

160 YEARS
FOR GENERATIONS TO COME

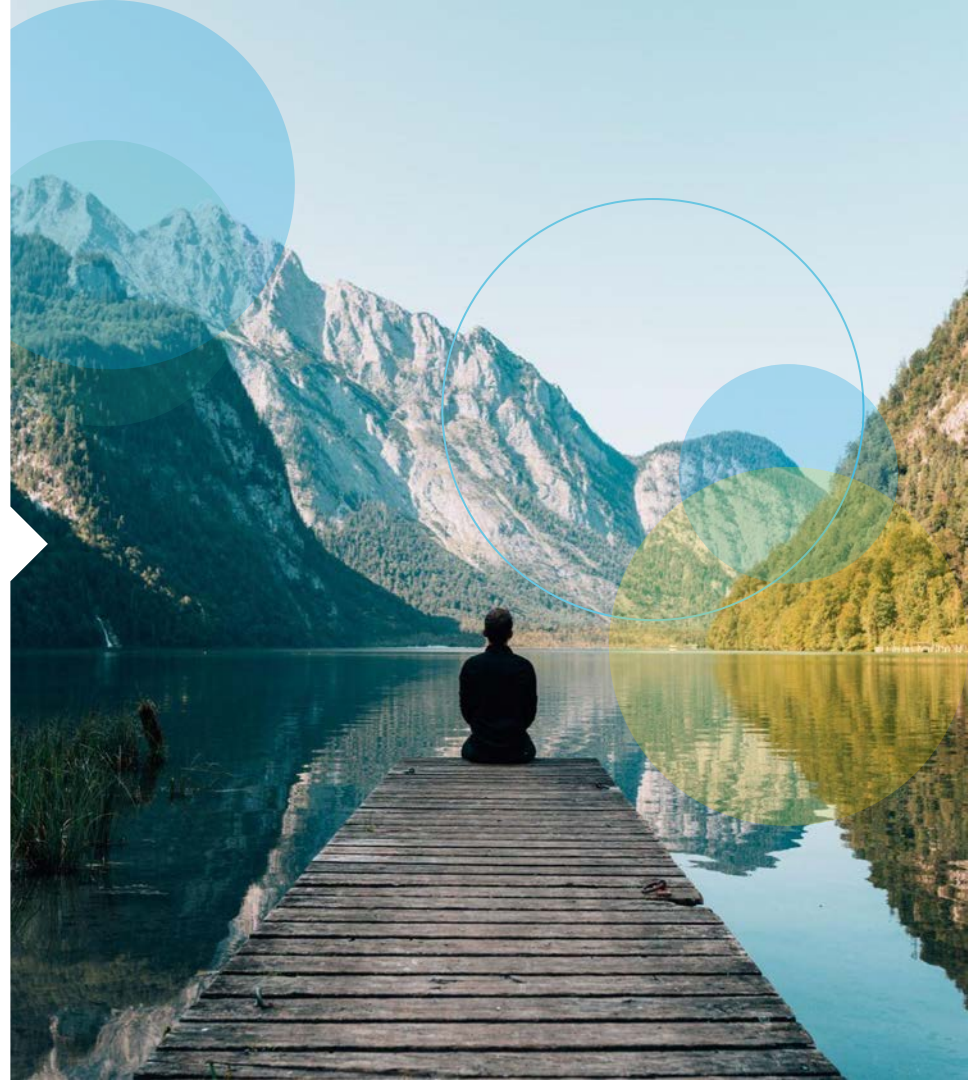


World Materials Forum

Dr. Ilham Kadri

CEO Solvay
and Chair of WBCSD

July 07th, 2023



Limiting **global warming** to $+1.5^{\circ}\text{C}$ is the North Star

$+1.2^{\circ}\text{C}$
2022 vs.
pre-industrial
age

Nations' net zero goals

2050	EU, UK, USA, Canada, Japan, S. Korea
2060	China
2070	India



“ The chemical industry is part of the problem, but I’m pleased and I’m proud to say that we are - even more so - **PART OF THE SOLUTION.**

Ilham Kadri, BRIEC-FEB,
October 2019

Clean Tech

Ocean leakage

Circularity

Resource Efficiency

Wider concerns

Wellbeing

Climate

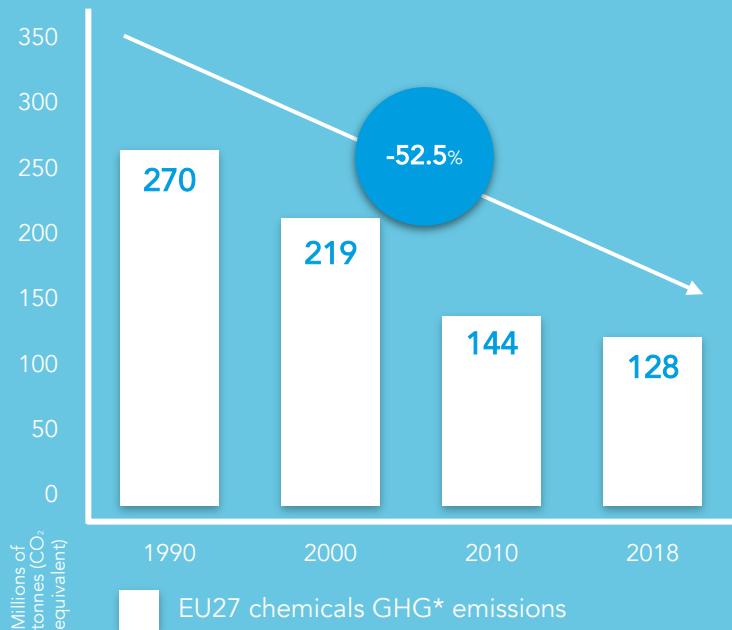
GHG Footprint

Wider Contribution

Resource use

Source: Material Economics, 2022

Chemical Industry achieved 52.5% GHG emissions reduction since 1990 while production increased by more than 47%.



Source: European Environment Agency (EEA)
 * Energy (Fuel and Power CO₂ is included)

Unless specified, chemical industry excludes pharmaceuticals

Global greenhouse gas emissions by sector



Global greenhouse gas emissions were 49.4 billion tonnes CO₂eq. in 2016, published in 2020

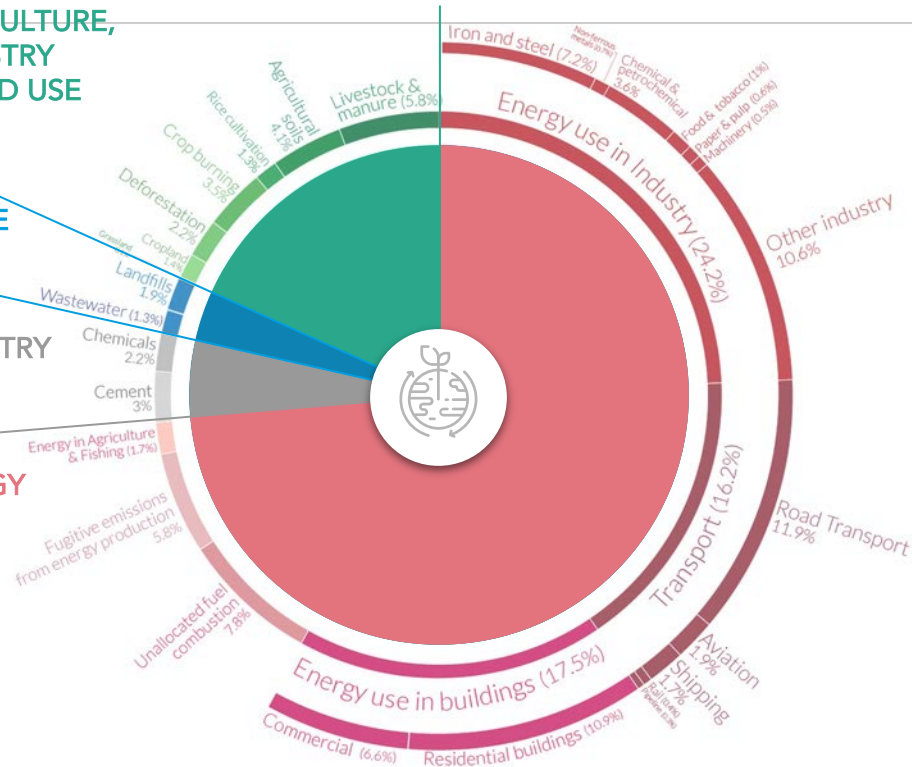


AGRICULTURE, FORESTRY & LAND USE
18.4%

WASTE
3.2%

INDUSTRY
5.2%

ENERGY
73.2%



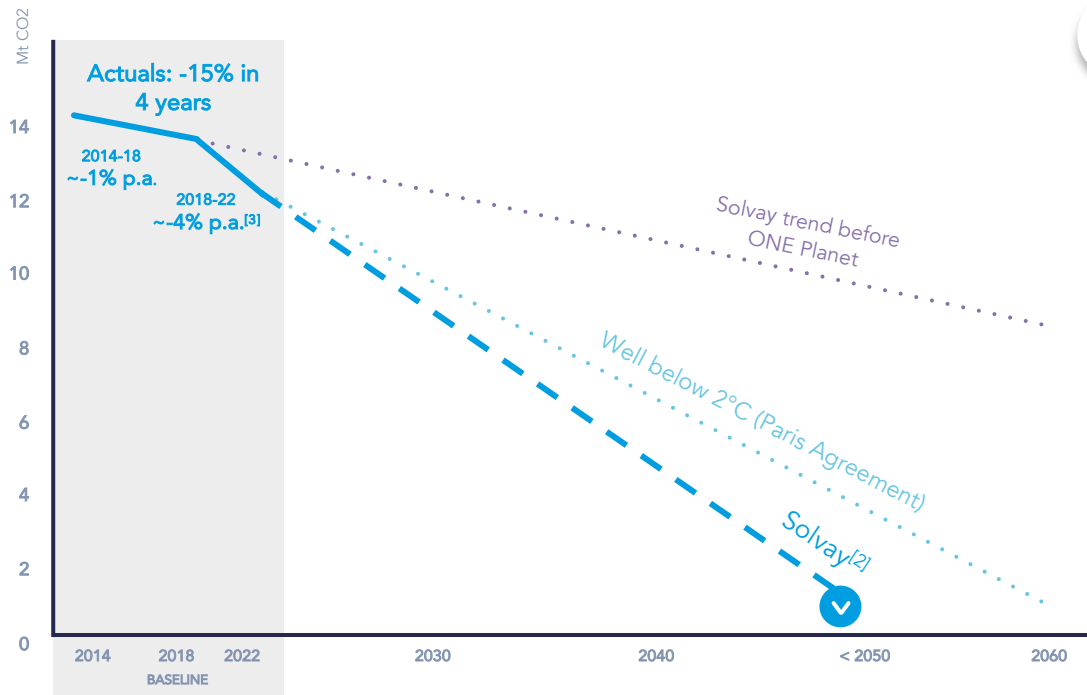
OurWorldInData.org – Research and data to make progress against the world's largest problems.
 Source: Climate Watch, the World Resources Institute (2020).

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Advancing Beyond Scope 1 and Scope 2

The Next Frontier in Our Climate Action Journey

OUR COMMITMENTS



2020

- Align with the Paris Agreement



2021

- Coal phase out before 2030
- Carbon neutrality before 2050



2022

- SBTi validation Scope 3 targets -24% by 2030



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

[1] Scope 1+2 GHG emissions

[2] Visualization of the theoretical path to achieve Solvay's GHG reduction targets vs public benchmarks. Annual fluctuations may differ.

[3] Structural excluding the impact from Covid reduced activities

59 projects to accelerate our energy transition



taking 2 million cars off
the road (-3.5 Mt of CO₂ per year)

Renewable Energy
Solar, biomass,
wind & biogas

Process Efficiency
Electrification,
waste heat recovery,
equipment optimization,

Other
Energy mix,
industrial emissions



Rheinberg
Germany



Dombasle
France



Devnya
Bulgaria

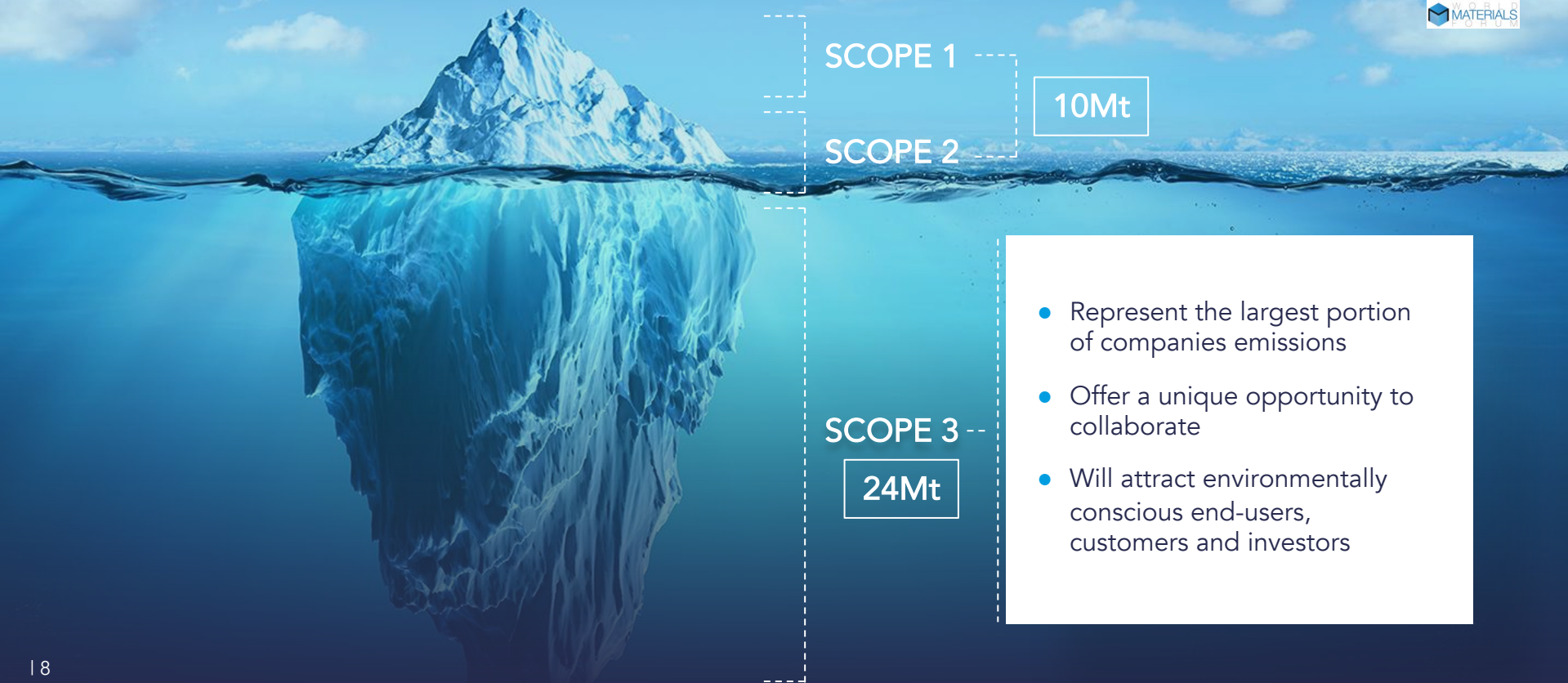


Green River
United States

Group Total GHG emission



Scope 3 | An imperative towards net zero emissions



Navigating complexity

| Overcoming transparency challenges in the chemical industry



CO₂

CH₄

N₂O

HFC

PFC

SF₆

NF₃

7
Mt

SCOPE 3

Raw Materials and Fuels

- Extraction
- Processing
- Transport & distribution

Wastes



Upstream Activities

10
Mt

SCOPE 2

Operations

- Purchased electricity
- Purchased heating and cooling
- Purchased steam



Solvay own operations

SCOPE 1

Company facilities

Company vehicles



14
Mt

SCOPE 3

Transport & distribution

Use of products sold

End-of-life treatment



Downstream Activities

BEYOND SCOPE 3 for Chemical Companies

Indirect emissions
during the use
of products

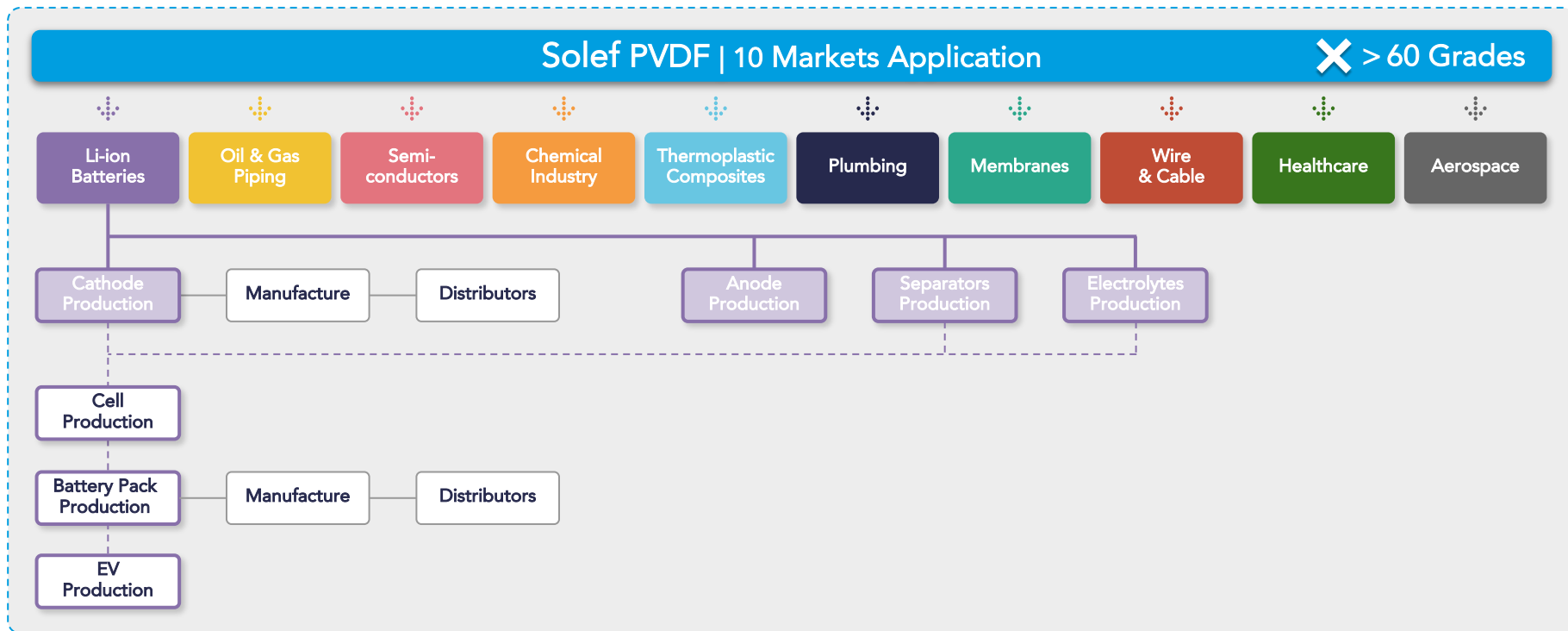
+ OTHERS: 3 Mt

- Capital goods
- Business travel
- Employee commuting
- Investments

Σ = 24 Mt

Navigating complexity

| The complexity of the chemical industry value chain prevents transparency on indirect emission associated to the use of product sold



Navigating complexity

| Alliances for better alignment and transparency



Upstream Activities



- ✓ 47 companies
- ✓ 1 guidance for chemicals
- ✓ 1 data exchange platform

—
Solvay product carbon footprints digitization in a centralized data system

Product
Carbon
Footprint
(PCF)
Guidelines

Downstream Activities



Standardize
exchange of carbon
emissions data



Solvay scope 3 goal: -24% by 2030



89% coverage
of total **scope 3**
with Top 5
categories



RAW MATERIALS



UPSTREAM ENERGY



PROCESSING



USE

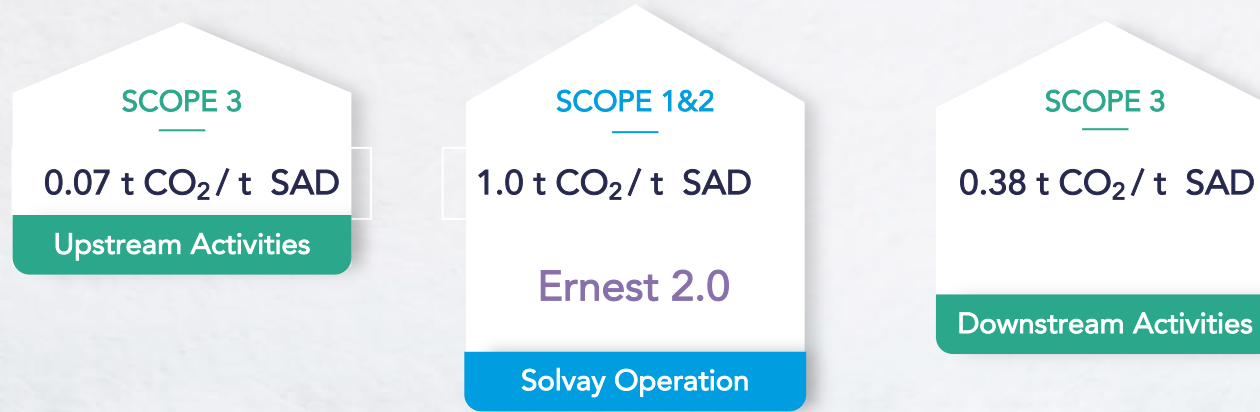


END OF LIFE

of sold product

Revolutionizing the Soda Ash process

Innovation to target scope 1, 2 and 3 emissions



Ernest 2.0



50% less CO₂

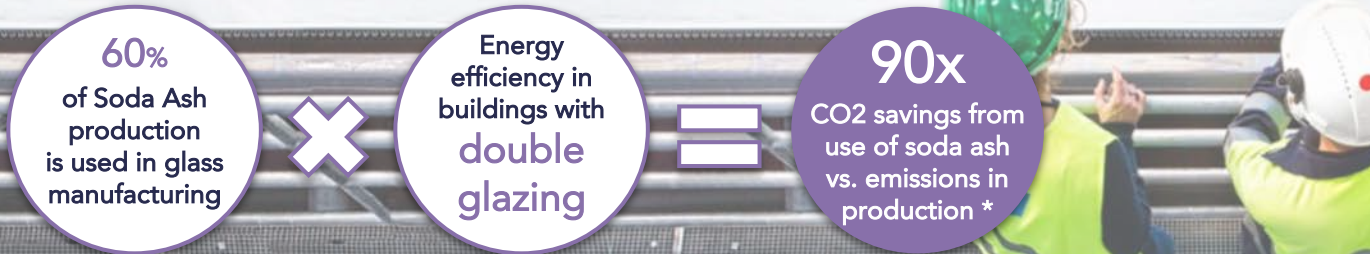


Less water, brine and limestone consumption



Zero limestone discharge by 2050

Beyond Solvay scope 3



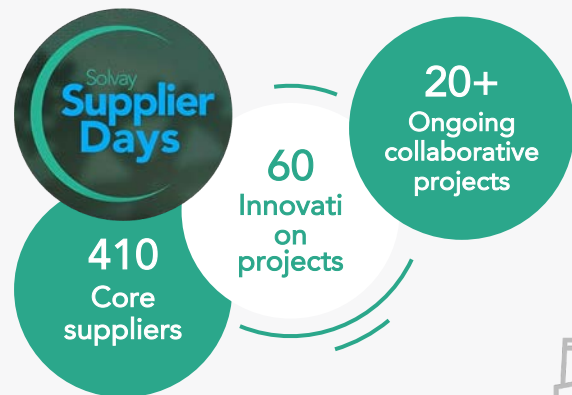
Collaborative Efforts Upstream and Downstream

| Collaboration, Circular Value Chains, and Low-Carbon Products



Upstream

Engaging with suppliers to switch to renewable energy, bio-based and recycled feedstock



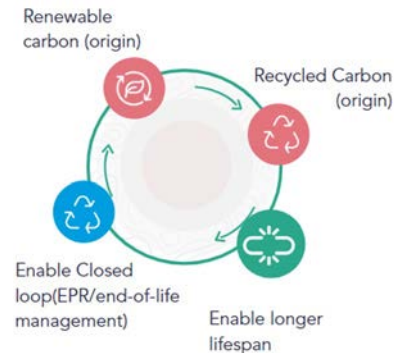
Downstream

We bring to market low-carbon-inside products

- ISCC PLUS Bio-circular Fentamine® DMPA UP
- Mass-balance-certified circular sulfone polymers Radel and Udel
- Solvay platform Renewable materials and biotechnology

BIOMATTECH

Deploying an ambitious circular economy roadmap

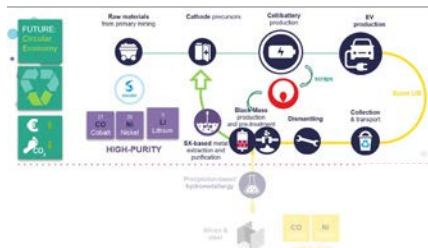


Circular Economy

| We are committed to work on customers scope 3 emissions



Bio-sourced vanilla flavor obtained by bioconversion of the ferulic acid present as byproduct in non-GMO rice bran. Allows manufacturers to provide the natural flavor with transparent and reassuring labeling.



Development of a new innovative technology to recovery up to 95% of high purity metals from used EV batteries to be reused in new batteries securing a local supply source for critical raw materials.



Co-developed TECHSYN based on Solvay's Bio-based Highly Dispersible Silica is designed to extend the overall tyre lifespan while delivering better wear efficiency, lower rolling resistance and dropping CO2 emissions.

9% of Sales from Circular Products⁽¹⁾ in 2022

€1.2 Bln

With potential to more than double the circular revenue share.

⁽¹⁾ Products based on recycled or renewable materials, produced with renewable energy, have increased longevity in the use phase or enable recycling at the end of life.

Regenerate



Enabling circularity



Longevity





Rice bran for
natural vanillin



Bio-based guar
seeds for hair
care solutions

"The greatest threat to our planet is the belief that someone else will save it."

Robert Swan

Ate Conseil de Physique - Bruxelles 24 sept. - 26 sept. 19

XVle Raad voor Fysica, 24 sept. - 28 sept. 1973

INSTITUT INTERNATIONAL DE PHYSIQUE
 SIXIÈME CONSEIL DE PHYSIQUE — BRUXELLES, 20-26 SEPTEMBRE 1958DE CHIMIE FONDÉS PAR E. SOLVAY
No. 2-7 octobre 1967INSTITUTS INTERNATIONAUX
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J. LANGMUIR M. PLANCK Mrs. CURIE H. LORENTZ A. EINSTEIN F. LANGEVIN O.L. GUYE C.T.R. WILSON G.W. RICHARDSON
Absent: Sir W.L. BAGO, IL. DOSZDANOFF et E. VAN ALBEN

UNESCO World Heritage

100

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