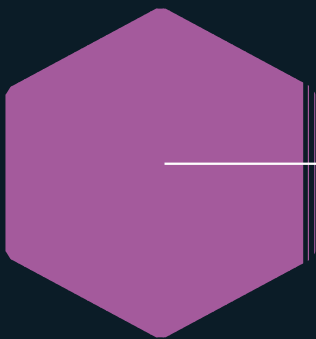


# Leading material DECARBONIZATION

The chemical industry has a “trifecta” opportunity to lower scope 1 and 2 emissions, as well as downstream end-market scope 3 emissions. A properly designed and optimally deployed core business strategy, with sustainability as a critical component, may represent one of the biggest-ever opportunities for chemical and materials companies. This strategy can help the industry decide where to play and how to win in lowering emissions and creating new sources of value.

Read the full report at [www.deloitte.com/us/Loweringchemicalemissions](http://www.deloitte.com/us/Loweringchemicalemissions)

## WHY IS THIS IMPORTANT?



**96%**  
OF ALL  
MANUFACTURED GOODS

are directly touched  
by chemistry<sup>a</sup>

(e.g., chemicals make up <96%  
of the weight of a new vehicle  
but 50% of its volume)

**13 OUT OF 17**  
OF UNITED NATIONS'  
SUSTAINABLE  
DEVELOPMENT GOALS<sup>b</sup>

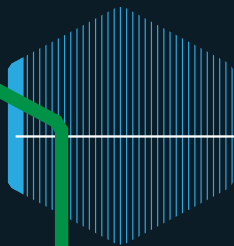
are attained by contributing  
factors from chemical  
products and R&D



## THE CHALLENGE

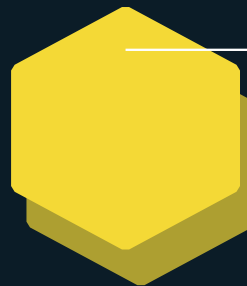
**72%**  
OF CONSUMERS  
SURVEYED

think climate change  
is an emergency<sup>e</sup>



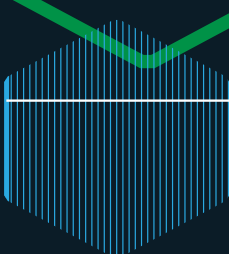
**10%**  
OF ALL FOSSIL  
FUELS PRODUCED<sup>c</sup>

are consumed by  
the chemical industry



**2X**

As the need for materials  
continues to grow,  
emissions are expected  
to double by 2050  
unless abated<sup>h</sup>



**4%**  
OF TOTAL US EMISSIONS

comes from chemical industry scope  
1 and 2 emissions (over 200,000,000  
metric tons of carbon dioxide  
equivalent or MtCO<sub>2</sub>e)<sup>d</sup>

From 2005 to 2020,  
US chemical industry  
emissions grew by<sup>e</sup>

**8.9%**

despite an

**11%**

reduction in  
emissions  
intensity<sup>f</sup>



# THE OPPORTUNITY

**15%**  
OF EMERGING  
ABATEMENT SOLUTIONS

have the potential to address

**90%**  
OF THE INDUSTRY'S  
SCOPE 1 AND 2 EMISSIONS

**22%**  
OF US CHEMICAL COMPANIES

have targets to achieve net-zero emissions by 2050 in line with 20% of Fortune 500 companies<sup>1</sup>

**4** SOLUTIONS

will be ready in the next decade

11 SOLUTIONS

need further development to drive long-term impact

The industry's innovation know-how will be critical in accelerating technology maturity  
Lithium-ion batteries are an example of material science innovation driving price-to-performance improvements of over **97%**

Companies that are sustainability leaders are

**4 TIMES**

more likely to be recognized as innovation leaders<sup>1</sup>

**\$3 TRILLION**  
POTENTIAL US ECONOMIC GROWTH

from rapid decarbonization to 2070<sup>k</sup>



Sources: <sup>a</sup> American Chemistry Council (ACC), *Guide to the Business of Chemistry*, 2021; <sup>b</sup> Deloitte analysis based on United National Sustainable Development Goals; <sup>c</sup> Jeffrey Rissman et al., "Technologies and policies to decarbonize global industry: Review and assessment of mitigation drivers through 2070," *Applied Energy* 266 (2020); <sup>d</sup> Deloitte analysis based on data from the Environmental Protection Agency; <sup>e</sup> Deloitte, "Global State of the Consumer Tracker", accessed May 4, 2022; <sup>f</sup> ACC, *Guide to the Business of Chemistry*; <sup>g</sup> Deloitte, "Global State of the Consumer Tracker"; <sup>h</sup> Deloitte analysis based on data from the Environmental Protection Agency; <sup>i</sup> Deloitte analysis based on company announcements data from Science Based Targets, accessed May 24, 2022; <sup>j</sup> Deloitte, *The turning point*, May 2022; <sup>k</sup> Rhonda Evans and Tony Seisfeld, *Measuring the business value of corporate social impact: Beyond social value to enterprise performance*, Deloitte Insights, July 31, 2020.