PFAS and EEE Specialist equipment

Participants:

[redacted] (JBCE [redacted])

[redacted] (JBCE [redacted])

[redacted] (JBCE [redacted])

[redacted] (JEMIMA)

[redacted] (JAIMA)

23rd June 2023

Agenda

- Introduction of associations
- Characteristics of spcialist equipment
- PFAS in spcialist equipment

Introduction of the associations

Who is JBCE

- Created in 1999, **JBCE (Japan Business Council in Europe)** is a leading European organisation representing the interests of **100 multinational companies of Japanese parentage active in Europe.**
- We work closely with the EU Institutions to strengthen both the political and trade relationship between the EU and Japan and to develop a policy framework that supports fruitful and responsible business conduct.
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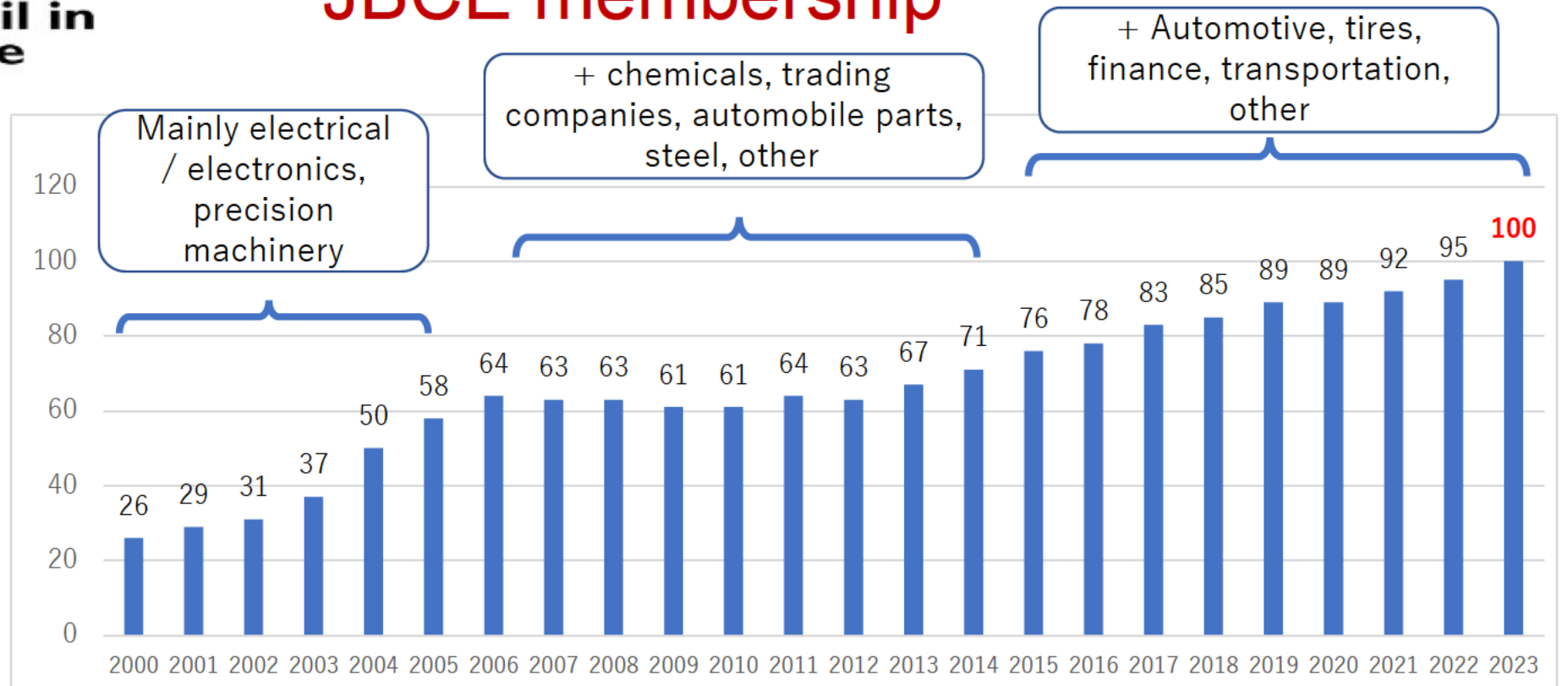
- **Building a new era of cooperation between the European Union (EU) and Japan** is the core of our activities, which we perform under several **committees focusing on**: **Corporate Policy, Corporate Social Responsibility, Digital Innovation, Environment & Energy, Standards and Conformity, and Trade.**

Mission of JBCE

- **Build a bridge between Japan and the EU**, enhancing Europe's understanding of Japanese companies and their contribution to the European economy
- Contribute to EU public policy **by sharing our members' expertise** with decision-makers **across sectors**
- **Promote a favorable and predictable environment** in which Japanese companies of all sectors can compete for sustainable growth in Europe

JBCE membership



WEEE
RoHS Directive
REACH Regulations
Eco Design Energy Label
CSR/RBC
Circular Economy
Japan-EU EPA
Brexit
Digital Policies
Climate

As we have been expanding our activity area from WEEE to RoHS, REACH, CSR/RBC, Trade, Digital and Circular Economy, JBCE becomes a horizontal association representing Japanese wide-range business sectors.

Sector of JBCE members

Machinery
Kobelco Eco-Solutions
Komatsu Europe International
Kubota
Kurita
Mitsubishi Heavy Industries Europe
Yanmar Europe

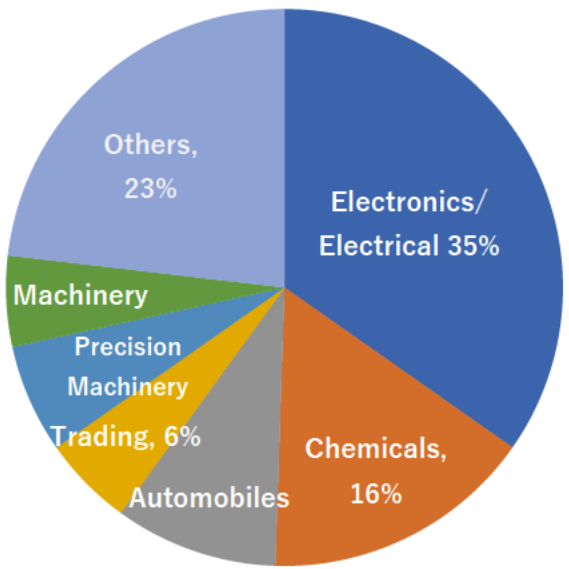
Precision Machinery
Citizen Watch
Ishida
Nikon Precision Europe
Olympus
Shimadzu Europa

Trading
Itochu
Marubeni Europe
Marubeni Itochu Steel
Mitsubishi Corporation International
Mitsui & Co. Benelux
Nagase (Europa)
Orix
Sumitomo Corporation Europe

Automobiles
Aisin Europe
Denso Europe
Honda Motor Europe
Kawasaki Motors Europe
Mitsubishi Motors Europe
Nissan Motor Manufacturing (UK)
Belgian Branch
Shimano Europe Holding
Subaru
Toyota Motor Europe

Others
(Financials, Metals & Non-Metals, Glass & Ceramics, Textiles, Pharmaceuticals, Rubber, Oil etc.)

Ajinomoto
AGC Europe
Bridgestone Europe
Fuji Europe Africa
Idemitsu
IWATANI
JQA
JTI
JX Nippon Mining and Metals
Kyowa Hakko Europe
Mitsubishi Materials
Mizuho Bank
NGK Berylco France
Nippon Sheet Glass
Nippon Steel & Sumitomo Metal Corp. (Eur)
SCAS Europe
Sumitomo Rubber industries
Sumitomo Mitsui Banking Corp.
Teijin Holdings Netherlands
Toray Industries Europe
Tosoh europe
TOTO
Toyota Gosei
Yamaha Music Europe



Chemicals
ADEKA
Asahi Kasei
FUJIFILM Europe
Hebron
Kaneka
Kuraray
Mitsubishi Chemical
Mitsui Chemicals
NEOS
Nichia
Nitto
Resonac Europe
Sekisui Chemical
Sumitomo Chemical EU
Tayca
Zeon

Electronics / Electrical
Azbil
Brother International Europe
Canon Europa
Casio Europe
Chino
Daikin Europe
Epson Europe
Fuji Electric Europe
Fujitsu General (Euro)
Fujitsu
Hamamatsu Photonics
Hitachi Europe
Horiba
JEOL
JVC KENWOOD
Keyence
Konica Minolta Europe
KYOCERA Document Solutions
Mitsubishi Electric Europe
Murata Electronics Europe
NEC Europe
Omron Europe
Panasonic Europe
Pioneer Europe
Ricoh Europe
Screen
Sony Europe
TDK Electronics Europe
Tokyo Electron
Toshiba of Europe
YASKAWA Europe
Yokogawa Europe

Sector classification based on the registration to TSE (Tokyo Stock Exchange)

Introduction of Coalition of Cat.8&9

- JAIMA (The Japan Analytical Instruments Manufacturers' Association)
- JEMIMA (Japan Electric Measuring Instruments Manufacturers' Association)
- JFMDA (The Japan Federation of Medical Devices Associations)
- JIMA (Japan Inspection Instruments Manufacturers' Association)
- JMIF (Japan Measuring Instruments Federation)
- NECA (NIPPON ELECTRIC CONTROL EQUIPMENT INDUSTRIES ASSOCIATION)
- SEAJ (Semiconductor Equipment Association of Japan)
- JEMA (The Japan Electrical Manufacturers' Association)
- JMC (Japan Machinery Center for Trade and Investment)
- JEITA(Japan Electronics & Information Technology Industries Association)

JEMIMA

Japan Electric Measuring Instruments Manufacturers' Association

https://www.jemima.or.jp/

- An association of manufacturers of electric measuring instruments
- Established in 1948
- Regular members 80 companies Supporting members 27 companies, 13 organisations
- JEMIMA explanation https://www.jemima.or.jp/about/pamphlet.html

Categories and Products of Electric Measuring Instruments

Electric measuring instruments measure quantities and sizes of substances and phenomena,, and are grouped into following 8 categories.

Electric measuring instruments	Indicating Instruments	Instruments to indicate or record electrical quantities including electricity, voltage, electric power, power factors, and frequency, and other related apparatus
	Electricity Meters	Instruments to measure the demand and supply of electric power and other related equipments
	Electric Test and Measuring Equipment	Equipment to measure, observe, or record electrical and magnetic quantities by electronic means, and Equipment and Apparatus to generate electric and magnetic signals
	Test and Measuring Instruments using Electronic Technology	Equipment and apparatus to detect, measure, indicate, or record physical, chemical, sensory, and other quantities other than electric and magnetic quantities: Excluded are equipments and apparatus for measurement and control in factory automation and process automation, environmental measurement, and radiation measurement. Also excluded are equipments and apparatus that measure mainly by mechanical means, even when their indicators or displays are electronic.
	Measuring and Control Instruments for Factory Automation - FA-	Equipment and systems to identify and measure the status of objects in industrial processes such as machining & assembly industries, mainly handling solids and powder / granular materials, and other equipments and apparatus related to them, including general-purpose equipments converted into measurement and control equipments for factory automation application.
	Process Measuring and Control Instruments	Equipment and systems to continuously measure and control variables of industrial processes that mainly handle fluids, gases, and vapor and related components & parts
	Instruments for Environmental Monitoring	Measuring instruments to measure pollution of the natural environment and changes in natural phenomena, and other related equipments & apparatus
	Radiation Measuring Instruments	Measuring instruments to measure quality and quantity of radiation [x, γ , β , α rays, neutrons and others], measuring instruments that utilize radiation, and other related equipment apparatus

Overview of JAIMA

Name : Japan Analytical Instruments Manufacturers' Association (JAIMA)

Representative : [redacted] (June 2023~)

Established Year : August 18, 1960

Regular Members : 98 Companies
（ Manufacturers of analytical instruments）

Associate Members : 66 Companies
（ Traders and distributers of analytical instruments ）

JAIMA product range

Laboratory instruments
(GC, LC, MS, IR, IC, Thermal, UV, XRF, XRD,
SEM,TEM, NMR, PSA, pH…)

Environmental analyzers
(Air and water pollution monitoring)

Process analyzers

Clinical test instruments and systems
(Clinical chemistry, immunology and Hematology)

Biotechnology

JAIMA

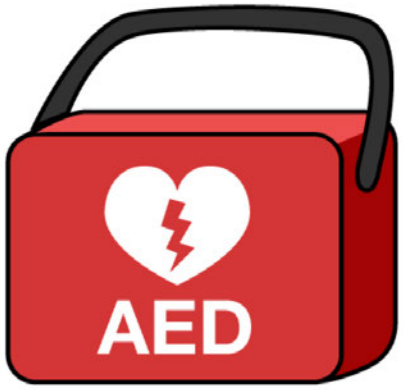
Characteristics of specialist equipment

What is specialist equipment ?

Contributing to safety of the society, human health, and the environment

Specialist equipment is often safety critical

- **Defibrillators** -> Death likely if not functioning
- **Balance** to measure medicine -> wrong dose can be fatal for patients.
- **X-ray apparatus** -> wrong dose can harm patient / must be accurate.
- **Pollutant monitoring** -> impact environment and human health
- **Smoke detectors** -> minimize damage caused by fire



If specialist equipment is not available...

for example	Not able to...	Effect on society
Devices for substance detection 	- to identify, measure and analyse chemicals	- Enforcement of chemicals restrictions is not possible. - Environmental pollution cannot be controlled. -> damage environment - Innovation will stop.
Gas detector 	- to detect gas leaks	- Safety is not ensured at home - Safety is not ensured at workplace
In vitro diagnostic device 	- to diagnose some desease - to observe the prognosis of treatment.	- Health care deteriorates significantly

Product lifetime is long

Consumer Products
(ex. Mobile Phone)

Lifetime: **4** to **5** years

Replace with new one in **2** - **5** years

Specialist equipment
(ex. Total Organic Carbon Analyser)

up to **20** -**25** years

7 to **10** years

Spare parts are important

- Repairs are necessary to prolong the lifetime of Electrical and Electric Equipment
  - Original spare parts are needed to ensure the original performance (i.e. safety and durability)
  - This aligns with “Right to repair” and “Repair as produced”
  - RoHS Directive § 4.4* allows the use of spare parts for the repair

- If spare parts are not derogated
  - Repairable EEE and stocked spare parts become waste
  - Long-life EEE cannot fulfill expected lifetime (ex. 20 years)

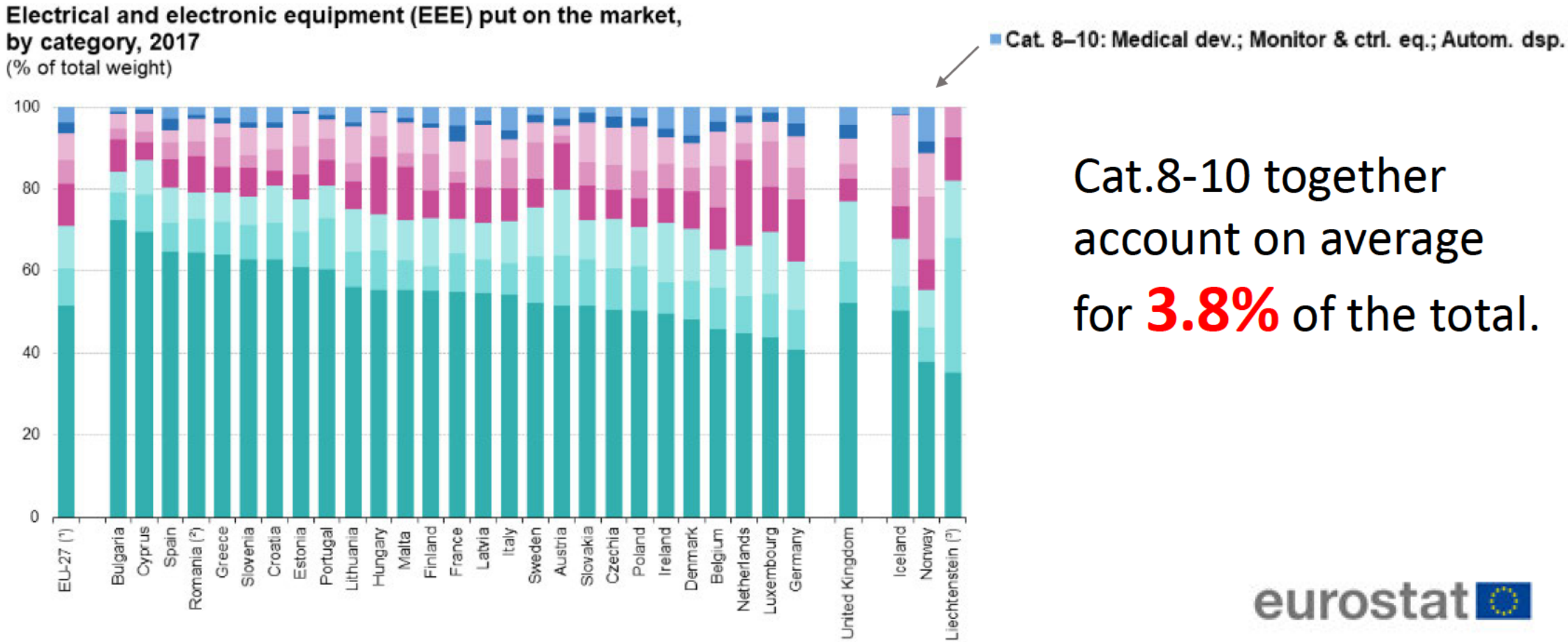
* EUR-Lex - 02011L0065-20160715 - EN - EUR-Lex (europa.eu)

Different Product Diversity

characteristics	Consumer Products (ex. Mobile phone)	Specialist equipment (ex. Test equipment)
Number of sales/year	257 million**	0.13 million*
Number of current models/ manufacturer	ca. 10****	1600***

*source: https://www.statista.com/outlook/15020100/102/mobile-phones/europe?currency=eur#market-arpu
**source: eurostat, Sold production, exports and imports by PRODCOM list (NACE Rev.2) – annual data, Jan.-Dec.2018, 26516200 – Machines and appliances for testing the mechanical properties of materials
*** source: ERA Report 2006-0383 – Final Report
**** source: https://en.wikipedia.org/wiki/List_of_Android_smartphones

Number of products put on the EU market is small.
(Example of RoHS category 8-10)

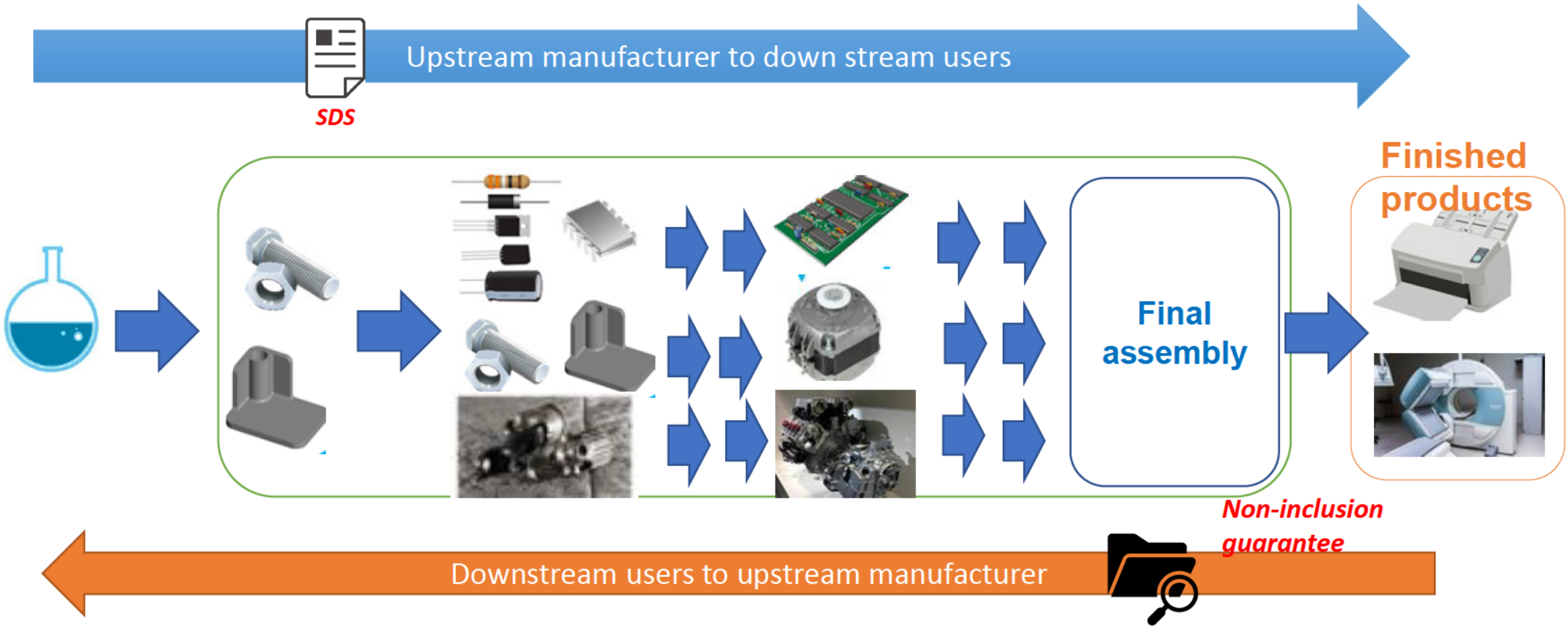


Cat.8-10 together account on average for **3.8%** of the total.

eurostat

https://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics_-_electrical_and_electronic_equipment#EEE_put_on_the_market_and_WEEE_collected_in_the_EU

Supply chain is long

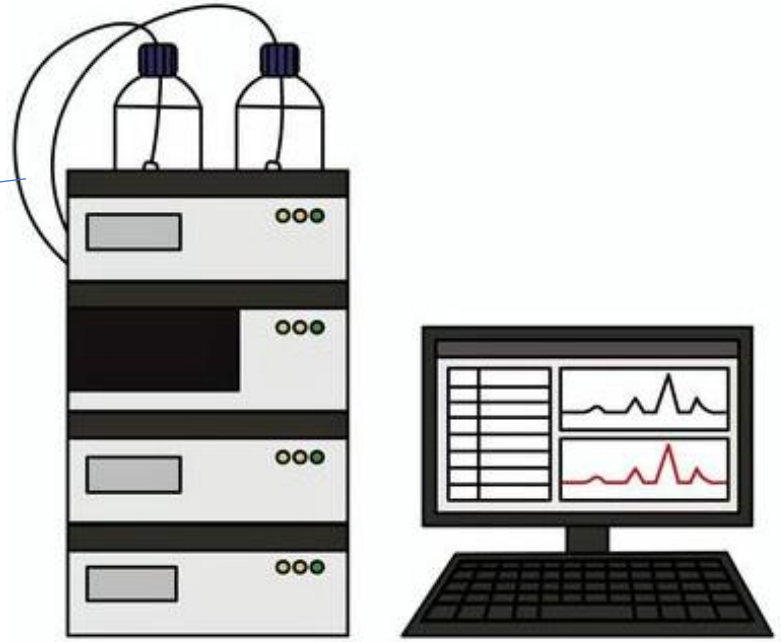


PFAS in specialist equipment

PFAS: various properties

A material fulfilling several properties is required.

- Chemical resistance (ex. acid, ozone,...), inertness
- Pressure resistance
- Resistant to low/high temperature (>260°C)
- Flame retardant
- Elasticity
- Low friction
- Non-adhesion
- Electrical insulation
- Low boiling point



Fine difference in properties have a significant impact on the performance of the equipment and measurement results.

No derogation means…

- poor performance of devices
  -> inaccurate measurement
  -> damage the environment and human health
- devices not available on the EU market anymore
  -> measurement of PFAS is not possible.
  -> enforcement of PFAS Restriction is not possible.
- components deteriorate quickly
  -> increase waste
  -> hinder the sustainable society
- high cost

A sector-specific assessment is necessary to determine whether the contribution to human health and environment of banning PFAS exceeds these disadvantages.

Even when alternative candidate exists……

- Testing of alternative materials: 1-2 years -> if negative, no alternative
- Reliability test: performance test of the product: 1-2 years
  -> if negative, no alternative

Next Slide

- Device design change: 0.5-1 year
- Change the production line /buy new production equipment: 1-2 years
- Create Technical Documentation: 0.5 year
- Training at the production site: a few months
- Production management (information to customers): 0.5-1 year
- Third-party certification: 1 year without clinical trial
  a few years or more with clinical trial

Sufficient transition period is necessary.

If alternatives are negative……

- Testing of alternative materials: 1-2 years -> if negative, no alternative
- Reliability test: performance test of the product: 1-2 years
  -> if negative, no alternative

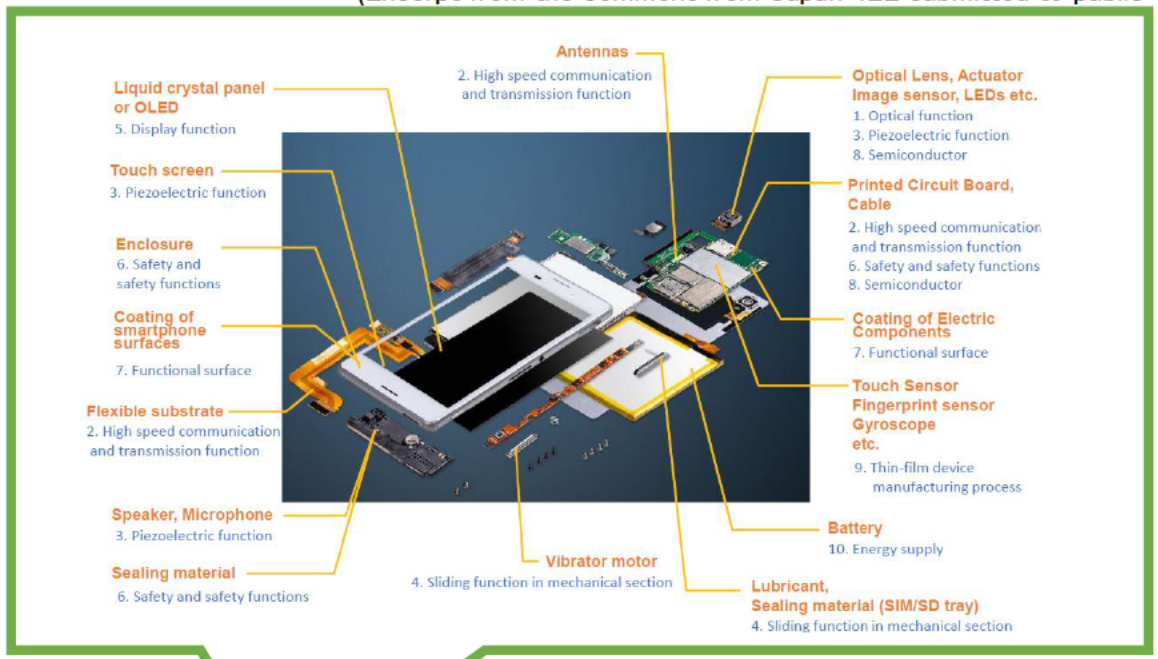
- Device design change: 0.5-1 year
- Change the production line /buy new production equipment: 1-2 years
- Create Technical Documentation: 0.5 year
- Training a
- Production management (information to customers): 0.5-1 year
- Third-party certification: 1 year without clinical trial
  a few years or more with clinical trial

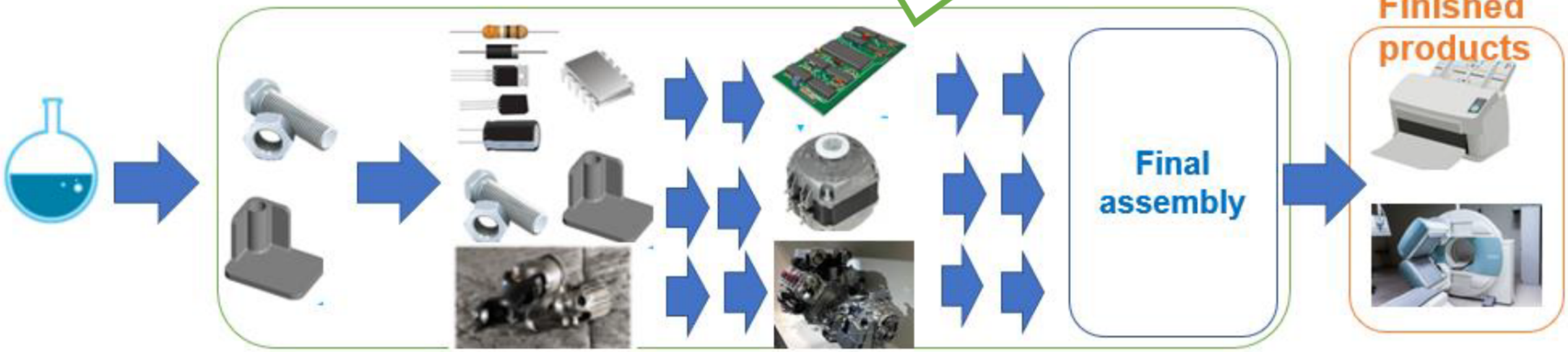
Cannot achieve anymore

Further extension is necessary.

(Excerpt from the comment from Japan 4EE submitted to public consultation)

a) reliance on components produced mainly for consumer equipment application,
b) reliance on these components replacing PFAS and
c) testing if PFAS free components fulfil requirements of specialist equipment. (safety, reliability etc.)





Lack of analytical methods

general lack of analysis methods applicable to the broad range of substances and matrices in which PFAS are used.

- Reference materials are not available for all PFAS.
- Available standards are limited (ex. PFAS in water, in soil)
- No established analysis method is known for PFAS in complex articles such as Electric and Electrical Equipment.

-> the enforcement of such a broad PFAS restriction is not feasible

Key Messages

- Specialist equipment are often **critical for our society**.
- Adequate **derogations** are necessary because of **lack of altenatives**. (extension etc.)
- Existence of alternative substances does not automatically means that **final products** can be produced with altenatives. (saftey, reliablibity etc.)
- Adequate **transition period** is necessary. (reliability testing etc.)
- **Spare parts**: the “repair as produced” principle should be introduced.
- Lack of **analysis methods**

Thank you