Lubrizol environmental goals and LCA approach

March 2024

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Environmental Footprint Goals

ENVIRONMENTAL FOOTPRINT GOALS

Our environmental footprint goals are embedded throughout the organization.

Emissions

Reduce Scope 1* and Scope 2* greenhouse gas emissions by **20% by 2030** (compared to a 2018 baseline).

Waste

Decrease our waste by **10% by 2030** (compared to a 2018 baseline). This includes reducing the amount of waste generated, reducing scrap and increasing recyclability.

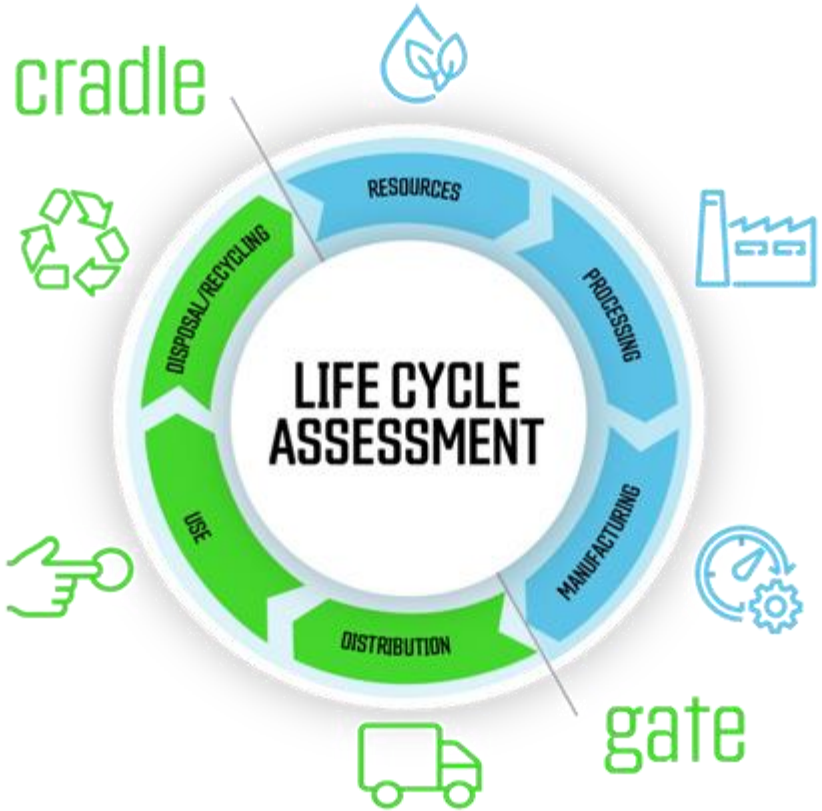
Water

Conduct water risk assessments at all Lubrizol manufacturing sites biennially to determine opportunities for additional improvements. We will also sponsor annual waterbody restoration or clean-up activities in the communities we call home.

Managing our Environmental Impact with a Life Cycle Assessment (LCA) Approach

MINIMIZING OUR FOOTPRINT

Impact of our operations



MAXIMIZING OUR HANDPRINT

Positive impact of our products in use

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Lubrizol's Corporate Footprint

~5MMT CO_2 eq/yr

Direct emissions from our operations	Indirect emissions from the purchase of electricity and steam	Raw materials (72%) + transport + commuting etc.
7%	8%	85%
SCOPE 1	SCOPE 2	SCOPE 3

Our Strategy for Scope 1 and 2

ENERGY EFFICIENCY/RECOVERY

NEW TECHNOLOGIES

RENEWABLE ENERGY

- Identify & actualize savings by focusing on low- or no-cost energy efficiency opportunities
- Reduce energy consumption and/or recover the energy by reclaiming the wasted energy throughout the facility
- Replacing old technologies and inefficient processes with new innovative technology
- Increase renewable energy – renewable electricity purchase

Examples Of Scope 1 & 2 Actions at Lubrizol Life Science (LLS) Beauty

BRAZIL

Plants powered by **100%** renewable energy

US

Avon Lake plant converts water treatment waste to natural gas

SPAIN

Plant sources all energy from low-carbon sources

Lowering Process Impact By Applying Green Chemistry Principles

The **12 principles** of green chemistry is a **framework** for designing and improving **materials, products and processes** to **reduce impact** that chemicals and their synthesis have on the **environment and health.**

OUR PHILOSOPHY:

Applying sustainable practices in our processes to have cleaner, safer and lower impact ingredients

Argireline® Amplified peptide

Carbopol® polymers

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Our Strategy for Scope 3 Raw Materials (RMs)

LCA approach

Understand better the complete environmental impact of our RMs in order to **make informed decisions**

Reduction of Scope 3 emissions

- Using **different RMs**
- **Engaging with our suppliers** to reduce the carbon footprint of the materials we buy from them

Several approaches to prioritize actions

- **Volumes of feedstocks** and **impact** on our environmental goals
- Availability and cost of new **technologies**
- **Business strategic needs** for footprint reduction

What is the impact for our Beauty partners?

Mapped a large majority of our Raw Materials in our **LCA software** and run **LCAs** on our **key product lines** including:

- Carbopol® polymers
- Merquat™ conditioning polymers
- Glucamate™ thickeners

Support our Beauty partners on their sustainability journey by encouraging collaborations around:

- The **development** of **robust data** on existing and new products
- Projects helping our partners to **reach their Scope 3 reduction targets**
- Projects addressing the **environmental impact assessment of their formulations**

Low Impact Technologies from LLS Beauty

AlgaPūr™

high stability high oleic algae oil

Created by the transformative powers of microalgae, a rich bio-oil for healthier skin, hair and scalp

CARBOPOL® Fusion S-20 polymer

Phenobio™ subcritical water technology

Sustainable down to a science

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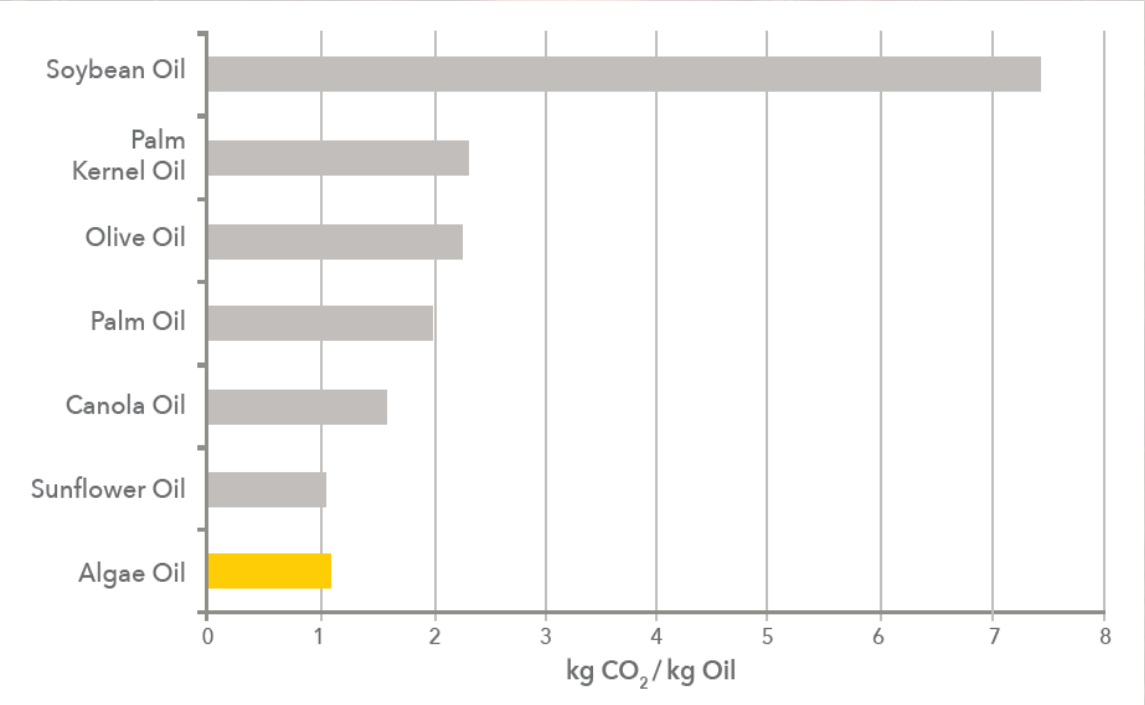
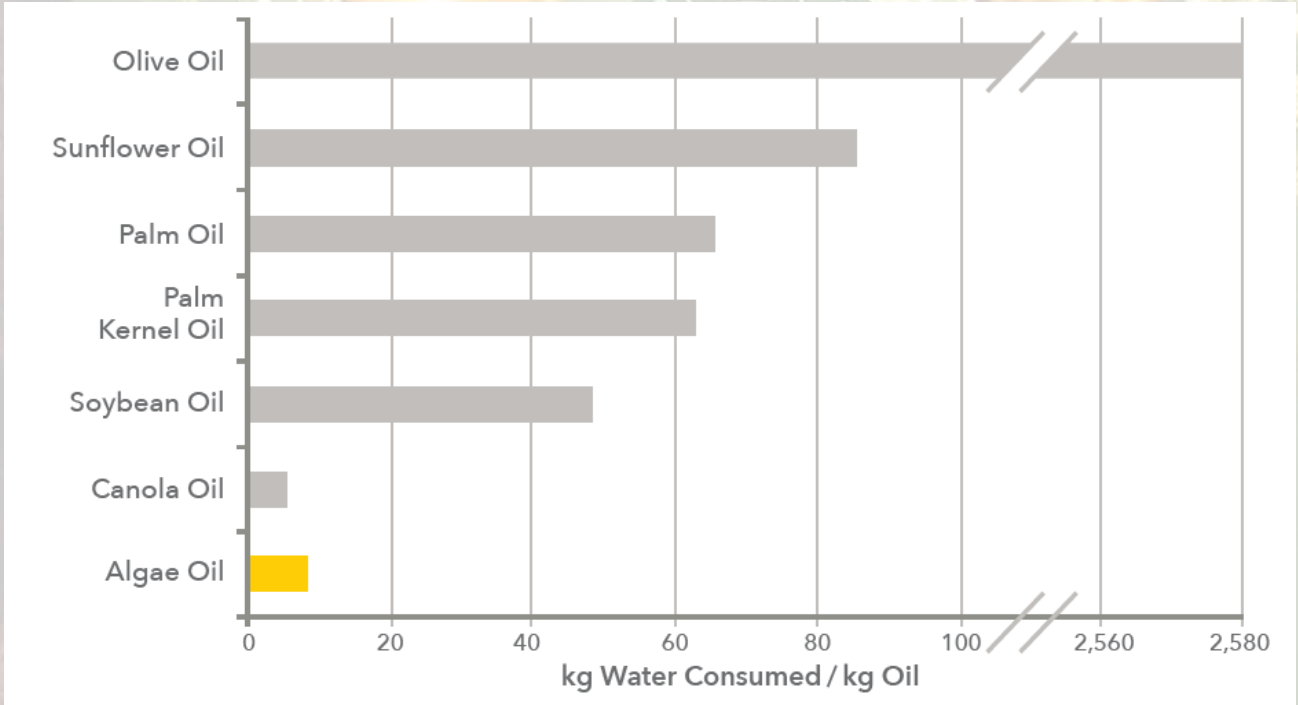
AlgaPūr™ HSHO algae oil

A low carbon and low water footprint algae oil produced in Brazil





Source: Thinkstep (2016) Cradle-to-Gate Study of Competing Bio-Based Oils. Third Party Reviewed to ISO 1404/44 Standards. Includes land use change.

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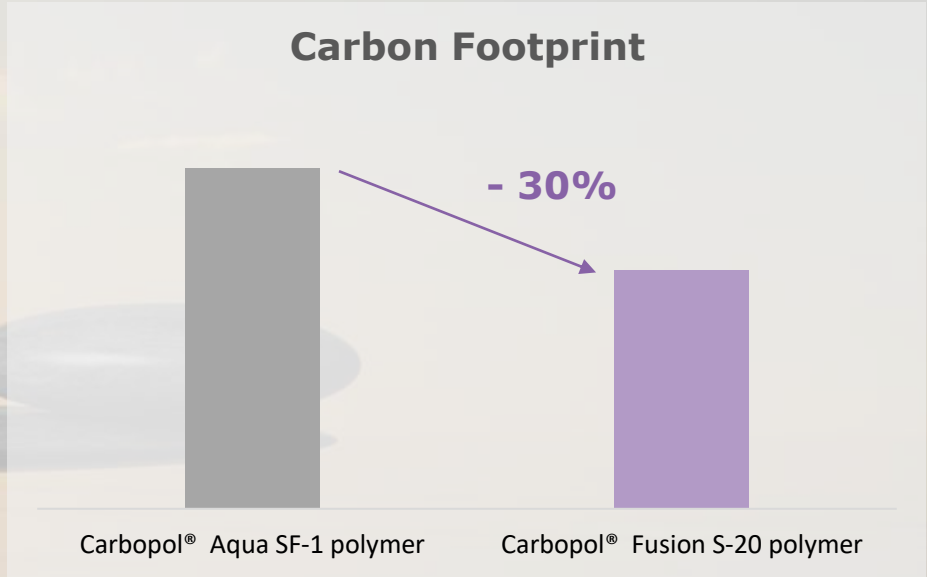
Carbopol® Fusion S-20 polymer

Performance of acrylates copolymer with high sustainability profile

- Inherently biodegradable (OECD 301B) with friendly ingredient name
- Low C-footprint
- Addresses the 12 Principles of Green Chemistry
- Contains starch, a renewable resource with good traceability



The calculations have been conducted internally using various assumptions. Customers need to assess impact on their finished formulations based on the use rate of each ingredient.

Phenobio™ subcritical water technology

Sustainability benefits versus standard extraction process

- **7X** shorter extraction time
- **25%** less feedstock
- No chemical solvent used
- **60%** water savings
- **25%** energy savings
- Compostable waste

Compared to standard 2022 process for Green Tea extraction

Thank you for your attention!

Creating Holistic Partnership

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