Abiquim Seminar on Technology and Innovation

Realização:

ABIQUIM
QUÍMICA: PROMOVENDO AVANÇOS E PROTEGENDO VIDAS

Atuação Responsável 30 ANOS
do compromisso com a sustentabilidade no Brasil

CHEMICAL INDUSTRY AS A SUSTAINABLE DEVELOPMENT SOLUTIONS PROVIDER THROUGH INNOVATION

Abiquim 6th Seminar on Technology and Innovation was held in October 2021. The event core issue – 'Innovation and chemistry as sustainable development solutions' – has proven to be an opportunity to highlight the Brazilian chemical industry great potential to the transition to a low carbon economy.

"We have potential to be global leaders in green chemistry, apart from excellent conditions to double the size of the chemical industry within the next 10 years", states Ciro Marino, Abiquim CEO. However, according to him, there are huge challenges ahead: "the necessary expansion of research and investments are bound to the adoption of a strategic vision that fosters the driving role of the state as a solutions developer for the industry, based on a robust ecosystem of research and innovation. Brazil should move fast, otherwise it may lose competitive advantages in segments other countries have been massively investing", adds Ciro Marino.

The seminar was sponsored by: Additiva Químicos, Arkema, Braskem, Elekeiroz, Grupo Sabará, Ceslog e Oxiteno. You will find below a brief overview of what happened in this 4-day event:

Ciro Marino, CEO of Abiquim, during the opening Abiquim Seminar on Technology and Innovation 2021.

Day 1

New Technologies: CCUS is already a reality in Brazil

The presentations that took place on the morning of October 7th addressed CCUS technologies (carbon capture, use and storage), in addition to the development of hydrogen production through innovative means.

"The cases presented on the seminar first day show that the chemical industry is an innovative technology solutions provider to the sustainability for the whole economy. Besides, governments have the role of creating conditions in order to leverage investments", highlights Marino.

Two facts stood out from the presentations delivered by Andreas Förster, Dechema CEO (German Society for Chemical Engineering and Biotechnology), Mário Rebouças, Braskem specialist in innovation and technology and Silvio Vaz Júnior, researcher at Embrapa. The first fact is that carbon capture-related chemical innovations are are been developed quickly in Brazil and will account for a significant stake of the desired emissions reduction for the next decades. The second one is that there is a great deal of technology, regulatory and economic challenges to be overcome and the cooperation among the industry, universities and government is essential in this new track.

For the panel moderator, Rafael Pellicciotta, Braskem Strategy, Innovation and Business Development manager and coordinator of Abiquim Technology Committee, the development of new technologies funded by both the private and public sectors will be crucial

Day 2

Corporate strategies to low carbon economy and its interface with competitiveness.

The second day of Abiquim Seminar on Technology and Innovation covered not only examples of low carbon economy-related corporate strategies but also a heads-up: Brazil has a great opportunity to promote the economy recovery, based on sustainable technological solutions. However, the country needs to prioritize long term investments in the various sectors and in more efficient technology, in the same way that the USA and Germany have done in response to the crisis stemming from the pandemic. Successful cases were presented by Solvay and Basf representatives, under mediation of Alexandre Kossoy, the World Bank senior specialist in finances.

Frédéric Nyssen, BASF Strategy Senior Specialist , showed the company's strategy to cut off carbon emissions by 2050. For Basf, carbon management can be seen as a business opportunity, said the executive. By the end of the year, around 45k products traded by the company will have their carbon footprints recorded from production processes to downstream emissions so that consumers can choose among greener products.

At Rhodia Solvay, low carbon economy is already a reality as well. Guilherme Faria Silva, Operations director, and Daniel Gouveia, HSE engineer, presented the case of Paulínia industrial plant where 95% of GEE emissions have been cut down in the last years in accordance with new technologies, renewable energy, and energy efficiency pillars. Most of improvements resulted from the decrease in nitrous oxide emissions, a greenhouse effect hazardous gas.

According to Abiquim director of Technical Affairs, Andrea Carla Barreto Cunha, "Low carbon economy has come to stay, and the Brazilian industry will only survive as long as it follows such reality."

Day 3

Circular Economy and Sustainable Development Goals.

Circular Economy and Sustainable Development Goals were addressed on the third day of Abiquim Seminar on Technology and Innovation.

The panel on circular economy, which highlighted the importance of technology innovations in chemistry, was opened by Basf VP of Circularity and Sustainability of petrochemical raw materials, Cristof Gahn. In his point of view, circular economy is closely connected to the use of clean energy as well as to good waste management. "We still recycle a small percentage of plastics, and we have regulatory and technological issues regarding this scenario', he stated. He also highlighted the importance of developing new technologies, such as chemical recycling. "The fact is that there is no alternative to chemical recycling."

Liza Bevilaqua, Nestlé senior manager of scientific and regulatory affairs, restated Gahn's idea, by pointing out that the ultimate challenge is to raise awareness about the importance of recycling in the whole production chain.

Luiz Falcon, Braskem leader of recycling technology innovation platform, pointed out the importance of getting the whole production chain involved to promote a successful recycling process in the country. "It's necessary to find a business model that makes sense to all players including collectors and transformers."

Paulo Coutinho, Senai manager of Innovation in Biosynthetics and Fibers, pinpointed the importance for the country to have circularity indicators. "It is fundamental to have an indicators methodology that may effectively be used so that any regulation can work out", he stated. For him, when it comes to research in circular economy, Brazil has a good performence. "We have institutes that carry out cutting-edge studies on developments for an array of sectors. We need to see the government making more efforts towards, what I call, risk sharing, which will help companies invest more, bring more resources, and have innovation breakthroughs, including recycling", he stated.

The panel on ODSs was opened by Ulisses Sabará, Sabará Group CEO, who talked about the value of shareholders' involvement in seeking better socioenvironmental practices at corporations.

As a participant of the panel, Anna de Souza Aranha, Quintessa Aceleradora CEO, believes that it's a favorable moment to discuss sustainability. "We've had a biased view that sustainability means cost, but today we see it as a hub to spawn businesses for companies", she said. "At this moment in which investors, consumers and media are discussing ESG and digging up such agenda, we need to bring more companies to the debate."

In the light of the second Sustainable Development Goal – hunger and sustainable agriculture – Juliana Pantalena, Oxiteno Crop Solutions global marketing manager, explained how the company focuses on improving productivity in crops with chemistry. "The principle of 'less is more' is something we seek to follow by having high performance products and decreasing social and environmental impact. With more efficient applications we'll have more food while using less transport and packaging and, therefore, cutting down on emissions", she pointed.

Nei Arruda, Evonik leader of Sustainability in animal nutrition, spoke particularly about a solution the company has found to boost production of chicken. "We've developed an ammino acid to replace soy and fishmeal in chicken nutrition that reduces the animal's excretory activity. Such initiative allowed us to reduce emissions in 900 tons of reactive nitrogen, which is equivalent to all Malaysia's emissions, for example.

Claire Sarantopoulos, Innovation director of the Institute of Food Technology (ITAL), strengthened the chemical industry contributions to SDG 2. She particularly highlighted the importance of packaging to food transport and conservation. "We have 800 million people in the world plagued by hunger. Packaging technology assures microbiological safety and nutritional quality conservation, as well as a decrease in loss, and therefore, a mitigation of hunger."

Day 4

The contributions of the chemical industry to sustainable development of other sectors and the role of public policies on innovation and sustainability.

The fourth and last day of the 6th Abiquim Seminar on Technology and Innovation was split into two panels. In the first one, Jorge Soto, Advocacy task Force coordinator of the Leadership Group for Energy and Climate at the International Council of Chemistry Associations (ICCA) and Braskem Director of Sustainable Development, talked about 'Chemistry as a solution to mitigate climate changes from different sectors', followed by representatives of the industry who presented the potential of innovations in chemistry that may cut down the emissions from the Brazilian abgriculture.

Soto presented the study 'Enabling the Future', carried out by ICCA that has assessed around a thousand solutions already adopted by or in progress in the chemical industry worldwide regarding climate changes. The study thoroughly shows 17 solution groups that together have the power to cut down from 5 to 10 GT of CO_2 by 2050.

In the second panel, moderated by Ciro Marino, representatives from the government, legislative and industry - the latter represented by CNI - debated innovation-driven public policies for Brazil by bringing forward the industry demands and solutions proposals.

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INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS

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Advancing global chemicals and waste management in chemical intensive economic sectors and value chains

A multi-stakeholder workshop in support of the intersessional process for the Strategic Approach and sound management of chemicals and waste beyond 2020 ("Beyond 2020")

Organized by the IOMC and hosted by OECD in Paris, 18-19 January 2023

Workshop highlights and key outcomes (17/2/2023)

Key messages

- To achieve the sound management of chemicals and waste globally, enhanced action and engagement of stakeholders in economic industry sectors and value chains in the intersessional process on the Strategic Approach and the sound management of chemicals and waste beyond 2020 is essential.
- Sector and value chain strategies promoted through draft target D6 have the potential to stimulate action within and across sectors, in companies, groups of companies, and through associations.
- A global programme under "Beyond 2020" focusing on economic sectors can enhance stakeholder engagement, knowledge-sharing, identify action, and monitor progress against targets and indicators.
- Guiding principles can provide a reference to inform sound sector and value chain strategies. Guidance should cover enabling measures government, industry, and civil society may take in furthering action.
- Chemical footprint assessments and performance reviews help to measure industry performance, foster performance improvement, and guide investors. Existing initiatives could be scaled-up and opportunities for alignment be explored.
- "Beyond 2020" can advance international standards and guidelines that promote a high level of ambition. By taking stock of and promote existing standards, review standards for chemicals and waste considerations, and encourage development of new standards.
- Mobilizing adequate, predictable and innovative financing is key to support chemicals and waste management in economic sectors and value chains and foster a transformation to green and sustainable chemistry.
- Multi-stakeholder engagement and partnerships at the global, regional, national and local level can be an essential driver to further implementation and transformation.
- Stakeholders are encouraged to propose specific text on economic sectors and value chains action for consideration in the further development of the Intersessional Process Co-chairs' Single Consolidated Document to be discussed at IP4.2 from 27 February - 3 March 2023 in Nairobi.

The IOMC encourages stakeholders to engage in international discussions on advancing chemicals and waste management in economic sectors and value chains**. If would you like to be kept informed, please register your interest here.** Stakeholders already on the mailing list do not need to register.

1 Introduction and overview

More than 180 stakeholders from around the world convened face-to-face in Paris and online from 18-19 January 2023 in a global workshop organized by the IOMC to discuss opportunities and challenges to accelerate and scale-up sound management of chemical and waste in chemical intensive economic industry sectors and values chains. Stakeholders originated from government, civil society, international organizations, academia and industry, representing economic sectors and actors including the following (in alphabetical order): agriculture, buildings and construction, chemical distributors, chemical industry, electronics, finance, health care, tanneries, textiles, retailers and waste management. The workshop brought together many stakeholders who were new to the SAICM process, including those working within and alongside industry. Further efforts are needed by all stakeholder to enlarge the community.

Workshop outcomes will feed into the next meeting of the intersessional process considering the Strategic Approach and the sound management of chemicals and waste beyond 2020 (IP 4.2 , 27 February – 3 March 2023, Nairobi, Kenya) and the Fifth International Conference on Chemicals Management (25 – 29 September 2023 in Bonn, Germany). The Strategic Approach to International Chemicals Management (SAICM) is a global policy framework adopted in 2006 to promote chemical safety around the world role. It provides a unique forum for governments, civil society and industry stakeholders to participate and contribute as equal stakeholders. ICCM5 will be a major global Conference which is expected to adopt a future global chemicals and waste management framework "Beyond 2020".

Over two days, participants shared knowledge on a wide range of industry-related initiatives, discussed guiding principles to support industry sector strategies and action, and explored elements of a possible global programme to enhance economic sector engagement and action under the future global chemicals and waste management framework: "Beyond 2020". Participants also recognized the importance of including specific targets on industry sector engagement, strategies and action in the global results framework currently being negotiated, as featured in the annex of the IP Co-Chairs single consolidated document, issued in January 2023.

Background

The second edition of the Global Chemicals Outlook (GCO-II, UNEP 2019) stated that the continued release of hazardous chemicals from industrial production processes, product use, and unsound disposal approaches is causing significant concern for human health and environment. As a contribution to address these challenges, a draft target was proposed at the fourth meeting of the intersessional process in Bucharest in 2022 (IP 4.1) which encourages chemical intensive economic

sectors to develop "sustainable chemical and waste management strategies…which identify priority chemicals of concern [as well as] standards and measures to reduce chemical input and footprint along the value chains". Several other draft targets proposed at IP4.1 also address industry and finance stakeholders directly (see Annex).

Workshop objectives

To help advance international discussion on the above developments, the IOMC - a joint programme of FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, the World Bank and the OECD - invited interested stakeholders to a global multi-stakeholder workshop hosted by the OECD, in Paris, 18 and 19 January 2023. UNITAR supported the organization and OECD hosted the workshop. Specific objectives of the workshop included to:

- take stock of and discuss draft targets addressing industry in the negotiations on the Strategic Approach and sound management of chemicals and waste beyond 2020 ("Beyond 2020")
- share knowledge on good practices and enabling action by industry, government and civil society to advance chemicals and waste management throughout the life cycle and value chains
- develop guiding principles to inform sustainable chemicals and waste strategies in chemical intensive economic sectors and value chains
- explore opportunities to operationalize the draft target on development of "sustainable chemical and waste management strategies" in chemical intensive economic sectors and value chains
- identify action and mobilize commitment of stakeholders in economic sectors and value chains in advance of ICCM5

Scene-setting reflections

Following Jorge Ocaña's (UNITAR) welcome remarks, Anita Breyer (ICCM5 President), Judith Torres and Kay Williams (Intersessional Process Co-chairs), and Gabi Eigenmann (Chair of the IOMC) provided strategic insights on the Strategic Approach and the intersessional process which emphasized the importance and timing of the workshop in the lead up to the upcoming IP 4.2. The statements underlined the opportunity of the workshop to listen and obtain a better understanding of how downstream industry sectors can effectively engage in the Beyond 2020 process. Participants were encouraged to consider relevant "Beyond 2020" targets and elements of a possible programmes on this topic. Specific proposals would need to be developed as a follow-up to the workshop with a view to amend/populate relevant sections in the co-chairs compilation document. The IOMC indicated an interest to consider submitting a CRP document for IP 4.2, taking into account the outcomes of the workshop.

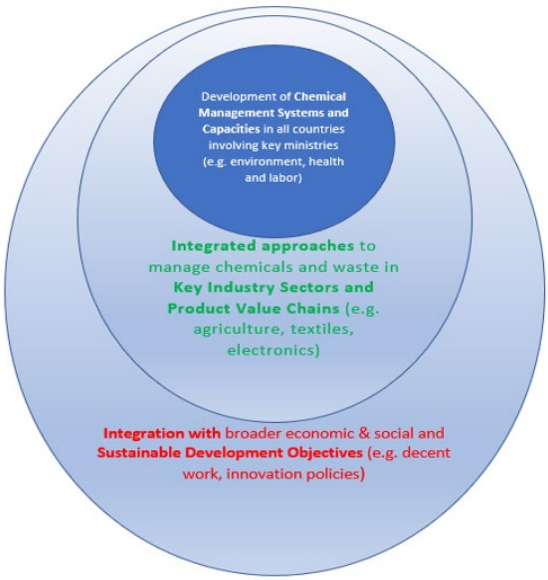
The scene setting statements were complemented by Bob Diedrich, OECD (on behalf of IOMC) who introduced the IOMC's work on integrated chemicals and waste management; Servet Goren, CEFIC/ICCA, who emphasized the importance of putting in place basic chemicals management systems in all countries; David Santillo, Greenpeace, who referred to the importance of public campaigns to foster industry action; and Frank Michel, ZDHC, who highlighted important global work undertaken in the textile sector which could be relevant for other chemical intensive sectors facing challenges.

2 Workshop highlights and key insights

Over two days, participants took part in constructive and forward-looking discussions and developed suggestions to strengthen economic sector engagement and action under Beyond 2020. The following section summarizes key insights and messages that emerged from the workshop. The discussions took into account and further developed in particular the 2nd dimension of integrated chemicals and waste management presented by the IOMC in an INF document at IP4. The three dimensions of integrated chemical and waste management include:

1. Develop basic chemicals management systems and capacities in all countries that engage and address key sectors
2. Integrated approaches to manage chemicals and waste in key industry sectors and value chains
3. Integrate chemicals management with broader sustainable development activities

Three key dimensions of integrated chemicals and waste management



It is essential that economic sector stakeholders scale up action and engage in "Beyond 2020"

- To help achieve the sound management of waste globally, scaled-up action in chemical intensive economic industry sectors, and their engagement in international chemicals and waste management beyond 2020 is essential. Industry is part of the ''solution'', but greater engagement is needed.

- The draft targets under negotiation presented in the co-chairs compilation document which address industry, as well as stakeholders working with industry (e.g. financial actors) provide a valuable reference point. Further work is needed to put in place modalities for implementation and mobilizing stakeholder commitment.

Sector strategies have the potential to share knowledge globally and stimulate action

- Draft target D6 encourages the development of strategies in chemical intensive economic sectors and reducing chemical footprints along value chains. The target has the potential to engage and stimulate action in a wide range of sectors globally.

- Economic sector and value chain strategies encouraged under Beyond 2020 should have a high level of ambition, while recognizing that sectors and their industries start from different baselines. Innovation and ''thinking outside the box'' are key elements.

- Sectors discussed at the workshop include, but are not limited to: textiles, building and construction, health services, electronics, and agriculture. Given proximity to consumers and leverage potential, retailers play a particularly important role.

- Further work is needed to obtain a better understanding of the term "chemical intensive" and to identify economic sectors and key stakeholder in respective values chains to engage in Beyond 2020.

- Sector strategies should build on and strengthen existing stakeholder initiatives, such as coalitions of actors already working together. Where these are not in place, efforts should be made to learn lessons from such initiatives and encourage and develop new ones, when appropriate.

- Sector strategies should contain common and cross-cutting elements, such as addressing SAICM's emerging policy issues (e.g. PFASs, lead in paint, HHPs, nano-materials) and chemical and waste obligations under relevant multi-lateral environmental, labour and health agreements.

- Other examples of cross-cutting issues include enhancing transparency and the flow of information along value chains (e.g. through QR codes[1] and product passports), encouraging the use of packaging free of hazardous chemicals, and engaging with SMEs and the informal sector.

Guiding principles provide a valuable reference to inform robust sector strategies

- To support the development of strategies under Beyond 2020 that are robust and ambitious, guiding principles can provide a solid benchmark and stimulate continuous performance improvement.

- The guiding principles should take into account that progress on the sound management of chemicals and waste can be achieved through commitment to continuous performance improvement by individual companies, groups of companies, or associations. Interacting and collaborating with other stakeholders is an important factor in driving such performance forward.

- Adopting an ambitious vision up-front that aims at eliminating or minimizing the use and release of hazardous chemicals in production, products and packaging is important.

[1] Notwithstanding the importance of clearly visible and identifiable product information. Notably, GHS-related information.

- Other guiding principles for performance improvement include, but are not limited, to the following:

    - Adoption of a corporate chemicals and waste policy
    - Identification of priority chemicals of concern targeted for phase out
    - Commitment to transparency and information disclosure
    - Compliance with green and sustainable chemistry innovation and solutions
    - Adoption of sustainable supply chain and extended producer responsibility schemes
    - Compliance with international chemicals and waste management agreements
    - Implementing classification and labelling based on the GHS

- Implementing these guiding principles may be facilitated by a road map which establishes milestones for continuous performance improvement.

- Further and more detailed guidance could be prepared to expand and elaborate on the draft guiding principles identified at the workshop.

A global programme can foster knowledge-sharing and action in a range of economic sectors

- A dedicated global programme on "Advancing sound chemicals and waste management in economic sectors and value chains" under Beyond 2020 could create a valuable global structure to engage key stakeholders.

- The programme could include global knowledge-sharing within sectors and across sectors, encourage sector strategy development and action, and help measure progress against relevant global targets and indicators.

- Programme activities could include the preparation of reviews for relevant sectors, and organizing global multi-stakeholder sector dialogues/summits to discuss progress, challenges and actions. The proposed programme should consider nuances across regions and countries. Furthermore, it is essential to take into account specific needs of SMEs.

Beyond 2020 needs to encourage enabling action by diverse stakeholders

- There is an opportunity for Beyond 2020 to acknowledge and share knowledge on existing enabling action by front runners in governments, civil society and industry.

- Policy coherence and harmonization across government sectors and value chains should be encouraged to support effective chemicals and waste management.

- Further guidance, lessons learned, and best practices could be developed to capture these front runner actions by governments, civil society and industry, coupled with dedicated capacity development programmes. The guidance should also identify motivators across different sectors to increase engagement and foster policy coherence.

Chemical footprint and industry reviews can foster performance improvement

- A number of chemical assessment methodologies are being used widely that measure the chemical footprint and performance of specific companies. While some initiatives estimate levels of chemical releases (and their change over time), others focus on corporate governance structures, such as adoption of sustainable supply chain policies or extended producer responsibility schemes.

- In many cases, these initiatives have led to collaborative action to improve the performance of companies and guided investors in making investment decisions.

- Beyond 2020 could encourage knowledge-sharing on these initiatives, promote their scaling-up, and explore opportunities for alignment. It could also consider preparation of a policy analysis to analyze existing chemical assessment and performance methodologies, and identify possible opportunities for synergies, alignment, and global uptake.

Beyond 2020 has a role to play in advancing international standards and guidelines

- To support sector strategies and implementation, Beyond 2020 could play a role in advancing global standards and guidelines that address various aspects of sound chemicals and waste management.

- Such opportunities include: supporting the uptake of existing standards and guidelines (e.g. in the textile sector); strengthening the chemicals and waste aspects of existing standards and guidelines; and encouraging development of new standards or guidelines (e.g. on green and sustainable chemistry).

Adequate, predictable and innovative financing is key to the success of Beyond 2020

- Mobilizing new, adequate, predictable and innovative financing and investment to advance chemicals and waste management in economic sector and value chains is essential.

- A number of innovative financing schemes exist which specifically address chemicals and waste management in economic sectors and value chains. They are often informed by concerns of financial institutions and investors about the environmental and health risks and impacts associated with chemicals throughout the value chain.

- Relevant financing instruments and initiatives include Extended Producer Responsibility schemes (which charge a small fee to fund enabling action and downstream initiatives), green bonds and guaranteed loans; or dedicated funding mechanisms under national, regional or global agreements.

- Furthermore, investors are starting to use chemical footprint assessments and company performance rankings to inform and shift their investment decisions. Similarly, implementation of environmental and social safeguards standards is used to inform investments.

- Opportunities exist to document these initiatives and explore how to scale them up and foster global implementation under Beyond 2020.

- Given the growing interest of institutional actors and investors, the development of a dedicated initiative under Beyond 2020 to mobilize the finance community and adequate funding along value chains is essential. This could include the establishment of a global dedicated fund.

Multi-stakeholder engagement and partnerships are essential

- While industry actors play a key role in programme implementation, it is important that development and implementation is supported through inclusive multi-stakeholder collaboration and dialogues.

- Furthermore, the establishment of partnerships that are results-based and follow good practices are crucial to support programme implementation.

- To support these processes, it would be valuable to develop guidelines and implement capacity development activities.

3 Workshop follow-up and next steps

During the final session, participants discussed a number of follow-up activities and actions, including the following:

- All workshop participants were encouraged to share the outcomes of the workshop with their networks and encourage stakeholders to engage actively in follow-up activities.

- The IOMC will work with the SAICM Secretariat on organizing a Technical Briefing on workshop outcomes in advance of IP4.2 in Nairobi. Workshop participants are encouraged to attend the Technical Briefing and IP4.2 and make a contribution.

- The IOMC will submit a Conference Room Paper (CRP) for the IP4.2 meeting scheduled from 27 February - 3 March 2023 in Nairobi, taking into account the outcomes of the workshop. It will contain proposed text relevant to economic sectors and value chains for consideration in the negotiations of the Beyond 2020 framework, in particular the IP Co-chairs' Single Consolidated Document. Other stakeholders are also encouraged to propose specific text for consideration at IP 4.2.

- IOMC will consider organizing a stakeholder expert meeting in May/June 2023 to undertake further consultation on guiding principles to support sector and value chain strategies and the elements of a dedicated global Programme for possible consideration at ICCM5.

- Actors working on sustainable finance (e.g. UNEP FI) are encouraged to work with other interested stakeholders to explore innovative financing further to support chemicals and waste management in economic sectors and value chains.

- All participants are encouraged to think through how commitments of decision-makers (e.g. CEOs and Executive Directors) may be mobilized in advance of, and be present at, ICCM5.

Annex 1

Selected references in IP4 Co-chairs Compilation Document

"The involvement of industry and the private sector throughout the value chain needs to be significantly enhanced under this instrument at all levels" (Section D. Enhanced Sectoral and Stakeholder Engagement)

Draft target on industry sector strategies

- Target D6 - By 20xx, sustainable chemical and waste management strategies have been developed and implemented for xy major economic sectors with intense chemical use, which identify priority chemicals of concern, standards and measures to reduce chemical input and footprint along the value chains (e.g. textile, electronic, building, agriculture etc.)

Related draft targets

- Target B2- By 20XX, stakeholders in the value chain ensure that reliable information on chemicals in [materials and] articles is available throughout their life cycle [including at the waste stage], to enable informed decisions and safe management of chemicals in a clean circular economy.

- Target D1 - Companies consistently invest in and achieve innovations toward advancing green and sustainable chemistry, cleaner production, and the deployment of life cycle management approaches for chemicals.

- Target D3 - By 20xx, companies, including from the investment sector, incorporate strategies and policies to implement the sound management of chemicals [and waste] in their investment approaches and business models and apply internationally- recognized reporting standards.

- Target D8 - By xx minimum requirements for third-party/private/non-governmental standards, labels and certification schemes are defined and reviewed on an ongoing basis, potential for harmonization is explored and adherence increased and applied by private sector and monitored by governments and other stakeholders.

POSICIONAMENTO ABIQUIM SOBRE ECONOMIA CIRCULAR

ABIQUIM
QUÍMICA: PROMOVENDO AVANÇOS E PROTEGENDO VIDAS

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A indústria química é provedora de soluções para quase todos os setores industriais, tais como agricultura, construção civil, setor automotivo, eletroeletrônicos, serviços de saúde, entre outros, desenvolvendo e difundindo produtos sustentáveis que ajudam a preservar o planeta e melhorar a qualidade de vida e a longevidade da população.

A Associação Brasileira da Indústria Química – ABIQUIM, há muitos anos vem trabalhando, junto a seus associados, na redução dos impactos e riscos relacionados às instalações, processos, produtos e serviços. A entidade coordena no Brasil, desde 1992, o Programa Atuação Responsável®, iniciativa voluntária da indústria química global para sustentabilidade, meio ambiente, saúde e segurança, buscando sempre a melhoria contínua, o uso racional de recursos e a geração de menores impactos ambientais e sociais com melhor impacto econômico.

A indústria química tem um longo histórico de avanços no aprimoramento de suas operações. O esforço das empresas para desenvolvimento e aplicação de novas tecnologias que atuam no controle e monitoramento de processos, na melhoria da eficiência, no reúso de recursos e na automação, em uma visão alinhada com as melhores estratégias internacionais voltadas para a gestão segura de produtos, são elementos que produziram resultados de excelência, que apoiam a ideia da revalorização de resíduos para que retornem aos ciclos de produção como matéria-prima valiosa, e não sejam tratados ou descartados como resíduos sem valor.

Os exemplos práticos abaixo, dos indicadores do Programa Atuação Responsável®, demonstram como a indústria química vem avançando na transformação de resíduos em recursos valiosos:

- A indústria química tem se dedicado ao aumento do reaproveitamento dos recursos que utiliza. Em 2020, quase 75% dos resíduos perigosos gerados e 44% dos resíduos não perigosos foram reaproveitados;

- De 2006 a 2020, a indústria química reduziu em 8% a geração de resíduos (perigosos e não perigosos), redução medida em kg por tonelada de produto;

- Em 2006, a indústria química reaproveitava cerca de 7% dos resíduos perigosos. Em 2020, esse índice atingiu quase 75%;

- Em 2006, a indústria química reaproveitava cerca de 15% dos resíduos não-perigosos. Em 2020, esse índice atingiu 44%.

Muitos destes princípios e conceitos que alicerçam a atuação da ABIQUIM e do Programa Atuação Responsável® no que tange à utilização dos recursos, eliminação, reaproveitamento ou redução de resíduos estão diretamente ligados a um tema de grande atualidade na agenda de Sustentabilidade: a Economia Circular, também chamada de/ou associada aos termos simbiose industrial, otimização industrial, economia regenerativa ou excelência operacional.

Economia Circular: Definição e princípios

Definir adequadamente, de uma maneira clara, o conceito de economia circular é um importante passo na comunicação das ações de circularidade da indústria química para a sociedade.

Para o ICCA – Conselho Internacional das Associações Químicas, a economia circular é um componente-chave para a sustentabilidade, através do qual recursos e materiais são circulados continuamente de modo a eliminar resíduos enquanto cria valor para todos os elos da cadeia.

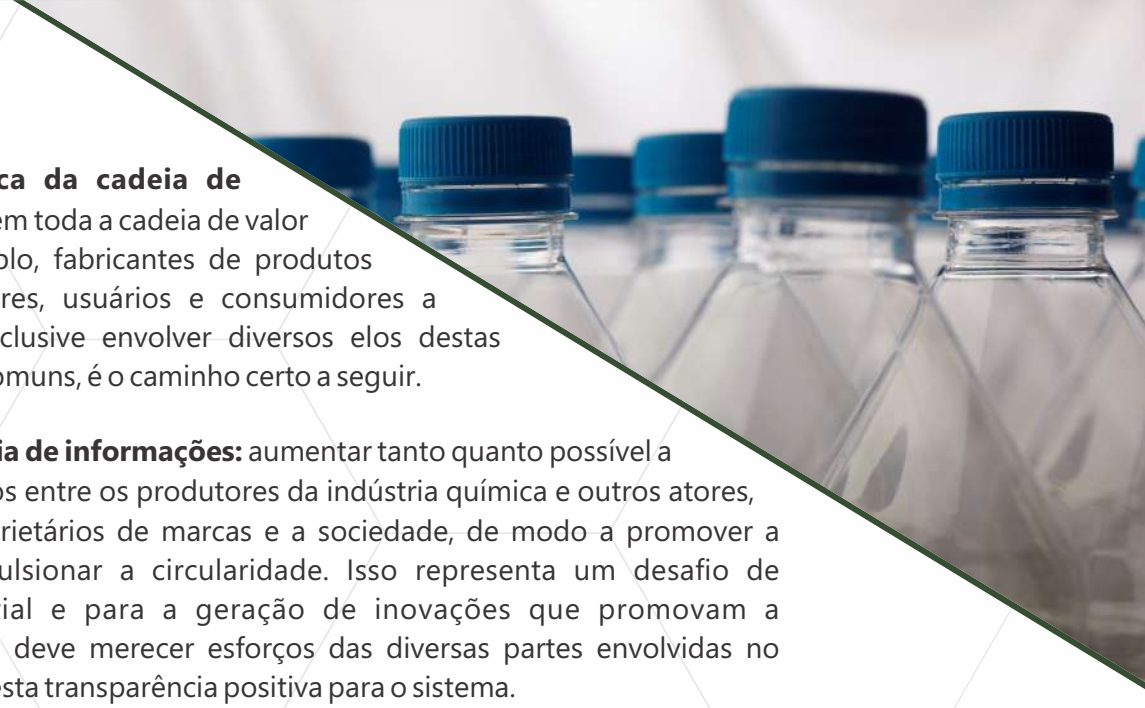
De acordo com as recentes discussões da Organização Internacional de Normalização (ISO), que atualmente trabalha na elaboração de uma Norma técnica para o tema, Economia Circular "é um sistema econômico que utiliza a abordagem sistêmica para manter o fluxo circular dos recursos, por meio da adição, retenção e regeneração de seu valor, contribuindo para o desenvolvimento sustentável".

Em termos gerais, é consenso que Economia Circular apoia a sustentabilidade das operações de todos os setores industriais ao promover a utilização de recursos e materiais em ciclos contínuos, eliminando desperdícios e resíduos, gerando desta forma valor para todos os elos das cadeias.

Para explorar todo o potencial de uma economia circular, a indústria, a cadeia de valor e os legisladores, juntamente com todas as partes interessadas, devem levar em consideração os seguintes princípios:

- **Segurança em primeiro lugar:** A circulação de recursos deve ser gerenciada de forma transparente, de forma a prover máxima segurança para trabalhadores, consumidores e para o meio ambiente. Os recursos a serem geridos de maneira circular têm que ser comprovadamente seguros, caso contrário a solução não é implementada.

- **Pensamento do ciclo de vida:** É necessário priorizar o uso de materiais inovadores e de abordagens de design que promovam novos modelos de negócios, que levem em conta todo o ciclo de vida dos produtos - com especial atenção ao fim de vida do produto, para eliminar o conceito de resíduo e implementar a abordagem "do berço ao berço" ("crade-to-cradle") em substituição ao modelo linear "berço ao túmulo" ("cradle-to-grave"). O objetivo permanente é buscar eficiência operacional máxima, reutilizar materiais e conservar recursos, a fim de manter o valor dos recursos por mais tempo na economia, levando em consideração todos os possíveis impactos que um produto possa gerar ao longo do seu ciclo de vida. As Avaliações de Ciclo de Vida (ACV) são uma ferramenta importante neste caminho para a circularidade dos processos e devem ser utilizadas para dar suporte técnico às análises.



- **Abordagem holística da cadeia de valor:** Criar parcerias em toda a cadeia de valor (incluindo, por exemplo, fabricantes de produtos químicos, distribuidores, usuários e consumidores a jusante), podendo inclusive envolver diversos elos destas cadeias em projetos comuns, é o caminho certo a seguir.

- **Redução da assimetria de informações:** aumentar tanto quanto possível a transparência de dados entre os produtores da indústria química e outros atores, como varejistas, proprietários de marcas e a sociedade, de modo a promover a transparência e impulsionar a circularidade. Isso representa um desafio de propriedade industrial e para a geração de inovações que promovam a sustentabilidade, mas deve merecer esforços das diversas partes envolvidas no sentido de promover esta transparência positiva para o sistema.

Compromisso Abiquim

A indústria química é, por sua natureza, promotora de soluções de circularidade e provedora de soluções para o desenvolvimento sustentável de diversos setores. Soluções sustentáveis geradas na química, sendo uma indústria de base, permeiam diferentes cadeias produtivas, irradiando e difundindo progresso técnico por toda economia. Dentre essas ações, estão soluções para circularidade de produtos e processos.

Tendo em vista:

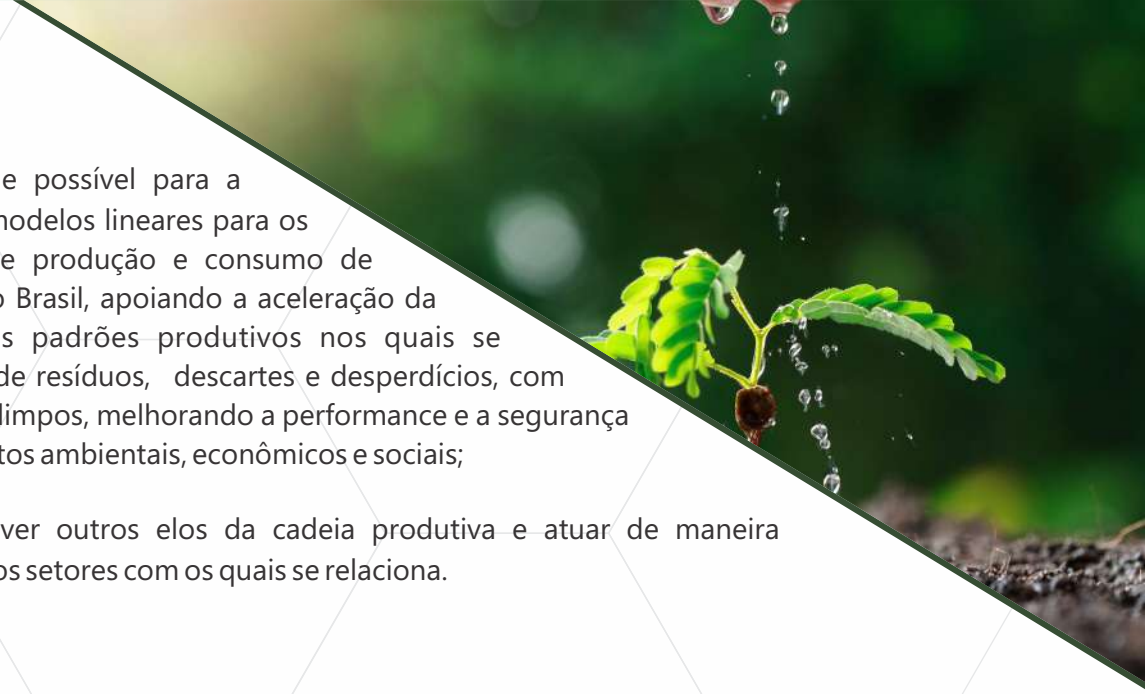
- a característica intrínseca de transversalidade da indústria química e potencial papel alavancador desta indústria na implementação de novos modelos;

- a longa trajetória da ABIQUIM no fomento de melhorias de processos e da utilização racional de recursos na indústria química através do programa Atuação Responsável e outros programas coordenados e implementados com êxito pela associação no Brasil; e

- a premente necessidade de mudança dos atuais modelos de produção e consumo lineares, baseados na extração-consumo-descarte de recursos, que apesar dos avanços e benefícios que trouxeram à sociedade nos últimos séculos, precisam ser revistos e modificados;

a ABIQUIM vem reforçar seu compromisso com o desenvolvimento dos princípios e conceitos da Economia Circular na indústria química no Brasil e compromete-se a:

- promover o debate e construir uma agenda de defesa da economia circular no Brasil, que possa alavancar soluções circulares para os insumos e produtos químicos brasileiros, trazendo mais inovação e competitividade para a indústria química brasileira;



- colaborar sempre que possível para a transição dos atuais modelos lineares para os modelos circulares de produção e consumo de produtos químicos no Brasil, apoiando a aceleração da mudança para novos padrões produtivos nos quais se eliminem o conceito de resíduos, descartes e desperdícios, com fluxos mais perenes e limpos, melhorando a performance e a segurança da indústria nos aspectos ambientais, econômicos e sociais;

- sempre buscar envolver outros elos da cadeia produtiva e atuar de maneira coordenada com outros setores com os quais se relaciona.

Elementos-chave para a Economia Circular:

- A Abiquim está comprometida em colaborar com seus associados para o progresso em direção à circularidade por meio dos seguintes elementos-chave:

- Inovações que ajudem a melhorar as taxas de reutilização, reaproveitamento e reciclagem de produtos como plásticos;

- Tecnologias que recapturem e reaproveitem produtos químicos usados na fabricação e decompõem materiais descartados em blocos básicos de química, para estender a vida útil e criar valor adicional para essas moléculas como matérias-primas que podem ser fabricadas em novos produtos ou dar suporte a novos usos industriais;

- Projetos sustentáveis de produtos e seleção de materiais que melhorem sua durabilidade, aumentem sua leveza, estendam a vida útil e permitam o reaproveitamento dos componentes do produto, preservando seu valor e utilidade em um sistema regenerativo;

- Uso de abordagem sistêmica e de ciclo de vida para buscar tecnologias e produtos que reduzam as demandas por recursos e o desperdício em toda a cadeia de suprimentos de produtos químicos;

- Tecnologias que impulsionem a produção de materiais e produtos de base biológica por meio do uso aprimorado de matérias-primas de biomassa que requerem um uso limitado de terras e insumos;

- Inovações que ajudem a impulsionar avanços em tecnologias de recuperação energética de materiais não recicláveis;

- Maior eficiência de recursos e otimização dos processos de fabricação que permitam aos insumos serem utilizados o maior número de vezes possível, de forma que mais possa ser feito com menos recursos e menos desperdício, como por meio de Captura e Utilização de Carbono (CCU) e insumos de gaseificação.

- Novos compromissos e investimentos que permitirão à indústria e à sociedade maximizar o valor, a utilidade e o benefício social de cada molécula, material e produto que a química possibilita.

- Colaborar proativamente com clientes, cientistas, comunidades e governos para melhorar as práticas de fim de vida, como coleta, segregação e processamento de resíduos, para que possam ser reciclados e transformados em produtos valiosos.

Cenário Brasil

É importante levar em consideração que, dificilmente, modelos criados em outros lugares poderão ser importados e adaptados sem esforços, ou a baixo custo, à realidade brasileira. A implementação de medidas de circularidade no Brasil passa necessariamente pela consideração da dimensão social: é preciso levar em conta, por exemplo, que muitas pessoas no país vivem da coleta e da reciclagem de materiais, muitas vezes em condições informais e precárias de trabalho. Neste sentido, a implementação de medidas de circularidade no Brasil demandará a construção de novos modelos de negócio, que levem em conta as especificidades do país, inclusive da questão social.

A Política Nacional de Resíduos Sólidos (PNRS), de 2010, oferece princípios e diretrizes considerados de vanguarda desde a sua publicação. Fruto de extensa discussão, reconhece que é essencial o contínuo diálogo entre diversos atores da sociedade para avanços a partir de uma visão sistêmica. Seus princípios fundamentais como reduzir a geração, implementar os sistemas de logística reversa, aumentar a recuperação dos materiais e assegurar a disposição final adequada oferecem um caminho para a transição brasileira de uma economia linear para uma economia circular, tanto técnica como a partir da colaboração. A estratégia de longo prazo do país, apresentada no Plano Nacional de Resíduos Sólidos (Planares), também reconhece a necessidade de uma gestão integrada dos resíduos sólidos, reconhecendo as dimensões política, econômica, ambiental, cultural e social, sob a premissa do desenvolvimento sustentável.

Em linha com o compromisso nacional, a indústria química brasileira implementa o Atuação Responsável® desde 1992, incentivando suas empresas a utilizarem os recursos eficientemente, minimizando a geração de resíduos, o descarte de efluentes e emissões gasosas.

Reconhecendo que os esforços são contínuos, a indústria progride em linha ao artigo 9º da PNRS, e busca continuamente a concepção de produtos e processos que estimulem a não geração, redução, reutilização, reciclagem, tratamento dos resíduos e disposição final ambientalmente adequada dos rejeitos. A inovação da indústria química a partir dessa lógica já viabilizou inúmeros produtos que hoje já fazem parte do dia a dia da sociedade.

Nesse cenário, projetos pilotos na transformação de resíduos em novos produtos comercialmente viáveis ou reaproveitáveis no processo são frequentes. Ambicionando o desenvolvimento sustentável brasileiro, a visão da Abiquim é de que, para que os projetos sejam efetivamente escalados, instrumentos econômicos e financeiros serão essenciais para viabilizar a transição do País para uma economia circular.

O Planares prevê que, em 2040, ao menos 72,6% da população brasileira tenha acesso à coleta seletiva e que 20% do material coletado seja reciclado. Essa é uma meta desafiadora, na qual a indústria química está pronta para colaborar, buscando soluções conjuntas e colaborativas.

Dados do 'Panorama dos Resíduos Sólidos no Brasil 2020', da ABRELPE (Associação Brasileira de Empresas de Limpeza Pública e Resíduos Especiais), apontam que a quantidade de resíduos sólidos urbanos coletados aumentou 24% entre 2010 e 2019, acima da quantidade gerada (19%). Ainda assim, desafios no país seguem continentais, e somente uma construção coordenada e em múltiplas áreas poderá viabilizar os necessários avanços, bem como oferecer um novo ambiente de negócios para o país.

O engajamento na transição de uma economia linear para uma que redesenha, recicla, reutiliza e remanufatura, elimina o descarte de resíduos e que protege o meio ambiente deve promover a inovação, estimular novas oportunidades de negócios, reconhecer o componente social do modelo de reciclagem brasileiro e fomentar o diálogo entre as partes interessadas, já que o benefício é compartilhado entre a sociedade, os negócios e o planeta.

Posicionamento de setores específicos

O desenvolvimento da Economia Circular não é um tema novo para a Abiquim. Como já mencionamos, muitos dos preceitos e dos alicerces da Economia Circular já estão presentes em outras ações da Associação, em especial no Programa Atuação Responsável.

A Abiquim possui também um posicionamento sobre economia circular com foco específico no setor de resinas termoplásticas. Neste posicionamento, algumas metas foram estabelecidas, que são específicas a esse subsetor da química, e aos associados que nele atuam.

No entanto, este novo posicionamento da Abiquim não tem um recorte por segmentos da química. Ao contrário, busca abarcar todos os produtos químicos de uso industrial no escopo de atuação da Associação.

Logo, esse posicionamento e os compromissos ora assumidos não invalidam nem substituem quaisquer outros posicionamentos e compromissos assumidos anteriormente pela Abiquim, mas sim devem ser entendidos como complementares a eles. Portanto este novo posicionamento ratifica e complementa o "Compromisso Voluntário com Economia circular dos Plásticos" de 2018.

Economia Circular e Desenvolvimento Sustentável

O termo Desenvolvimento Sustentável vem sendo há muito tempo consolidado como o modelo de desenvolvimento que procura satisfazer as necessidades das gerações atuais sem comprometer as gerações futuras, visando assegurar a utilização de maneira consciente e responsável dos recursos naturais não renováveis e a conservação e preservação dos ecossistemas.

Entendendo que o desenvolvimento sustentável do planeta abrange diversos aspectos sociais, econômicos e ambientais, transversais a todos os países, de natureza geral e inclusiva, a ONU criou e consolidou também ao longo dos anos a Agenda 2030, que abrange 17 Objetivos de Desenvolvimento Sustentável (ODS) mais 169 metas como orientadores das ações dos países, e de todos os stakeholders nestes países, aí incluída a iniciativa privada.

Tendo em vista o princípio fundamental da Economia Circular de manter os recursos não renováveis no ciclo econômico de forma contínua e eliminar ou reduzir resíduos nos processos, conclui-se que o objetivo de preservar recursos existentes é fundamental tanto para a Economia Circular quanto para o atingimento do Desenvolvimento Sustentável.

Além disso, os conceitos e métodos da circularidade visam garantir uma produção industrial mais limpa, com redução de emissões de gases de efeito estufa e dos gastos energéticos e uma economia baseada em recursos sustentáveis a fim de garantir a preservação do planeta e mais cuidados com o meio ambiente, estando assim alinhada com a Agenda 2030.

Vale ainda ressaltar que economia circular não se desenvolve como uma dimensão apartada das demais dimensões de sustentabilidade. Pelo contrário, seus preceitos, por exemplo, relacionam-se com os ODS 12 (consumo e produção sustentável), 8 (trabalho descente e crescimento econômico) e 9 (indústria, inovação e infraestrutura).

A indústria química brasileira participa ativamente desse esforço de cumprimento das metas estabelecidas na Agenda 2030, e a Abiquim atua ativamente neste sentido, incentivando a observação e implementação dos ODSs entre suas empresas associadas. Exemplos concretos da inserção dos Objetivos nas atividades e projetos de consumo e produção responsáveis dessas indústrias podem ser vistos na página da associação: http://ods.abiquim.org.br/consumo-e-producao-responsaveis/cases.

Conclusões e encaminhamentos

Tendo a inexistência do conceito de resíduos como um dos seus pilares, o modelo circular de produção e consumo pressupõe que todos os recursos retornem aos processos em ciclos reversos, fechados, seja na mesma cadeia produtiva ou em outras cadeias de valor.

A indústria química participa ativamente de quase todas as cadeias produtivas da indústria e está presente em setores produtivos estratégicos e em um grau elevado de encadeamentos na economia. Por essa característica, a indústria química pode facilitar e alavancar a implementação da Economia Circular, estimulando conexões multisetoriais que permitirão o surgimento de soluções inovadoras e de novos modelos de negócio que fechem ciclos.

O setor está comprometido em colaborar com membros da indústria, governo, sociedade civil e instituições de pesquisa acadêmica, na busca de resultados que otimizem materiais, recursos e tecnologias para criar valor para todos.

Mesmo sendo a química uma facilitadora do progresso em direção ao desenvolvimento sustentável e a uma economia mais circular, há muito mais a fazer para uma transição completa para modelos de negócios em que os recursos são continuamente reciclados para eliminar o desperdício e manter o valor.

A economia circular só poderá desenvolver-se em um ambiente no qual a inovação e a educação sejam alicerces fundamentais do progresso industrial e econômico.

Também o desenvolvimento do contexto regulatório seguro e bem estruturado é fundamental para a implementação dos novos modelos circulares.

Esforços em temas de educação, regulação e o desenvolvimento de políticas que incentivem a adoção de práticas circulares, investimentos em nova infraestrutura necessária para os novos modelos, com linhas de financiamento, são necessários para que a agenda de Economia Circular ganhe força no Brasil.

Para que este processo possa ocorrer de maneira eficiente, torna-se necessária a participação da sociedade como um todo, o comprometimento de vários setores da iniciativa privada, dos governos em todas as esferas – federal, estadual e municipal – bem como do engajamento da sociedade civil.

Seguindo os princípios do modelo econômico circular, a ABIQUIM entende que a indústria química brasileira estará mais uma vez contribuindo para melhorar o contexto econômico, ambiental e social do país, garantindo sua sustentabilidade ao mesmo tempo em que reduz os impactos ao meio ambiente e fortalece os aspectos sociais.

Responsible Care®

Responsible Care® is the global chemical industry's voluntary initiative to foster safe management of chemicals and continually improve the environmental, health, safety and security (EHS&S) performance of our processes, operations and products.

Beginning in Canada in 1985, today, Responsible Care® is practiced in nearly 70 global economies and is an essential part of ICCA's contribution to the **Strategic Approach to International Chemicals Management** to promote chemical safety and sustainability around the world.

More Than 35 Years of Responsible Care®

1985 — Responsible Care launched in Canada

1988 — U.S., European countries begin adopting Responsible Care

1992 — Responsible Care model for voluntary initiatives adopted at UN Rio Earth Summit

1996 — ISO 14001 adopted and published

2003 — UN adopts Globally Harmonized System of Classification and Labelling of Chemicals

2006 — First International Conference on Chemicals Management; ICCA adopts Responsible Care Global Charter

2007 — REACH established in EU

2008 — ICCA establishes Global Product Strategy

2014 — ICCA releases updated Responsible Care Global Charter

2015 — UN introduces 17 Sustainable Development Goals

2018 — ICCA's Africa Task Force formed to foster Responsible Care adoption in the region

2019 — Cefic launches Responsible Care Self-Assessment Tool

2021 — SAICM initiated beyond 2020

2022 — Responsible Care implemented in nearly 70 economies globally

Beyond 2022 — ICCA plans for launch of global Responsible Care Self-Assessment Tool

Responsible Care® Global Charter

CEOs from leading chemical suppliers and manufacturers around the world have signed the Responsible Care Global Charter, which outlines our unified commitment to:

- Enable a corporate leadership culture that supports safe chemicals management;
- Safeguard people and the environment through continuous process improvement;
- Strengthen chemical management systems around the world;
- Influence business partners to transparently report progress;
- Engage stakeholders to promote chemical safety; and
- Contribute to sustainability.

While Responsible Care requirements can vary from region to region, **a set of ICCA implementation milestones** enables national associations to track progress to build and grow Responsible Care.

A fundamental component of Responsible Care is adoption of **codes, guidance, policies or procedures** around a set of **core values and objectives**. By implementing a common management approach, national associations can **connect the Responsible Care principles** to national and international practices, standards, and sustainability principles.

Enabling Continual Progress

ICCA's Key Performance Indicators (KPIs) reporting tool enables national associations to work with companies in their regions to collect and report data on industry performance metrics related to:

- Workplace Safety;
- Energy and Water Consumption;
- CO2 Emissions; and
- Process Safety Incidents.

Building on a model first used in Europe, ICCA is also developing a **Self-Assessment Tool** for global use to connect Responsible Care with broader international standards in the fields of sustainability, corporate social responsibility, health, safety and environment, and efficiency.

It also introduces **four "maturity" levels**, describing four different levels of Responsible Care implementation. This can help attract more **small and medium-sized enterprises** that are interested in joining Responsible Care and are looking for a starting point.

Access the full 2021 ICCA Responsible Care Status Report by scanning the following QR Code.

Expanding Responsible Care® Around the Globe

Global Capacity Building Activities

With a focus on China, India and Africa, ICCA provides financial and technical resources to support capacity building to advance Responsible Care adoption and implementation.

These efforts focus on:

- Promoting awareness of and knowledge about chemical hazards;
- Managing risks associated with manufacture and use of chemicals; and
- Developing the necessary national infrastructure and capacities for regulatory and voluntary approaches to chemical management.

Since 2019, ICCA has contributed approximately **€860,000** to support **79 capacity building projects** promoting Responsible Care:

2019
26 workshops and events
19 countries
2020
14 workshops and events
11 countries
2021
20 workshops and events
16 countries
2022
17 workshops and events
15 countries

The **Romanian Chemicals Producers and Distributors Association** (APDCR) joined Responsible Care in **2020**

Responsible Care Kenya (RCK) formed in **2021** — hosted by the Kenya Association of Manufacturers (KAM)

Peer Mentoring Network

ICCA member associations and companies have access to a **global network of experienced practitioners** to help enhance safety, health and environmental protection.

Experienced practitioners lend expertise to online workshops and specialist topics, including GHS implementation and UN Recommendations on the Transport of Dangerous Goods legislation.

The Journey Toward Sustainability

Chemistry plays an essential role in driving progress across all three dimensions of sustainable development — **environmental, social and economic**.

Responsible Care enables the industry to foster sustainable development practices, community relationships and a culture of continuous improvement.

While Responsible Care is the foundation of the chemical industry's commitment to sustainability, our industry's contributions to sustainability are much broader. **Innovative products and technologies** that depend on chemistry will play a critical role in meeting the challenges and targets set out across the **UN Sustainable Development Goals**.

SUSTAINABLE DEVELOPMENT GOALS

Learn more about ICCA's contributions to each of the 17 Sustainable Development Goals by scanning the QR code.

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Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

ICCA
International Council of Chemical Associations