

# Japanese Chemical Fiber Industry's Sustainability Initiatives

Kenichi Tomiyoshi  
Executive Vice President  
Japan Chemical Fibers Association



1. Japan's sustainability policy
2. Sustainability Initiatives of JCFA
3. Outline of the 13<sup>th</sup> ACFIF(Asian Chemical Fibers Industries Federation) Conference
4. Conclusion



# 1. Japan's sustainability policies

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## 1-1 Recent Japan's sustainability policies

<b>Carbon Neutral</b>	<b>October 2020</b> <b>“2050 Carbon Neutral Declaration”</b>
<b>Circular Economy</b>	<b>May 2020</b> <b>Circular Economy Vision 2020 (METI)</b> <b>June 2021</b> <b>“Act on Promotion of Resource Circulation for Plastics” was promulgated.</b> <b>(April 2022 Effectuation )</b>
<b>Business and Human Rights (Due Diligence)</b>	<b>October 2020</b> <b>Launch of Japan’s National Action Plan on Business and Human Rights (2020-2025)</b> <b>Summer 2022 (P)</b> <b>Due Diligence Guideline will be published</b>

## 1-2 Recent Japan's sustainability policies relating textile industries

- May 2020 Circular Economy Vision 2020 (METI)
- Apr 2021 “Task Force on Fashion and Environment” (MOE)
- Jul 2021 “Study Group on Sustainability in the Textile Industry” (METI)



- Aug 2021 Japan Sustainable Fashion Alliance was established.
- May 2022, “Vision on textile industries” and “Roadmap for the technology development in the textile sectors” were published
- July 2022(P) Business conduct guidelines for the textile industry will be published by Japan Textile Federation, in cooperation with ILO



# 1-3 Key points of “Study Group on Sustainability in the Textile Industry” (July 12<sup>th</sup>, 2021 by METI)

## •Environmental Consideration

- (1) Formulating guidelines on Design for Environment
- (2) Constructing collection systems
- (3) Reforming consumer cooperation

## •Responsible Supply Chain Management

- (1) Implementing due diligence
- (2) Developing a suitable environment for obtaining international textile certifications
- (3) Accommodating technical intern trainees

## •Gender Equality

- (1) Establishing public-private sector round tables
- (2) Presenting role models for younger generations

## •Supply Structure

- (1) Utilizing digital technology
- (2) Promoting customer-centered business development
- (3) Reforming the production processes

## •Digitalization

- (1) Promoting understanding among management echelons
- (2) Expanding best practices
- (3) Spreading awareness of support measures



# 1-4 Key points of “Vision on textile industries” (May 2022 by METI)

- In light of the significant structural changes in Japan and overseas, such as the composition of the population and the market size, a Vision for the textile industry is presented in 2030.
- Japan's future textile policy will focus on three strategic areas and two cross-sectional areas.

Strategic Policy 1	Creating New Business Models
Strategic Policy 2	Expanding new markets through overseas expansion
Strategic Policy 3	Market creation through technological development
Cross-sectional Policy 1	Promoting Sustainability
Cross-sectional Policy 2	Accelerating Digitization



## 1-5 Key Points of Roadmap for the technology development in the textile sectors

● Based on the current status of the technologies in Japan's textile industry, Roadmap for the technology development was published targeting the following fields.

- (1) Materials revolution
- (2) Sustainability
- (3) Expanding applications
- (4) Healthcare

● In consideration of the future R & D projects, individual technology roadmap is also presented as the following five technologies as examples.

- (1) Development of technologies and services for social implementation of **smart textiles**
- (2) Construction of manufacturing system using **human interface**
- (3) Development of **bio-based fibers**
- (4) Practical application of **supercritical CO2 technology for water-free textile dyeing**
- (5) Practical application of **fiber-to-fiber recycling technology**



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## 2-1 JCFA Medium-Term Activity Policy 2025

### Priority themes

1. Promoting **sustainability activities**
2. Maintaining and strengthening competitiveness
3. Expanding publicity initiatives



## 2-2 Report of JCFA's "WG on Sustainability"

### JCFA's sustainability policies

(published in July 2021)

Priority issues

1. **PET recycling system**
2. **"Fiber-to-fiber" recycling system**
3. **Bio-based chemical fibers**
4. **Response to micro plastic (fiber fragment) issues**

### JCFA's work for carbon neutral

(published in October 2021)

1. To contribute to the Paris Agreement, and "2050 Carbon Neutral Declaration"
2. To take actions for "expansion of recycled fibers/bio-based fibers," "energy saving/digital transformation," and "expansion of eco-friendly products"



## 2-3 Expansion of PET recycling system

### Key Point

- Stable procurement of high-quality PET bottles
- Development of technology and applications
- Visualization of environmental impact such as the mixture ratio of recycled materials (creating a labeling or certification system)
- Designing PET bottles to be easily recycled
- Raising awareness among users and consumers about absorbing increases in costs for recycled products

### PET recycling indicators in Japan in 2020

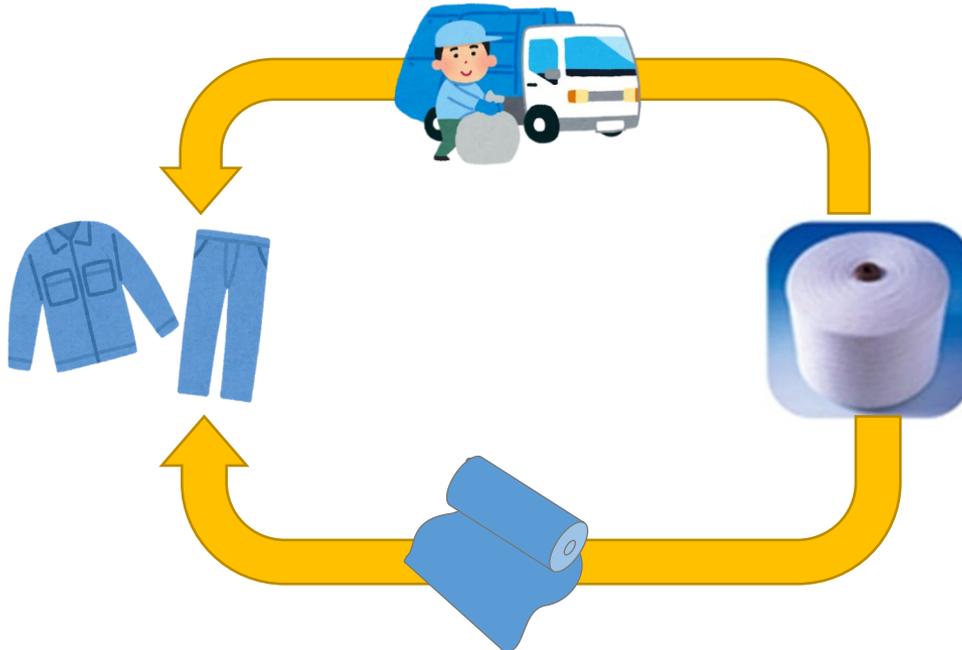
<b>Collecting ratio of PET bottles</b>	<b>97%</b>
<b>Recycling ratio of collected PET bottles</b>	<b>89%</b>
<b>Share of final application of Re-PET</b>	<b>100%</b>
<b>Bottle to bottle</b>	<b>(30%)</b>
<b>Textiles</b>	<b>(18%)</b>
<b>Others</b> <input type="checkbox"/> <b>sheets, molded items</b> <input type="checkbox"/>	<b>(41%)</b>
<b>Export</b>	<b>(11%)</b>



## 2-4 “fiber to fiber” recycling system

### Key point

- Development of easy-to-recycle textile products
- Difficulties in building a collection system
- Need for the improvement of legal infrastructure
- Need for the development of recycling technology
- Costs (mechanism to bear costs including imported products)



## 2-5 Bio-based chemical fibers

### Key Point

- Standardization and certification for bio-based fibers
- Establishment of traceability method for the mixture ratio of bio-based components
- Expansion of the “Green market”

### Bio-based chemical fibers

	Plant-derived raw materials	Fossil resources
Biodegradable	<ul style="list-style-type: none"> <li>☐ PLA, microbial polyesters, polyamino acids (artificial), etc.</li> <li>☐ Polymers utilizing natural resource (cellulose, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>☐ Aliphatic polyester, aliphatic/aromatic polyester, polyvinyl alcohol, etc.</li> </ul>
Non-biodegradable	<ul style="list-style-type: none"> <li>☐ Bio-PET, PTT, bio-nylon (PA 11 and others), bio-polypropylene, etc.</li> </ul>	<ul style="list-style-type: none"> <li>☐ Polyester, nylon, acrylic, polypropylene, etc.</li> </ul>



## 2-6 Fiber Fragment issues

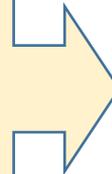
### Key Point

- Collection of scientific knowledge
- Development of ISO test method and its data accumulation
- Activities to label products that are prone to generating fragments and to promote countermeasures such as recommending use of washing nets
- Information exchange and strengthening of cooperation with Global and Asian chemical fiber industries

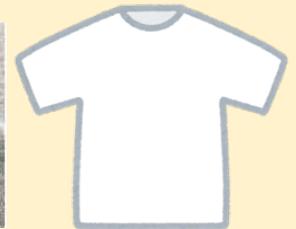


**To obtain scientific knowledge**

- (1) Runoff routes**
- (2) Amount in the ocean**
- (3) Impact on ecosystems**



**Standardization of  
test method**



**Development of textile  
products with less release  
of fiber fragments**



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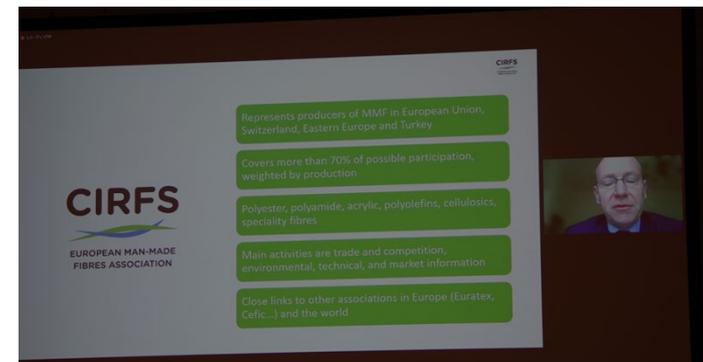


ASIAN CHEMICAL FIBER INDUSTRIES FEDERATION



# 3-1 The 13th ACFIF(Asian Chemical Fibers Industries Federation) Conference hosted by JCFA

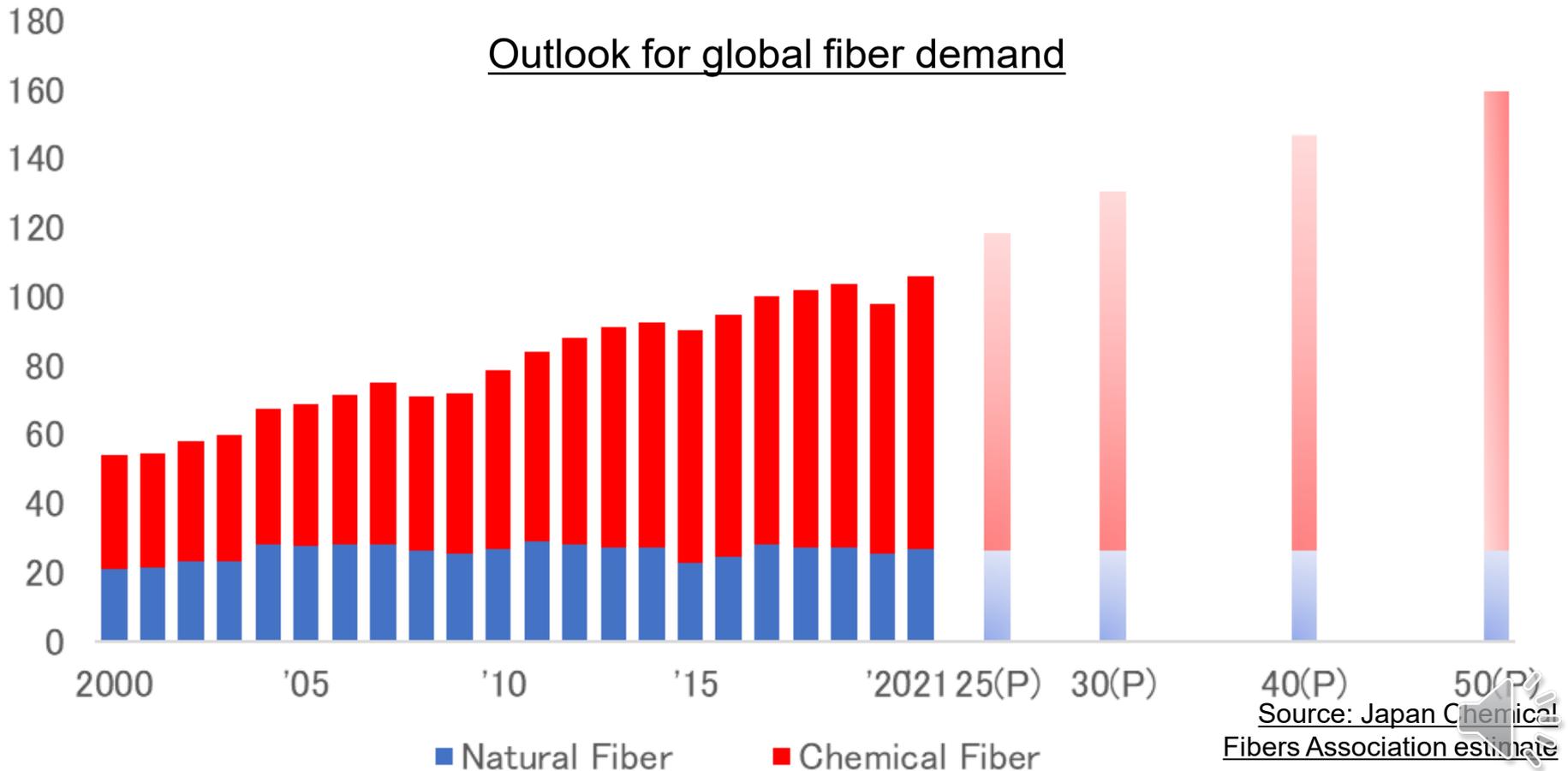
- (1) Date and time: April 14 -15, 2022
- (2) ACFIF 9 members : China, India, Indonesia, Korea, Malaysia, Pakistan, Chinese Taipei, Thailand and Japan
- (3) Conference theme:  
“Chemical fiber industry in Asia supporting the realization of a sustainable society”
- (4) Joint Communiqué of the Conference  
( [https://www.jcfa.gr.jp/news\\_e\\_post/news\\_e/news\\_e-2131/](https://www.jcfa.gr.jp/news_e_post/news_e/news_e-2131/) )



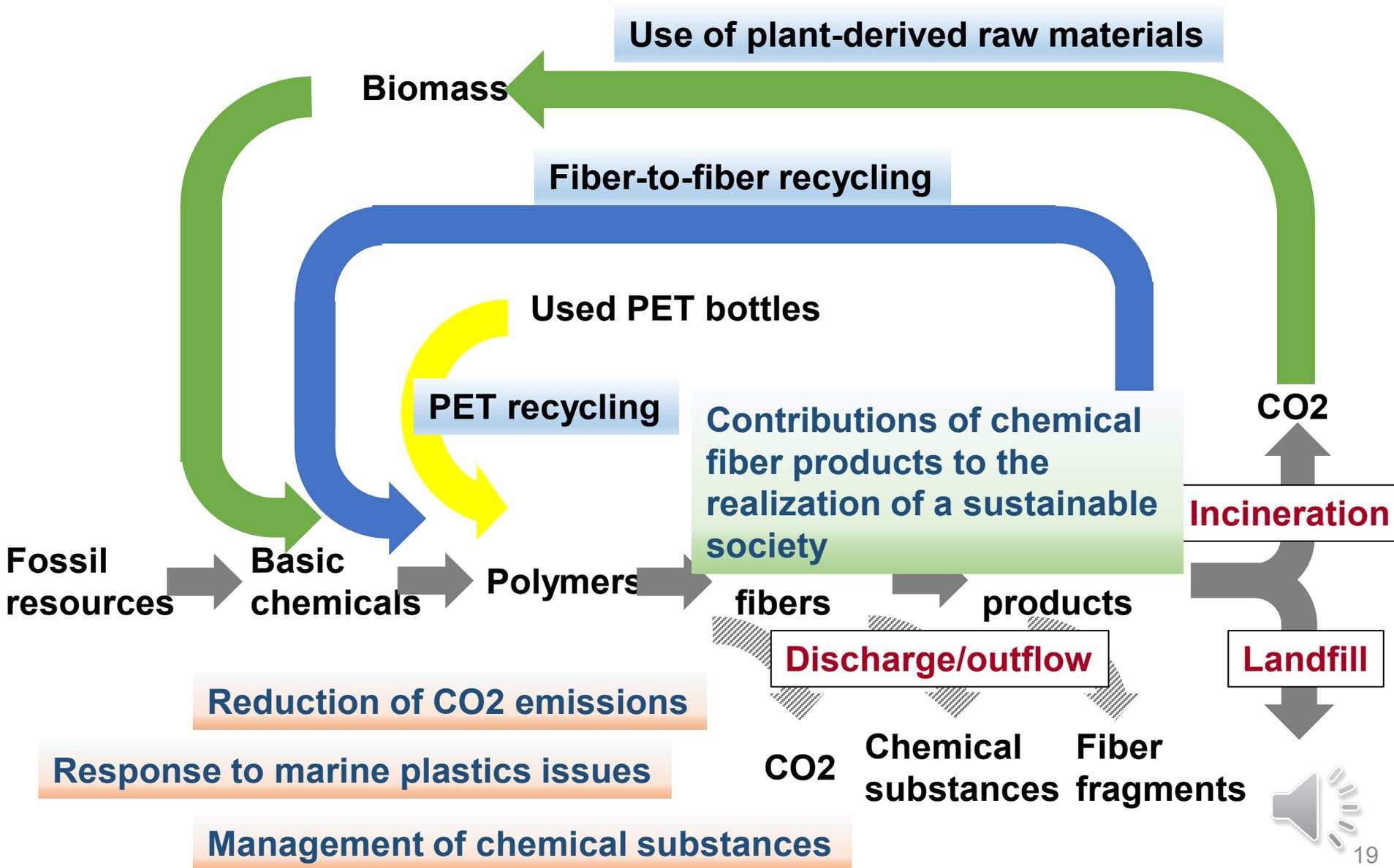
## 3-2 Global fiber supply and demand

- Global fiber demand will continue to grow in the middle term
- Chemical fibers will support the growth of fiber demand
- Roughly 90% of the world's chemical fiber production is in Asia
- Asian chemical fiber industry has a role and responsibility for sustainability of global chemical fiber industries

(million tons)



### 3-3 Challenges facing the Asian chemical fiber industry



## 3-4 Examples of new challenges identified by ACFIF members

Realization of resource circulation	PET recycling	<ul style="list-style-type: none"> <li>• Build a high-quality PET bottle collection system</li> <li>• Improve reputation among consumers</li> </ul>
	Fiber-to-fiber recycling	<ul style="list-style-type: none"> <li>• Develop technologies / reduce cost</li> <li>• Build a waste separation and collection system</li> </ul>
	Use of plant-derived raw materials (Bio-based fibers)	<ul style="list-style-type: none"> <li>• Establish an evaluation method / certification system</li> <li>• Equal quality and cost to petrochemical-based products</li> </ul>
Reduction of environmental burden	Reduction of CO2 emissions	<ul style="list-style-type: none"> <li>• Make production processes more energy efficient / develop eco-friendly materials</li> <li>• Establish emission calculation methods and related standards/labels</li> </ul>
	Response to the problem of marine plastic pollution	<ul style="list-style-type: none"> <li>• Consider measures involving related industries</li> <li>• Communicate correct information to consumers</li> </ul>
	Chemical substance management	<ul style="list-style-type: none"> <li>• Develop alternative substances that comply with regulation trends and have the same quality and cost as existing products</li> </ul>
	Challenges to be addressed by the textile supply chain as a whole	<ul style="list-style-type: none"> <li>• Efforts to resolve the issue of mass clothes disposal using digital technology and to develop dyeing technologies that do not use water</li> <li>• Due diligence efforts</li> </ul>
Contribution to a sustainable society	Contributions in the post-Covid era	<ul style="list-style-type: none"> <li>• Establish an evaluation method regarding PPE functionality and safety</li> </ul>
	Promotion of standardization activities	<ul style="list-style-type: none"> <li>• Promote standardization activities that are mindful of sustainability</li> </ul>



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## 4 Conclusion

- The roles and responsibilities of the Asian chemical fiber industry including Japan is important to contribute to the realization of a sustainable society.
- ACFIF strengthens its efforts to address sustainability issues by sharing information and strengthening cooperation.
- The Asian and Japan chemical fiber industry expect strengthening cooperation with the European textile industry, which is leading in the field of sustainability.



# Thank you

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