

**Japan Chemical Industry Association**

**Report of Taskforce for the Chemical  
Industry's Contribution to Sustainable  
Development Goals**

**The Chemical Industry's Visions to  
Consistently Contribute to Sustainable  
Development**

- From Responsibility to Responsible Contribution -

May 10, 2017

Taskforce for Chemical Industry's Contribution to  
Sustainable Development Goals,  
Japan Chemical Industry Association

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## Introduction: Japanese Chemical Industry and Sustainable Development

In the 20th century, human economic activities dramatically expanded with the development of science and technology. In the meantime, mankind suffered from the consequences of World War I and II. Nevertheless, this “economic growth” has enabled many people to live an abundant life. At the same time, however, it has made the global environment go from bad to worse. To overcome this issue, a concept of economic growth compatible with environmental protection emerged in the mid-20th century and subsequently in the late-20th century. It evolved into sustainable development (SD), supported by three pillars – the economy, environment and society – toward both the solution of globalized environmental issues and the elimination of various inequities in society. This concept has been discussed on various occasions, leading to the adoption of 17 Sustainable Development Goals (SDGs) by the United Nations in 2015 to provide clear guidance.

In the chemical industry, Responsible Care® (RC) was born in 1995 and subsequently established as a unique voluntary initiative of the chemical industry for the environment and safety. Discussions have taken place within the International Council of Chemical Associations (ICCA) about how the chemical industry should address sustainable development or sustainability as well as the relationship between RC and SD.

In January 2017, the Japan Chemical Industry Association (JCIA) established the Taskforce for Chemical Industry’s Contribution toward Sustainable Development Goals with a view to positively participating in related discussions in the ICCA as well as promoting the Japanese chemical industry’s contribution to SD through the redefinition of RC in the context of SD in order to guide its member companies toward it. The taskforce met five times and developed this report in May 2017 as the chemical industry’s visions toward contribution to SD. These visions, based on a review of the history of Japanese chemical industry, addresses how to take advantage of its own strengths and features in its efforts toward SD. The taskforce sincerely hopes that these visions will effectively serve the JCIA and its member companies as a guide to contribute to SD and will make efforts toward the achievement of SDGs as its guidance.



Figure 1 Sustainable Development Goals (SDGs)

## 1 History of the Japanese Chemical Industry in terms of “Sustainable Development”

The Japanese modern chemical industry has a history of more than 100 years. It goes without saying that industry was born and has been developed to enrich people. However, the global trend of thought toward industrial development had been changing until the concept of SD was born in the late-20th century. Along with this conceptual change, it is of great value in addressing SD to look back on the history of the Japanese chemical industry: how it contributed to the people’s lives, what kind of problems it faced then, and how these problems were solved.

Accordingly, this taskforce started its work with a chronological review of the Japanese chemical industry from its rise, through the economic growth after World War II and the solution of the associated problems, and to recent innovations through functional materials and the introduction and implementation of Responsible Care®.

### (1) Light and shadow of the Japanese chemical industry which supported post-war rebuilding and the rapid growth – From solely “economic growth” to “compatibility of economic growth with environmental protection”

#### Birth of the modern chemical industry in Japan

Japan’s modern chemical industry was born in the early 20th century after the rapid rise of chemical technologies in Europe and America, followed by the expanded production of articles such as dyes, artificial fibers, soda and fertilizers. It inevitably declined after World War II, but fertilizer production rapidly recovered due to the urgent increase of food production and artificial fiber production followed, which strongly supported the starving people in their efforts toward post-war rebuilding. In addition, from the 1950’s, the introduction of petrochemicals as a national policy led to a significant expansion of the chemical industry and resulted in the construction of many huge chemical complexes. As the “**industry of industries**”, various materials of the chemical industry, such as plastics, supported the development of entire Japanese industries and rapid growth, and eventually the drastic improvement of people’s lives.

#### Environmental pollution caused by too drastic development

On the other hand, too drastic development caused serious local issues with growing environmental pollution. From the late 1950’s to the early 1970’s, many local people, mainly residents in the vicinity of chemical plants, suffered from the “four big pollution diseases” caused by waste water and exhausted gases. There were also many cases of serious impact on the environment and people’s lives such as frequent process incidents at petrochemical complexes and marine contamination by crude oil. Thus the

chemical industry had to face harsh criticism from society and, as a consequence, significantly enforced regulations related to the environment and safety requiring tremendous compliance costs. To make matters worse, the Japanese chemical industry was hit by two oil crises in the early 1970's, leading to a drastic increase in raw materials and energy costs. In these circumstances, the Japanese chemical industry, located in a resource-poor country, had to fight for its very survival.

### **Toward the realization of energy-saving and clean processes, and the dramatic improvement of safety**

Given the above circumstances, the restructuring of the chemical industry, such as disposing of excess domestic facilities, was promoted under the supervision of the government, and the Japanese chemical industry went through hard times for several years. In order to survive under such circumstances, companies made tremendous and steady efforts and solved the problems they were facing by measures such as cost reduction by improvement of production technology, technological improvement of waste water and exhaust gas disposal for a better environment, and the pursuit of safer and more energy-saving production processes. Such efforts resulted in the realization of many energy-saving and clean processes and the dramatic improvement of safety, forming the basis for the further development of the Japanese chemical industry.

## **(2) Responsible Care ® to fulfill corporate social responsibility and tackle global issues – toward sustainable development**

### **Emerging global scale issues which triggered the concept of Responsible Care ®**

In the 1980's, the business of Japanese chemical companies was transformed to fine chemicals such as pharmaceutical and agricultural chemicals, dye and paint, cosmetics, and food additives, taking advantage of the combination of accumulated production technologies, the use of their own materials, and associated synthetic technologies. Meanwhile, the rapid development of the commodity chemical industry occurred in emerging countries as China and South-East Asian countries with the advantage of low cost competitiveness, and many major Japanese chemical companies built production sites for commodity chemicals in these emerging countries. From the 1990's, "fine" chemicals further evolved to "specialty chemicals" and the Japanese chemical industry created various **innovative high-value added materials** with novel functions suitable for modern industries such as electronics and automobiles.

Based on the combination of the aforementioned two features, i.e. the global expansion of commodity chemical production sites and innovation in the specialty chemical area, the Japanese chemical industry is now at a new stage of development as the third largest chemical industry in the world and also as the second largest industry

in Japan after the automotive and transportation industries. As mentioned above, the Japanese chemical industry also has world-leading production technologies in terms of environment, safety and energy-saving. However, the transition to “fine” or “specialty” chemicals led to the new issues listed below. These issues are no longer domestic ones within the vicinity of plant sites or in Japan but have become **global-scale issues** along with the globalization of Japanese chemical industry.

- As the varieties of chemical substances used have become more complicated and diverse, the impact of chemicals on safety and the environment throughout their entire lifecycle, including final products or wastes derived from or involving chemicals, has been a concern.
- As commodity chemicals have been produced in developing or emerging countries, there is another concern about the recurrence of similar environmental pollution and process incidents as occurred in Japan in the past. In particular Asia, where Japan is located, has more than half the production value of the whole world, so it is also crucially important in this regard.

### **Responsible Care® as the core of Corporate Social Responsibility**

Responsible Care® (RC) was born in Canada in 1985 against the background of the past serious impacts of the chemical industry on the environment and safety, such as pollution like the St. Clair River and Love Canal cases in the USA and the disaster in Bhopal, India which caused mass fatalities among local residents. RC was subsequently introduced in Japan in 1990 and, notwithstanding the fact that effective safety and environmental measures had already been implemented in Japanese chemical companies on the basis of regulatory compliance, it led to the following significant changes:

- Information disclosure to stakeholders was dramatically improved through dialogue with local residents, disclosure of performance indicators on the environment and safety in regular reports, etc.
- The concept of taking care of the entire lifecycle of chemicals led to efforts to ensure chemical product safety throughout the value chain and also significant achievements in the reduction and recycling of waste.

As a result, the concept of Corporate Social Responsibility (CSR) was born based on the idea that no company would be accepted by society without fulfilling its social responsibility as a “corporate citizen”. In the meantime, the United Nations started discussions about sustainable development (SD) from the environmental, social and economic perspectives. In 2006, the United Nations Environment Program (UNEP) and United Nations Global Compact jointly proposed the PRI Principles for Responsible

Investment as global common guidelines to reflect ESG challenges (Environment, Society and Governance) in the decision-making process of corporate investors within the scope of fiduciary responsibility. The Japanese chemical industry, having started RC implementation in advance and shared the concept of social responsibility, has regarded RC as a core initiative of the chemical industry in its efforts toward CSR and SD.

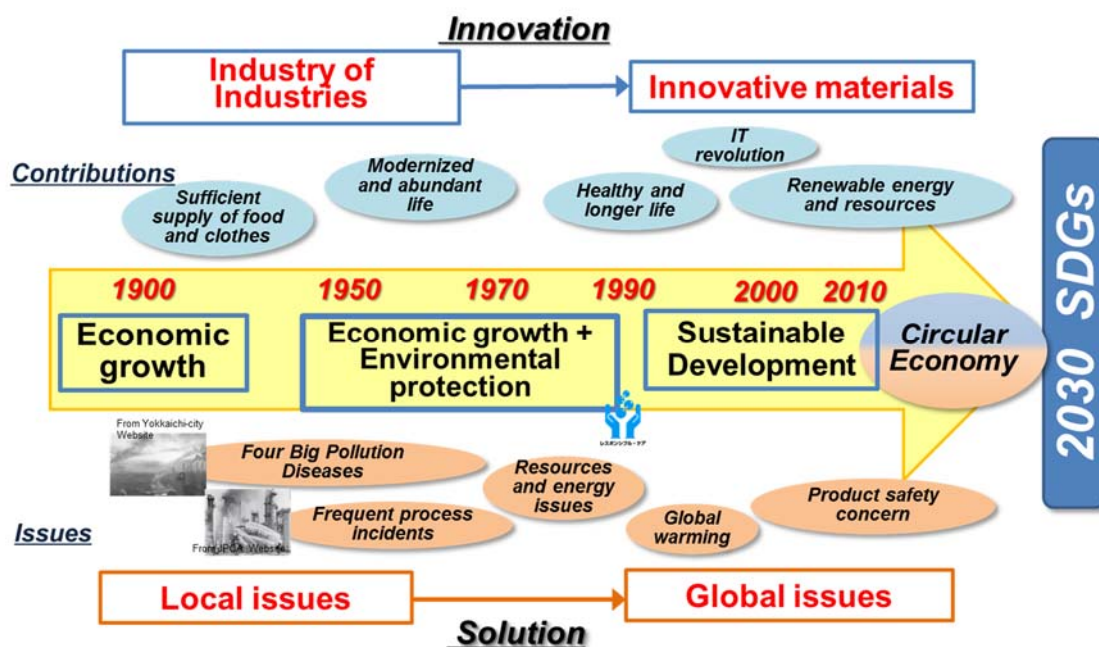


Figure 2: History of the Japanese Chemical Industry in terms of Sustainable Development

## 2 Sustainable Development Goals (SDGs) and Chemical Industry

As stated above, Sustainable Development Goals (SDGs) could serve as both guidance and milestones for addressing sustainable development. Therefore, in discussing efforts toward SD, it is essential to clarify the relationship between SDGs and the activities of the chemical industry.

### (1) Relationship between SDGs and chemical industry

As SDGs provide guidance for addressing SD, each company can highlight its own tangible contribution to SD by checking its business activities according to each SDG. Table 1 below shows the connection between each SDG and generalized examples of activities, technologies and products of the chemical industry. Table 1 also indicates that the chemical industry as a whole has something to do with every SDG.

Table 1: Illustrative examples showing the relationship between SDGs and the chemical industry

SDGs	Relevant activities of chemical industry
1. No Poverty	Contributing to the reduction of poverty and economic development along with global business expansion by job creation and development cooperation.
2. Zero Hunger	Contributing to increased food supply through increased agricultural production capacity with fertilizers and agrochemicals as well as to enable production in areas of agricultural difficulty by developing plant factory technologies.
3. Good Health and Well-being	Contributing to advanced medical technologies through medical equipment materials and pharmaceutical chemicals as well as prevention of health hazards by chemicals through Global Product Strategy.
4. Quality Education	Contributing to improvement of technical and professional skills of workers in emerging countries through education and training of skills.
5. Gender Equality	Making efforts, as part of CSR, towards gender equality and diversity, and contributing to improving the working infrastructure for women by supplying sanitary goods absorbents.
6. Clean Water and Sanitation	Contributing to cleanness of water through filters and adsorbents as well as fresh water supply in desert and remote islands through reverse osmosis filtering technologies. Contributing also to water saving by developing detergents requiring less water.
7. Affordable and Clean Energy	Contributing to development of renewable energy by supplying indispensable materials for secondary batteries, solar batteries and wind turbine systems as well as to energy saving not only by developing energy-saving production processes but also by supplying energy-saving materials such as LED-related materials, lightweight materials and insulators.
8. Decent Work and Economic Growth	Contributing to consistent job creation of local community where plants are located, including emerging countries, through global expansion, and promoting a safe and secure working environment through RC- and EHS-related activities.
9. Industry, Innovation and Infrastructure	Supplying various materials for infrastructure such as materials for construction and transportation. Supporting innovation of all industries through innovative functional materials, and contributing to communications and infrastructure through materials such as touch screens and optical fiber.
10. Reduced Inequalities	Creating jobs in emerging countries along with global business expansion.
11. Sustainable Cities and Communities	Contributing to the improvement of safety and environment through Responsible Care such as process safety, clean air management and waste management, and contributing to building resilient cities against disasters through materials such as rubber for earthquake-proof buildings and to safe transportation through safety devices such as automotive air-bags.
12. Responsible Consumption and Production	Regarding this goal, Responsible Care as a whole is relevant including chemicals management throughout their lifecycle by SAICM and GPS, development of environmental-friendly and energy-saving processes through functional materials and process technologies, and reduction of waste through development of reuse and recycle technologies.
13. Climate Action	As countermeasures against global warming, "commitment to a low carbon society" was established and research on innovation toward a low carbon society is ongoing in JCIA's long-term strategy working group. The chemical industry is also addressing the issue of coal-fired power generation toward power supply with low CO2 emissions.
14. Life below Water	Addressing sea water contamination by plastics through development of biodegradable or functional materials, and contributing to the preservation of fishery resources through the supply of aquaculture materials.
15. Life on Land	Addressing biodiversity by taking care of the environment in the surroundings of plants; contributing to the preservation of the land environment through measures such as the development of anti-desertification materials.
16. Peace, Justice and Strong Institutions	Complying with regulations and corporate ethics, including efforts on the environment and safety beyond regulations through CSR and RC with transparency.
17. Partnerships for the Goals	Contributing to the dissemination of RC and improvement in environmental and safety in emerging countries through capacity building.



## **(2) Relationship among chemical business activities, RC and CSR in light of SDGs**

It may be worth examining the business management activities of the chemical industry in the light of SDGs. The Venn diagram in the middle of Figure 3 below shows a rough classification of each SDG into three categories corresponding to the three pillars of SD, i.e. economy, environment and society. Although each goal involves at least either economic, environmental or social aspects, it is difficult to make a straightforward classification due to the complicated relationship among the three pillars. Nevertheless, this attempt at classification revealed that the three circles in the Venn diagram overlap substantially with each other. (See Figure 3)

Among the business management activities of the chemical industry, innovation and global business expansion support the future economic development and growth of each company and are thus closely relevant to the “economy” pillar of SD. However, modern innovation, as will be discussed later, very often addresses energy and resource saving, and is thus also relevant to the “environment” pillar of SD. Global business expansion also has “social” aspects as it contributes to the development of emerging countries. The main activities supporting social responsibility (“society” pillar) and safety / environment (“environment” pillar) of each company are CSR and RC (including GPS) respectively. However, CSR relates to “environment” through RC, and RC involves contribution to SD through innovation as stated in Chapter 6 of the RC Global Charter.

Therefore, addressing SDGs **never** means starting brand-new “SDGs activities” from scratch but rather means contributing to the achievement of SDGs of various aspects through the **integration** of activities toward economic growth, such as innovation and global business expansion, and those supporting the foundation of a company, such as RC (GPS) and CSR, **in light of SDGs**. In other words, **RC and CSR are not only core activities for fulfilling the social responsibility of a company but can also evolve into foundation activities for the realization of a sustainable society or the achievement of SDGs when integrated with those toward economic growth.** (See Figure 3)



Figure 3: Conceptual diagram of relationship between business activities of the chemical industry and SDGs

### 3 Strengths of the Japanese Chemical Industry from the Sustainable Development Perspective

In the previous chapter, it was concluded that the chemical industry could contribute to all the SDGs but, in doing so, it is necessary to integrate activities toward economic growth and those supporting foundations into business management, since SDGs involve intertwined aspects of “economy”, “environment” and “society”. In order to make a further contribution to SD through such efforts, the taskforce first identified strengths of the Japanese chemical industry based on the results of the chronological review outlined in Chapter 1 above to establish the visions thereon.

As illustrated in Figure 2 of Chapter 1, the taskforce conducted this study both from the “innovation” perspective (upper part of the figure) and the “solution” perspective (lower part).

#### (1) Innovative technologies and products (innovation perspective)

The Japanese chemical industry has gained competitiveness through customer-oriented marketing and R&D capacity to respond to customer requirements. The Japanese automotive, machinery and electronic industries have achieved world-class

technologies since the high-growth period, and the chemical industry, responding to the strict requirements of these industries, has consistently created new functional materials, contributing to the innovation of whole industries. Such innovative technologies and products are already contributing to the improvement of sustainability in various areas. Typical examples are:

< Catalysts >

- Catalysts for energy-saving, resource-saving and clean processes
- Catalysts for a cleaner environment such as those for automobile exhaust gas

< Functional separation media >

- Adsorbents for cleanup of exhaust gas and waste water
- UF/ RO membranes for water purification and desalination
- Energy-saving processes using cutting-edge technologies such as catalysts and membranes

<Transportation and infrastructure>

- Light and strong materials such as carbon fibers and engineering plastics that contribute to significant improvement of fuel consumption of vehicles
- Safety devices such as air-bag inflators contributing to safety of occupants
- Durable materials contributing to longer-life houses and equipment
- Insulation materials contributing to energy-saving houses

<Electricity and electronics>

- Functional materials contributing to significant power-saving such as those for LED and flat-panel TVs
- Materials contributing to development of new renewable energy such as those for solar batteries
- Materials contributing to communications infrastructure such as plastic optical fiber and touch screens

<Consumer goods>

- Water-saving detergents contributing to water-saving and reduction of environmental burden in peoples' lives

<Pharmaceuticals and medical devices>

- Development of new drugs for eradication of diseases
- Supply of pharmaceutical ingredients and intermediates through advanced technologies in biochemistry, refined synthesis and advanced separation by functional materials
- Functional materials for medical diagnostic devices and drug delivery systems contributing to the advancement of medical technology

#### <Foods>

- Effective and safe fertilizers and agrichemicals
- Materials for greening of deserts
- Plant factories

#### <Recycling of waste>

- Recovery of resources and energy from waste plastics that contributes to resource-saving and reduction of environmental burden

## **(2) Excellence as a solution provider (solution perspective)**

Another strength of the Japanese chemical industry comes from its accumulated experience in solving various problems in the past. As mentioned in Chapter 1 above, the Japanese chemical industry, being located in a dense population, had to face environmental and safety problems at the early stage of development. Furthermore, the lack of domestic natural resources in Japan led to immediate issues of raw materials and energy costs when the oil crisis occurred. However, the Japanese chemical industry gained major strengths as a solution provider in the course of overcoming such issues. Typical examples are:

#### < Environmental solutions >

- Clean processes: Development of resource-saving and low-emission processes through improvement of catalysts and processes themselves and reduction of environmental burden through improved technologies for exhaust gas and waste water disposal  
(VOC emission (2015): 70% reduction compared to 2000)
- Energy-saving processes: Energy saving through heat recovery technologies, high-efficiency boilers and process improvement  
(World class energy efficiency according to 2012 IEA data)
- Waste reduction through recycling  
(Landfill volume (2015): 72% reduction compared to 2000)

#### <Environment and safety related activities>

- High-level human resources including trained operators and safety culture through full participation of employees in safety activities  
(World class low injury rate)
- Dialogue with stakeholders and chemical product stewardship as RC related activities
- Dialogue with local communities and consumers
- JIPS (Japan Initiative of Product Stewardship) as GPS initiative in Japan

## 4. Japanese Chemical Industry's Visions toward "Sustainable Development"

Based on the above studies, the taskforce created future visions, in which the Japanese chemical industry is contributing to SD taking advantage of its experiences and strengths. The taskforce also outlined basic principles toward realization of the visions as follows.

### (1) Basic principles in addressing sustainable development

#### **Believe in the unlimited potential of chemicals**

The chemical industry is an industry creating new substances through the power of chemistry. The chemical industry has a quite unique feature among manufacturing industries in that it is not named after "products" of the industry but after chemical processes for manufacturing. Therefore, it is not too much to say that the chemical industry's potential, unlike any other industry, is unlimited. In fact, in the areas of machinery and electronics, many products have gone off the market due to discontinuous innovation and social evolution. On the contrary, modern innovative materials have their own functionality, making the chemical industry indispensable for contributing to SD through innovation.

Those engaged in the chemical industry should take pride in playing a leading role in the achievement of SDGs, believe in the unlimited potential of chemicals, and consistently take up the challenges of innovation.

#### **From Responsibility to Responsible Contribution**

In future sustainable development, many new substances will be created, but the handling of chemicals always involves risks. Therefore, necessary measures must be taken throughout the entire lifecycle of chemicals so that no incidents or environmental pollution occur in the manufacturing processes and no products containing chemicals harm the health of the humans and animals using them. Responsible Care® has focused on such negative impacts of chemical industry and made efforts to minimize them.

Despite such efforts and their contribution to SD including the resolution of environmental issues even outside its business activities, such as automotive exhaust gas treatment and water cleanup, the chemical industry is more often looked at with concern about chemical hazards. This is possibly because society does not seem to share the view that the benefits of chemicals are worth their risks. RC has so far been the guiding initiative for fulfilling corporate social responsibility in terms of the environment, health and safety in business activities, but not a tool for communicating chemical industry's contribution to outside stakeholders. However, although this has not

become common in Japan, Western investors have given weight not only to financial information but also to non-financial measures such as ESG (Environment, Society and Governance) in making decisions.

The background to this thinking is that, since ESG is directly connected to sustainable growth and the mid- to long-term revenue of a company, RC should address not only the fulfillment of corporate social responsibility but also aspects of positive contribution. To this end, disclosure of comprehensive information on the benefits of chemicals along with the risks as well as the possibility of the chemical industry's contribution to SD to stakeholders supporting corporate management such as investors is not only a part of accountability but also leads to an understanding of the value of the chemical industry.

Another aspect of contribution by the Japanese chemical industry is to drive the improvement of RC implementation in emerging countries by handing down environment and safety related activities in Japan to them. Currently, Asia accounts for about 60% of the world's population and more than half of the world's production of chemicals. Many huge commodity chemicals plants are located in Asia as a result of the economic development of emerging countries. Furthermore, more than 70% of Japan's chemical export value is to Asia and many Japanese companies have their affiliates in China and Southeast Asia. In order not to repeat the bitter history of the Japanese chemical industry, such as pollution and serious process incidents, Japanese chemical companies can convey their experiences of facing and solving such issues, from both the technical and management aspects, to their affiliates in Asian countries, implement the conveyed solutions there, and disseminate them to the whole chemical industry where they are located through local associations. In this way the Japanese chemical industry can make a positive contribution to the improvement of the world's sustainability.

### **From Reactive to Proactive**

As described above, the chemical industry has created innovations and materials by closely communicating with customers and responding to their stringent requirements. However, such contributions are not widely recognized by society except at some Business-to-Customer companies. This is because innovations in chemical companies, particularly in Business-to-Business companies, are motivated by providing solutions to visible issues in their business customers, which means that the outcome will not be attributed to chemical companies but to their customers. Therefore, the chemical industry should not just respond to customers' requirements and current issues but aim to proactively envisage future issues that will be faced in the course of achieving sustainable development and a circular society, and to positively take the lead in solving such issues through materials using the unlimited potential of chemistry.

It goes without saying that such a "proactive" contribution can only be realized if all stakeholders, from business customers to consumers, accept the value of sustainable

development, understand the chemical industry's contribution to it, and accept the value of SD-oriented products.

## **(2) Visions and actions toward sustainable development**

### **Vision 1 We CREATE INNOVATION through the power of chemistry and contribute to the healthy and abundant life of people**

#### **Actions for Vision 1**

1. Take the initiative in innovation, as a solution provider, for the realization of a sustainable society through materials and substances in cooperation with the entire value chain.
2. Work more closely with stakeholders leading innovation such as the government or universities, aim at creating yet-to-be-realized breakthrough innovation as well as that which leads to evolution of the entire society (e.g., Super Smart Society).
3. Not just continuously improving our production processes, aim to realize ultimate energy and resource saving and zero emission processes.

### **Vision 2 We SUPPORT WORLDWIDE INITIATIVES for solving environmental and safety issues**

#### **Actions for Vision 2 (particularly in Asia)**

1. Building on the experience of the Japanese chemical industry, support environment and safety related activities in production by supporting overseas subsidiaries of Japanese companies and overseas chemical industry associations.
2. Disseminate the Responsible Care® concept to emerging countries.
3. Communicate information on the proper use and risks of chemicals worldwide so that chemical products are properly used and contribute to the abundant life of people.

### **Vision 3 We PROMOTE CONTRIBUTION of the chemical industry through DIALOGUE with STAKEHOLDERS**

#### **Actions for Vision 3**

1. Communicate precise risk information of chemicals to entire value chain to share proper use of them.
2. Share the value of sustainability-conscious products such as environmental protection and waste reduction with stakeholders and reflect it in product development.
3. Promote investment to the environment, society and governance by obtaining the understanding of investors through dialogue about the contribution of the chemical industry to sustainable development and its unlimited future potential.

## Conclusion: Toward the Future

As mentioned in the Introduction, the aim of this document is to be a guide for the JCIA and its member companies in addressing sustainable development and sustainable development goals by redefining relationship among Responsible Care®, Corporate Social Responsibility, and SDGs.

It should be stressed again that “addressing SD and SDGs” will **never constitute additional new activities** named “SD” or “SDGs” on current business, environment, safety and quality related activities but will merely integrate activities supporting the foundations of a company, such as RC, and those toward economic growth, such as innovation and global business expansion as a business strategy of the company. This means that **contributions to SDGs can drive the further growth** of a company.

It is desirable that the Japanese chemical industry should not only look back on its history and fulfill its social responsibility but also be strongly aware of its potential to significantly contribute to sustainable development. Each company should consider which items of SDGs it can contribute to within its business activities and realize growth driven by this contribution, which will lead to a significant role of the chemical industry in contributing to sustainable development.

General practices in addressing SDGs has already been outlined in SDG Compass, ([http://sdgcompass.org/wp-content/uploads/2016/04/SDG\\_Compass\\_Japanese.pdf](http://sdgcompass.org/wp-content/uploads/2016/04/SDG_Compass_Japanese.pdf)) thus JCIA will support its member companies as well as deliver its messages to stakeholders representing the chemical industry through the following activities.

1. Share best practices in addressing SD through a showcase document.
2. Communicate the chemical industry's efforts on SD to stakeholders through JCIA programs for their recognition of value of chemical industry's contribution. (Make use of the following programs as appropriate.)
  - RC member exchange meetings, workshops and report meetings
  - RC local dialogue and consumer dialogue meetings
  - Public relations programs (business papers, newspapers, JCIA web page and annual reports, etc.)
  - Capacity building-related programs (RC overseas support WC, RCIP (RC integrated program), ICCA Capacity building
  - Chemicals management related programs (BIGDr, SCRUM, chemSHERPA)
  - WG on studying long-term strategy against global warming
3. Share the government principles with member companies and take action as necessary.

The taskforce strongly hopes that this document will help JCIA member companies in further addressing sustainable development, which will lead to the understanding of society about their efforts and eventually to the advancement of the chemical industry.



## Appendix List of taskforce members and meeting dates

### List of taskforce members

**Chair** : Sohei Morita (Councilor, Mitsui Chemicals, Inc., ICCA-RCLG Vice-chair)

**Advisor**: Masahiko Hirao (Professor, Department of Chemical System Engineering, the University of Tokyo)

#### **Members**

##### ***Kao Corporation***

Koichi Yanagita (General Manager, Corporate Sustainability)

Haruo Hatanaka (Vice President, Sustainability Planning Group, Corporate Strategy)

##### **Showa Denko K.K.**

Hiromi Hashimoto (Environment & Safety Office, CSR Department)

Hitoshi Iwade (Corporate Fellow, General Manager, CSR Department)

##### **Sumitomo Chemical Co, Ltd.**

Mitsuaki Komoto (Deputy General Manager, Energy & Climate Change, Responsible Care Department)

Kanako Fukuda (General Manager, CSR Office)

##### **Mitsui Chemicals, inc.**

Tomoko Mihashi (Manager, Responsible Care Department, Responsible Care & Quality Assurance Division)

##### **Mitsubishi Chemical Holdings Corporation**

Mina Kanda (Group Manager, KAITEKI Group, Corporate Strategy)

Jun Okumura (Manager, KAITEKI Group, Corporate Strategy)

##### **JCIA Secretariat**

Yutaka Haruyama (Executive Director)

Shigeki Hiraoka (General Manager, Responsible Care Department)

Junji Takase (General Manager, Responsible Care Department)

Satoshi Tokushige (General Manager, Chemicals Management Department)

Kazukuni Saito (General Manager, Chemicals Management Department)

Kazuyuki Akita (General Manager, Responsible Care Department, Environment & Safety Department)

### Meeting Dates

#1: January 24, 2017    #2: February 16, 2017    #3: March 10, 2017

#4: April 13, 2017    #5: May 10, 2017