

## GLOBAL CHEMICAL INDUSTRY INITIATIVES TO HELP THE WORLD OVERCOME ITS MOST PRESSING SUSTAINABILITY CHALLENGES

### 1 WE ARE DIRECTLY CONTRIBUTING TO MOST OF THE UNITED NATIONS (UN) SUSTAINABLE DEVELOPMENT GOALS (SDGS)

- Chemistry enables adequate food supplies, clean water, medical advancements, comfortable living standards, and a healthy environment for a growing population.
- Chemistry creates irreplaceable components for advanced building materials and batteries, wind turbine blades, solar panels, electric and high efficiency vehicles, and lightweight options that improve energy efficiency and reduce GHG emissions. Many chemical products also provide solutions to become more resilient to a changing climate.



### 2 WE ARE ASSESSING THE POTENTIAL OF CHEMICAL SOLUTIONS TO MITIGATE CLIMATE CHANGE

ICCA has commissioned a series of reports and case studies to uncover the most promising pathways to lower GHG emissions using chemistry. The chemical industry presents significant potential towards a low-carbon society in creating innovations with partners throughout the value chains of other sectors.



More on page 2



### 3 WE ARE REDUCING OUR OWN GHG EMISSIONS AS PART OF RESPONSIBLE CARE®

The chemical industry aims to:

- Reduce its own emissions by improving its catalytic processes, switching to renewable energy and alternative raw materials; and
- Encourage the use of chemical products that create a net emission reduction along the value chain.

Responsible Care has been implemented by 62 chemical associations in nearly 70 economies around the world.



### 4 WE ARE BUILDING CAPACITY TO IMPROVE COMPANY PERFORMANCE

- ICCA is helping to strengthen the skills, processes, and resources of companies as they strive to achieve their sustainability goals.
- Our effort includes outreach and assistance to chemical industry representatives in developing countries in the field of Carbon Life Cycle Assessments (cLCA) and methodologies for calculating GHG emissions.



More on page 2



### 5 WE ARE ENGAGING THE INTERNATIONAL COMMUNITY

The chemical industry believes that the answer toward tackling climate change is to have:

- Ongoing global and regional dialogues to share experiences and best practices;
- Constructive climate diplomacy; and collaboration between industry, governments, stakeholders and communities.

ICCA has participated in UN activities such as the Conference of Parties (COP) climate meetings and the UN Environment Assembly (UNEA) sessions on the UN SDGs.



### 6 WE ARE ADVOCATING FOR EFFECTIVE CLIMATE POLICIES

As per our [Policy Statement](#), ICCA supports policies which:

- Achieve net global GHG reductions and avoid shifting emissions between regions or countries – known as carbon leakage
- Include transparent monitoring, reporting and verification systems (MRV); and
- Establish transparent, predictable, technology-neutral economic signals to facilitate lower GHG emissions. For instance, incentives to support new technologies toward commercialization.



## RESEARCH THAT GOES INTO IDENTIFYING THE BEST SOLUTIONS FOR CLIMATE CHANGE

### ENABLING THE FUTURE: CHEMISTRY INNOVATIONS FOR A LOW-CARBON SOCIETY (2019)

Commissioned to KPMG and fors

The study reveals that 450 generic technologies are enablers of GHG savings, of which 137 are highly feasible. The 17 innovative solutions featured in the report could develop emissions reductions of about 5-10 Gigaton by 2050 – which is about one quarter of the total world emissions today. These solutions will require robust transformation of entire sectors, such as power generation and storage, industry and production, mobility and transportation, nutrition and agriculture, and building and housing.

### AVOIDING GREENHOUSE GAS EMISSIONS: THE ESSENTIAL ROLE OF CHEMICALS. QUANTIFYING THE GLOBAL POTENTIAL (2017)

Commissioned to Ecofys

The report illustrates how efficient processes and chemical industry solutions can contribute to GHG savings. ICCA estimates that by 2030, light materials for transportation, efficient buildings and lighting, electric cars, wind and solar power and improved tires, at global scale, have the potential to avoid 2.5 Gigatons of greenhouse gas (GHG) emissions globally every year. That's twice the amount currently emitted by all the cars in the world.

### AVOIDING GREENHOUSE GAS EMISSIONS: THE ESSENTIAL ROLE OF CHEMICALS - 17 CASE STUDIES (2017)

Commissioned to Quantis

This report assembles 17 examples of Life Cycle Assessment (LCA) case studies. The purpose is twofold: to motivate all stakeholders to discuss climate change using robust studies, taking the full life cycles into account, and to encourage all chemical companies to generate high quality assessments. The report is also available in [summary format](#).

### AVOIDING GREENHOUSE GAS EMISSIONS: THE ESSENTIAL ROLE OF CHEMICALS - GUIDELINES (UPDATED IN 2017)

Prepared jointly with the World Business Council for Sustainable Development (WBCSD)

ICCA has created guidelines on how to measure and communicate avoided GHG emissions enabled by LCA methodologies applied to entire value chains.

### ICCA CATALYTIC TECHNOLOGY ROADMAP: ENERGY AND GHG REDUCTIONS IN THE CHEMICAL INDUSTRY VIA CATALYTIC PROCESSES (2013)

Joint publication with the International Energy Agency and DECHEMA

The study outlines the potential of catalyst and process improvements in increasing energy efficiency across the chemical sector – from 20% to 40% by 2050. The study features 18 products accounting for 75% of GHG emissions by the entire industry.

### ICCA BUILDING TECHNOLOGY ROADMAP: THE CHEMICAL INDUSTRY'S CONTRIBUTIONS TO ENERGY & GHG SAVINGS IN RESIDENTIAL AND COMMERCIAL CONSTRUCTION (2012)

Joint publication with Franklin Associates

This roadmap describes how the increased use of chemically derived building blocks could help the residential and commercial buildings sectors. The study quantifies the potential energy efficiency and GHG emissions savings that are achievable by 2050. It also looks at the challenges and opportunities for increasing the use of chemically-derived building products.

## SHARING OUR BEST PRACTICE

### SOLUTIONS FOR A SUSTAINABLE FUTURE

Chemistry, vital to our way of life, helps society boost energy efficiency and cut GHG emissions.

### MEASURING AVOIDED EMISSIONS

The chemical industry measures the potential of new technologies to avoid emissions. We use and promote robust measurement and LCAs to do so.

### TEAMING UP WITH OTHER SECTORS

Energy is used to heat, cool and power buildings. Products that depend on chemistry can enable significant reductions in energy use and GHG emissions in the buildings sector.