

BIOCIDE LEASING

A triple-win business model for
Sustainable Chemistry

Spraying biocides in Hospital.

The Capacity Development approach of ISC3

Introduction, background, challenges

Biocides are a group of chemicals used in a multitude of industrial and daily life applications. They are essential and generate advantages: they help to fulfil hygiene requirements and protect the health of humans and animals and are also used in industrial processes.

On the other hand, biocides are designed to manage and control the presence of living organisms, and thus many biocidal products can pose significant risks to human health and the environment if not used in a correct and properly metered way. During the COVID-19 pandemic, there has been a massive increase in the production and use of biocides, in particular disinfectants, leading to overconsumption, shortages in the industry and threats to the environment.

Inappropriate use of certain biocides in hospitals and the healthcare sector can lead to the emergence of stronger and more resistant bacteria and thus to antimicrobial resistance (AMR). Because of the risk of being held liable for improperly disinfected tools or surfaces, hospitals might tend to use more disinfectants than are necessary.

Biocides are also used in the food and healthcare sectors. Residues of biocides end up in wastewater and ultimately in water treatment plants, possibly compromising their operation. Overuse does not only lead to adverse ecological effects; the unnecessary procurement of biocides also leads to high costs for the user.

Solution for a more efficient use of biocides: Chemical Leasing

The innovative business model Chemical Leasing can be a solution to the problem of overconsumption. When we apply it to biocides, we could call this model

“Biocide Leasing”. The main advantage of this business model is that it turns the volume of used biocides from an earning factor (“the more you sell the more you earn”) into a cost driver for the supplier. In Biocide Leasing, the supplier has a commercial interest in using only those amounts of biocides that are really necessary for hygiene purposes.

Chemical Leasing

Chemical Leasing is a performance-based business model for sustainable chemicals management. It aims at a more efficient use of chemicals by redefining the business relationship between the chemical user and the supplier.

A conventional business model assumes that the more you sell, the more you earn. However, in Chemical Leasing the supplier does not sell quantities. The supplier sells the chemical's performance, its function. This is the service rendered by the chemical or the purpose for which the chemical is used.

For example, the chemical's function could be to clean or degrease metal parts, or to protect a surface. Payment is then made according to functional units, that is, the number of pieces cleaned or the size of the area coated.

Chemical Leasing strives for a triple-win situation. It aims at increasing the efficient use of chemicals while reducing the risks of chemicals and protecting human health and the environment. Less chemical consumption means less chemical production and therefore significant CO₂ savings in most cases.

Chemical Leasing improves the economic and environmental performance of both the supplier and the user of chemicals, enhances their access to new market opportunities and leads to a fair sharing of benefits.

Chemical Leasing, as a performance-based business model that has been successfully applied for 20 years in several industrial sectors worldwide, is an example of the sharing economy concept.

In the example of disinfection/ biocidal products, the supplier is not paid for the amount of disinfectant but for the achieved benefit, e.g., disinfection of a room in a hospital. When applied to disinfection products, the supplier has a commercial interest in achieving the required disinfection with reduced amounts of disinfectants.

Promoting the use of Biocide Leasing supports Sustainable Chemistry by:

- Increasing capacities for a professional, efficient and effective use of disinfectants and biocides
- Setting incentives for less production of chemicals and chemicals waste with its corresponding environmental and economic advantages
- Preventing emissions of chemicals into the environment and thereby protecting natural ecosystems and biodiversity
- Preventing/reducing inhalation, ingestion and skin contact and hence health exposure risks for humans and animals
- Promoting more biocides and antibiotic stewardship and thus preventing the further development of antimicrobial and/or antibiotic resistances

Sharing Economy

The successful implementation of Biocide Leasing requires a new business model, namely, what is known as a “sharing economy”. This builds on the idea of sharing human and physical resources and, due to its major expansion, has become an increasingly popular business model.

At its core, it follows the idea of collaborating across all social and economic facets of life by sharing access to goods and services through online platforms. It thus supports the concept that using is more important than owning and represents a socio-economic ecosystem that encourages and

strengthens collaboration in a sustainable manner.

Service-based business models help to focus on the performance of chemicals and reduce negative environmental and societal impacts while at the same time fostering innovation. ISC3 aims to put these innovative business models into practice. As an innovative example of the sharing economy, Chemical Leasing entails the sharing and distribution of knowledge on proper and functional chemical usage between the producer and the user. Likewise, ISC3 promotes collaborative business models such as “open labs”, which address and foster a more efficient use of „lab resources“.



ISC3 offers Capacity Development on Innovative Business Models.

Capacity Development

Until now, human health and One Health have not been main topics in the discussion with stakeholders and partners of ISC3 and therefore also not a focal point of its activities. Nevertheless, the topic is gaining momentum through the COVID-19 crisis and, as a consequence, attention and demands are also increasing.

ISC3 uses multiple channels to place Sustainable Chemistry topics, instruments and tools on

national and international agendas through its various [Capacity Development initiatives](#). As an international centre with relevant experience in the promotion and development of Sustainable Chemistry solutions, ISC3 has already advised various stakeholders (e.g. policymakers, industrial clusters, etc.) on their business structures, encouraging them in the direction of more sustainable and fair cooperation between supplier and consumer.

BIOCIDE LEASING

A triple-win business model for Sustainable Chemistry

How it works

SUPPLIER



Biocides
Disinfectants
Detergents

USER



Hospitals
Agriculture
Food

Provides not only chemicals but also expertise and services to optimize chemical use.

CHEMICAL SUPPLIER
A manufacturer/distributor/trader of chemicals

Know-how: More efficient and safer application of chemicals to the specific process

Benefit: Long-term business relation and better market competitiveness, higher profit, experience

MOTIVATION IS ALIGNED:

Both partners are interested in achieving better performance and desired quality by using **LESS CHEMICALS**

Pays for function/services rendered by chemicals and not for the volume.

CHEMICAL USER
A company that uses chemicals in operations

Know-how: Specifics of the process where chemicals are used

Benefit: Economic, environmental, health and safety benefits; sustainable chemical management, specific knowledge

Chemical Leasing is a cooperative business model.





KNOW-HOW

ISC3 catalyzes this reaction:
Building networks
Implementing pilot projects

SUPPLIER



Biocides
Disinfectants
Detergents

USER



Hospitals
Agriculture
Food

ISC3 catalyzes this reaction:
Raising awareness
Facilitating trainings

KNOW-HOW

THE TRIPLE WIN



SUPPLIER

No overproduction
Safer work conditions
Better competitiveness
Long-term-business relations
Cost effectiveness



USER



The planet benefits with a contribution to the SDGs



PLANET

Capacity development by ISC3 on the topic of “Chemical Leasing” takes place on four levels:

Competence development

Users, producers and service providers in the biocide sector need hands-on training to learn how they can implement the model. Industrial associations need awareness-raising measures to bring together relevant actors.

Suppliers need good examples of business opportunities. Their role is crucial because without suppliers that offer Chemical Leasing there will be no success. In hospitals, high-quality disinfection is very important and can otherwise lead to health or liability issues if the wrong amount of disinfectants is used. Examples can be found on the Chemical Leasing website (www.chemicalleasing.com). A report by Schülke, a major manufacturer of disinfectants, on their use in hospitals is available.

Organisational development

Companies working with chemicals such as biocides must learn how to use innovative business models and need good practice examples and role models. ISC3 is therefore implementing a pilot project, in which it brings together biocide producers and users and helps them to implement Chemical Leasing.

ISC3 also provides advisory services to companies in South America that want to apply the “Chemical Leasing” model to biocides.

ISC3 helps them to draft contracts and clarify issues surrounding intellectual property and liability.

Development of cooperation systems

After the first awareness-raising measures, ISC3 will establish a network of possible users and producers of biocides and regional service providers in South America. The network will receive support in the form of training measures, workshops and advisory services. Service providers from the network will be selected to implement a pilot project. ISC3 will accompany users and producers through this pilot project and create new examples of Chemical Leasing.

Development of enabling frameworks

Policymakers and governments must ensure that proper enabling frameworks, rules and regulations are in place. They are also in a position to promote innovation in their countries.

To be able to foster the use of sustainable business models, policymakers need the proper knowledge and advice, which is why ISC3 involves them in its awareness-raising workshops.



Are you a producer, user or other stakeholder in a position to mainstream the idea of Sustainable Chemistry and integrate Chemical and Biocide Leasing in order to combat future pandemics and zoonotic diseases? Contact ISC3 if you would like to be part of our network and work with us!

Partners

ISC3 is only able to implement its activities thanks to its strong network of regional partners. Together with the BCCC-SCRC in Montevideo, for example, ISC3 organised an awareness-raising workshop for the chemical sector in Uruguay. On 27 and 28 April 2022, 40 interested representatives from industry, policy and civil society learned and discussed about the concept of Chemical Leasing. Further awareness-raising activities in South America are planned.

Chemical Leasing and **Biocide Leasing** are innovative business models in line with the principles and values of the "Sustainable Chemistry" concept, which in turn is supported by Germany's Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and implemented on its behalf by GIZ in the form of the ISC3. ISC3 is cooperating with a network of organisations in order to implement the concept of "Chemical Leasing" in South America.

In South America, we are cooperating with the following partners:

The **Basel Convention Coordinating Centre, Stockholm Regional Centre for Latin America and the Caribbean (BCCC-SCRC)** in Uruguay, based in Montevideo, Uruguay, conducts training measures and knowledge transfer activities on sound chemicals management.

The **National Agency for Research and Innovation (ANII) in Uruguay** promotes and strengthens the innovation system in Uruguay.

The **Association for the Chemical Industry of Uruguay (ASIQUR)** forms a strong network of the chemical industry in Uruguay and provides us with a network to reach out to users and producers of biocides.

The National **Cleaner Production Centre (CER-Grupo GEA)** in Peru promotes cleaner production through awareness raising in Peru.



Chemical Leasing has been successfully applied on detergents in the laundry and hospitality industry.

ISC3 was established in 2017 and operates a head office at GIZ in Bonn, an "Innovation Hub" in Frankfurt (hosted by DECHEMA e. V.) and a Research and Education Hub in Lüneburg (hosted by Leuphana University). ISC3 is a global project with activities in several countries and regions; its goal is to support a global breakthrough of the Sustainable Chemistry concept, including the promotion of innovative business models such as Chemical Leasing and Biocide Leasing.

ISC3 builds on the knowledge of its reliable partner **ChemPerform**, who aims to expand the use of the "Chemical Leasing" business model to the use of biocides and disinfection products, with a current focus on surface disinfection. The initiative is being implemented with the financial support of Austria's Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK).

Published by:

ISC3 -- International Sustainable Chemistry Collaborative Centre
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Friedrich-Ebert-Allee 32 + 36, 53113 Bonn/Germany
contact@isc3.org
www.isc3.org
Edited by: Claudio Cinquemani, claudio.cinquemani@isc3.org



ChemPerform
www.chemperform.org
joas@globylity.com
otter@globylity.com
schwemberger@globylity.com

Layout & Design

enviro.marketing GmbH
Ritter-Waldauf-Str. 32, 6112 Wattens/Austria
www.enviro-marketing.com
info@enviro-marketing.com

On behalf of

the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)
Stresemannstr. 128–130, 10117 Berlin/Germany
German Environment Agency (UBA),
Wörlitzer Platz 1, 06844 Dessau-Roßlau/Germany

Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)
Radetzkystraße 2, 1030 Vienna/Austria

Photocredits: GIZ Photopool, www.pexels.com, envatoelements



Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection



 Bundesministerium
Klimaschutz, Umwelt,
Energie, Mobilität,
Innovation und Technologie

implemented by:

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



CHEMPERFORM
∞ biozid leasing



Photocredits: GIZ Photopool, www.pexels.com, envatoelements