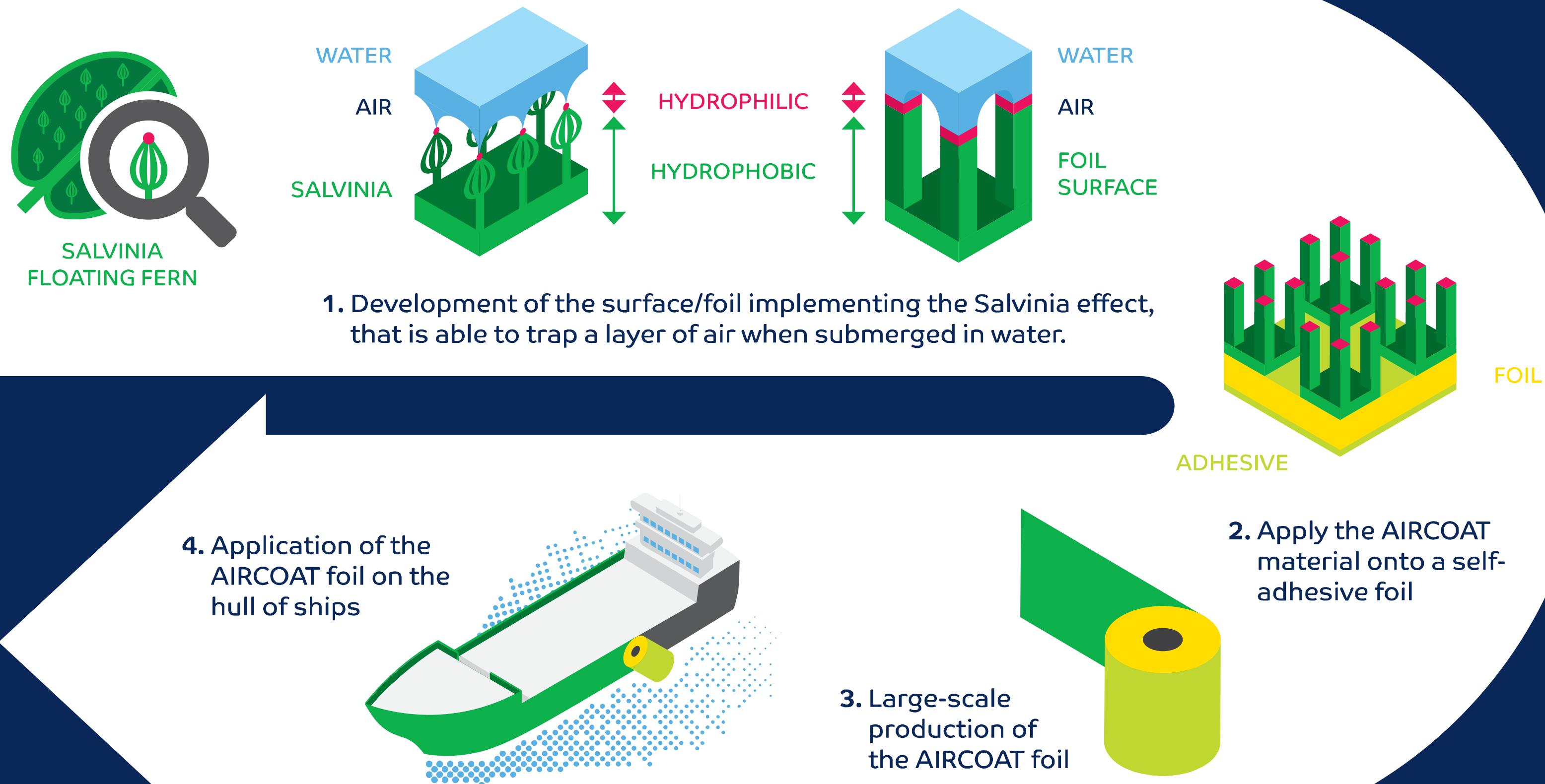
# CONCEPT & POTENTIAL



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# AIRCOAT CONCEPT



# AIRCOAT BENEFITS

PASSIVE AIR LUBRICATION



↓ **FRICTION**

↓ **ENERGY USE**

↓ **COSTS**

PHYSICAL BARRIER

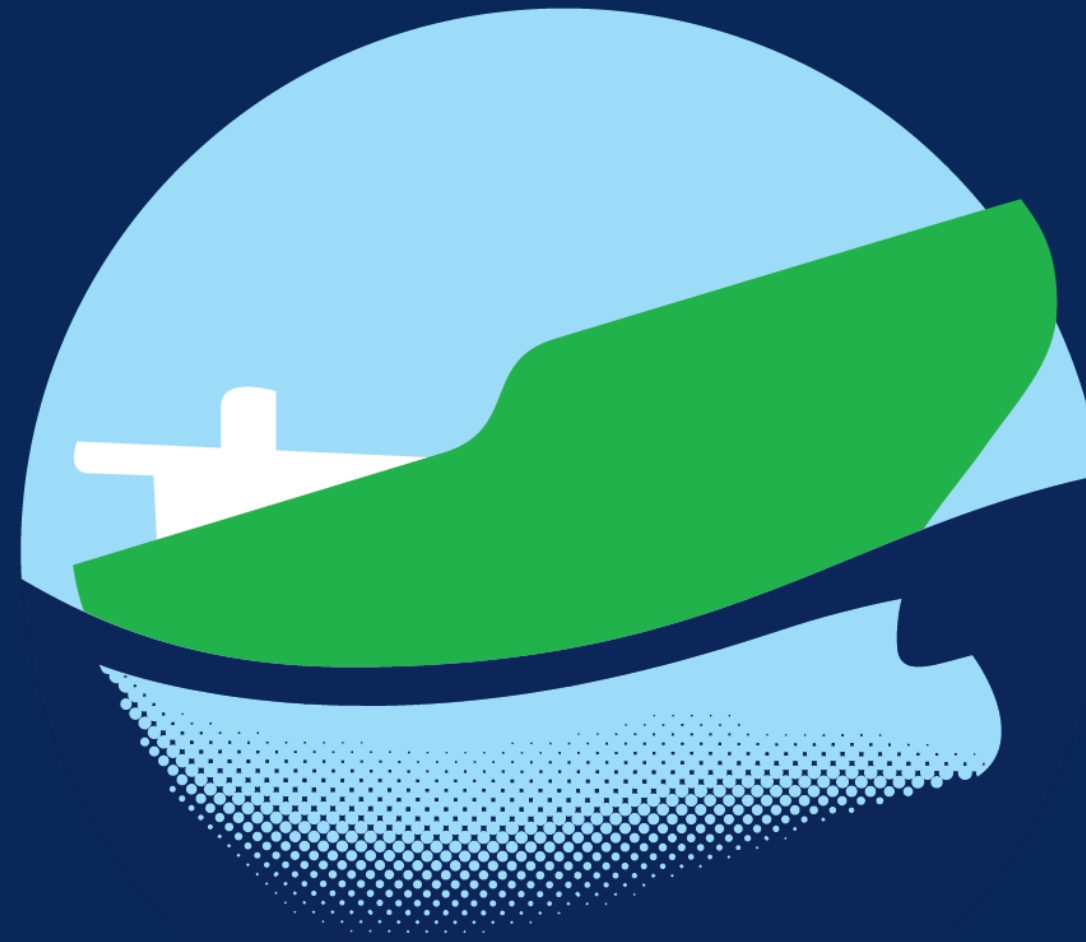


↓ **BIOFOULING**

↓ **CORROSION**

↓ **BIOCIDES**

↓ **NOISE**



↓ **EMISSIONS**

↑ **FUEL EFFICIENCY**

↑ **SUSTAINABILITY**

→ **REFIT TECHNOLOGY**

→ **NO APPLICATION**



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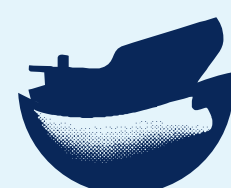
# VALIDATION CHALLENGE



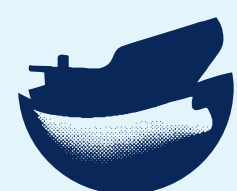
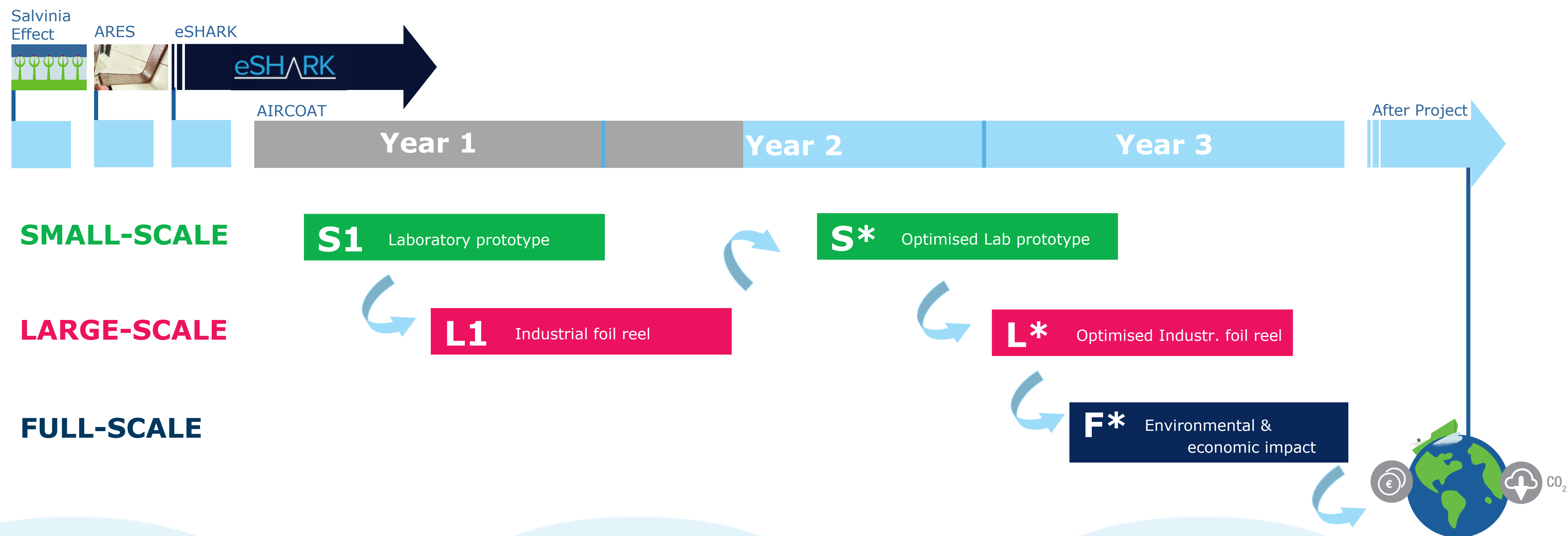
Microstructures



Macrostructures



# MULTI-STEP INNOVATION PROCESS



# THANK YOU FOR YOUR ATTENTION

 [info@aircoat.eu](mailto:info@aircoat.eu)

 [@AIRCOATProject](https://twitter.com/AIRCOATProject)

 [www.aircoat.eu](http://www.aircoat.eu)



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## Contact Information

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**LESS  
FRICTION**

**LESS  
FUEL USE**

**LESS  
EMISSIONS**