

# Survey in support of the Commission services' work on the definition of Safe and Sustainable by Design criteria for chemicals and materials

Fields marked with \* are mandatory.

## About this Survey

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This survey is addressed to all interested parties, including European authorities, industry, academia, and civil society. Your feedback will inform the European Commission on the further development of the criteria.

The deadline for replies is 30-06-2021

If you have any questions, please contact the European Commission via [RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu](mailto:RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu)

Your voice matters and we are grateful to you for taking the time to complete this consultation.

I acknowledge that I have read the Data Protection Notice attached (please see below).

[Data protection notice.pdf](#)

## Introduction

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With the European Green Deal (COM 2019/640), the European Commission outlines its vision to make the European economy and society more sustainable. Great attention is paid on how to achieve climate neutrality, circular economy, biodiversity protection, and a zero-pollution ambition for a toxic-free environment. One of the priorities is to protect citizens and the environment against the negative impact of hazardous chemicals, materials and products and to encourage safe and sustainable alternatives.

In October 2020, the Commission adopted the Chemicals Strategy for Sustainability (COM 2020/667), one of the steps towards a zero-pollution ambition for a toxic-free environment announced in the European Green Deal. The Zero Pollution action plan (COM 2021/400) was published in May 2021. The Chemicals Strategy sets out concrete actions to support the transition towards chemicals, materials and their use in products that are concurrently safe and sustainable starting with the design phase and taking into account the overall life cycle: production, use and end-of-life. As announced in the Strategy, the European

Commission will develop EU safe and sustainable by design criteria by 2022.

In the Strategy, the following working definition of 'Safe and Sustainable by design' (SSbD) was proposed: 'a pre-market approach that focuses on providing a function (or service), while avoiding volumes and chemical properties that may be harmful to human health or the environment, in particular groups of chemicals likely to be (eco-)toxic, persistent, bio-accumulative or mobile. Overall sustainability should be ensured by minimising the environmental footprint of chemicals in particular on climate change, resource use, ecosystems and biodiversity, from a lifecycle perspective.'

As a first step in the development process of Safe and Sustainable by Design criteria for chemicals and materials, DG Research and Innovation and DG Environment organised the 1st stakeholder workshop on 19 March 2021, in order to start discussing the scope and relevant initiatives on this topic. Please find [here](#) the recording.

Following the 1st workshop, a mapping study carried out by the Commission was published in April 2021 identifying existing policies and initiatives that implement safety and sustainability criteria. The study analyses a sample of criteria under these policies and initiatives with a focus on chemicals and materials, and it includes a section on the research and innovation progress done on Safe-by-Design under Horizon 2020.

The purpose of this survey is to complement the findings of the mapping study by obtaining views of stakeholders on the general understanding of the principles of Safe and Sustainable by Design when applied to chemicals and materials, and to set the basis for identifying criteria for a safe and sustainable-by-design approach. The overall goal of the Safe and Sustainable by Design criteria is to incentivise the production and use of safe and sustainable chemicals and materials and support the different actors in this transition. Furthermore, we are looking to shed light on its possible implementation and define the priority sectors/applications to start defining criteria. The results of the survey will be taken up by the Commission services in the work of defining the Safe and Sustainable by Design criteria and the outcome will be communicated in the context of this work. Your input will be treated anonymously.

[Link to the mapping study](#)

[Link to the Safe and Sustainable by Design website](#)

[Link to register as a stakeholder](#)

For further questions please write to [RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu](mailto:RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu)

## Information about the respondent

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Contact information

Name:

Andreas Wade

E-mail address:

president@pvthin.org

Are you responding to this survey on behalf of/as:

- Academic institution / University
- Public research institution
- Business or Industry association
- Company
- Non-governmental consumer organisation
- Non-governmental environmental protection organization
- Trade Union
- Other non-governmental organization (NGO)
- Public authority
- Individual citizen
- Other (to be filled)

Other

Name of the company/organisation:

Where are you based?

Please indicate if you are active on the... (you can choose several options)

- local market
- regional market
- EU market
- non-EU market
- worldwide market
- not applicable

## Existing initiatives, labels, schemes

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This section builds on the findings of the mapping study and it aims at assuring the relevance of the identified initiatives and complement the study with your input.

**Q1.** There are many initiatives (in place or under development) which define safety, environmental performance and /or sustainability criteria, which cover different types of products and have been identified in the Commission mapping study. The initiatives addressed here are linked to regulation or a certification scheme. How familiar are you with the initiatives listed below? Have you been involved in the criteria definition process or are you using any of them?

	I am very familiar and, if applicable, my organisation has (a) product(s) complying with it / which will need to comply	I am very familiar and I have been involved in the process of criteria definition	I am familiar with it	I am not at all familiar
Ecodesign [1]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy label [1]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable product policy framework [2]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substantiating Green Claims [3]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable batteries [4]	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
EU Ecolabel [5]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU Green Public Procurement [6]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable Finance [7]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TCO Certified [8]	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Nordic Swan [9]	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Blue Angel [10]	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Natureplus [11]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
OEKO-TEX [12]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Green Seal [13]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Green Screen for Safer Chemicals [14]	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## References:

[1][https://ec.europa.eu/growth/industry/sustainability/product-policy-and-ecodesign\\_en](https://ec.europa.eu/growth/industry/sustainability/product-policy-and-ecodesign_en)

[2][https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative_en)

[3][https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-&-businesses-substantiating-claims\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-&-businesses-substantiating-claims_en)

[4][https://ec.europa.eu/environment/topics/waste-and-recycling/batteries-and-accumulators\\_en](https://ec.europa.eu/environment/topics/waste-and-recycling/batteries-and-accumulators_en)

[5]<https://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html>

[6][https://ec.europa.eu/environment/gpp/eu\\_gpp\\_criteria\\_en.htm](https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm)

[7][https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en)

[8]<https://tcocertified.com/>

[9][www.nordic-ecolabel.org](http://www.nordic-ecolabel.org)

[10][www.blauer-engel.de/en](http://www.blauer-engel.de/en)

[11][www.natureplus.org/](http://www.natureplus.org/)

[12][www.oeko-tex.com/en/](http://www.oeko-tex.com/en/)

[13] <https://greenseal.org/>

[14]<https://www.greenscreenchemicals.org/>

**Q2.** Do you think that the Safe and Sustainable by Design concept and criteria for chemicals and materials can be useful to any of the following initiative(s)?

	Not at all relevant	Somewhat relevant	Very relevant	I don't know
Ecodesign	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy label	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable product policy framework	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substantiating Green Claims [15]	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable batteries [16]	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU Ecolabel	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU Green Public Procurement	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable Finance	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
TCO Certified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Nordic Swan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Blue Angel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Natureplus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
OEKO-TEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Green Seal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Green Screen for Safer Chemicals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

## References:

[15][https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-&-businesses-substantiating-claims\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-&-businesses-substantiating-claims_en)

[16][https://ec.europa.eu/environment/topics/waste-and-recycling/batteries-and-accumulators\\_en](https://ec.europa.eu/environment/topics/waste-and-recycling/batteries-and-accumulators_en)

**Q3.** If you are aware of another regulation, label or certification not listed above, please mention it and explain why you think this might be relevant for the development of Safe and Sustainable by Design criteria for chemicals and materials.

The EPEAT ecolabel – managed by the Global Electronics Council (GEC) - is a leading global Type 1 ecolabel covering products and services from the technology sector. GEC has met the requirements of ISO 14024, which is necessary for managing a Type 1 ecolabel. EPEAT defines life-cycle based criteria for a range of product categories, including photovoltaic modules and inverters. Management of substances is a key element in the EPEAT criteria for PV modules and inverters. This includes both mandatory and optional requirements covering declarable substances in products and manufacturing, assessment of alternatives, disclosure and substitution of SVHCs, and GWP gas emissions during manufacturing. In particular, the EPEAT criteria for PV modules and inverters require manufacturers to list the presence of IEC 62474 declarable substance groups and declarable substances in the product at or above the reporting threshold amounts stated in the IEC 62474 Standard, using the version of IEC 62474 which is current at the time the product is declared to conform to this Standard. The list shall consist of all declarable substance groups and declarable substances designated in Criteria 1, 2 and 3 of IEC 62474, and the following industry-specific substances: arsenic compounds, antimony compounds, and beryllium compounds. The manufacturer shall have a process to manage, maintain, and update all data received on declarable substances as listed in IEC 62474.

Supporting document: <https://globalelectronicscouncil.org/wp-content/uploads/NSF-457-2019-1.pdf>

Please upload any supporting document for your answer in Q3

**Q4.** The mapping study identifies several international initiatives that provide policy principles, practical guidance, methods and tools to assess sustainability, without being linked to legislation, labelling or certification scheme. Are you familiar with any of these initiatives?

	Yes	No
United Nations Environment Assembly (UNEA) Framework Manual on Green and Sustainable Chemistry [17]	<input checked="" type="radio"/>	<input type="radio"/>
OECD work on environmentally benign chemicals or “Sustainable Chemistry” [18]	<input checked="" type="radio"/>	<input type="radio"/>
OECD Guide on safer chemicals alternatives [19]	<input checked="" type="radio"/>	<input type="radio"/>
The International Sustainable Chemistry Collaborative Centre (ISC3) [20]	<input checked="" type="radio"/>	<input type="radio"/>
Guide on Sustainable Chemicals published by the German Environmental Agency [21]	<input checked="" type="radio"/>	<input type="radio"/>
The Chemical Footprint Project [22]	<input checked="" type="radio"/>	<input type="radio"/>
The Sustainable Chemistry Research and Development Act of 2019 (US) [23]	<input checked="" type="radio"/>	<input type="radio"/>
The Green Chemistry Initiative (by the California Environmental Protection Agency) [24]	<input checked="" type="radio"/>	<input type="radio"/>

## References:

[17]<https://wedocs.unep.org/handle/20.500.11822/34338>

[18]<http://www.oecd.org/env/ehs/risk-management/sustainablechemistry.htm>

[19][www.oecd.org/chemicalsafety/risk-management/guidance-on-key-considerations-for-the-identification-andselection-of-safer-chemicals-alternatives.pdf](http://www.oecd.org/chemicalsafety/risk-management/guidance-on-key-considerations-for-the-identification-andselection-of-safer-chemicals-alternatives.pdf)

[20][https://www.isc3.org/fileadmin/user\\_upload/Documentations\\_Report\\_PDFs/ISC3\\_Sustainable\\_Chemistry\\_key\\_characteristics\\_20210113.pdf](https://www.isc3.org/fileadmin/user_upload/Documentations_Report_PDFs/ISC3_Sustainable_Chemistry_key_characteristics_20210113.pdf)

[21]<https://www.umweltbundesamt.de/en/publikationen/guide-on-sustainable-chemicals>.

[22]<https://www.chemicalfootprint.org/>

[23]<https://www.congress.gov/bill/116th-congress/house-bill/2051/text>.

[24] <https://calepa.ca.gov/about/>

**Q5.** Which of those initiatives can provide the most relevant input for the Safe and Sustainable by Design concept and criteria for chemicals and materials?

	Not at all relevant	Somewhat relevant	Very relevant	I don't know
United Nations Environment Assembly (UNEA) Framework Manual on Green and Sustainable Chemistry	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
OECD work on environmentally benign chemicals or "Sustainable Chemistry"	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
OECD Guide on safer chemicals alternatives	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The International Sustainable Chemistry Collaborative Centre (ISC3)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
German Environmental Agency published Guide on Sustainable Chemicals	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Chemical Footprint Project	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Sustainable Chemistry Research and Development Act of 2019 (US)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Green Chemistry Initiative (by the California Environmental Protection Agency)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q6.** If you are aware of another initiative, not included here, please mention it and explain why you think this might be relevant for the Safe and Sustainable by Design concept and criteria for chemicals and materials.

Please provide a reference to the initiative and information as for example on:

- Scope of application and main aim of the initiative
- Life-cycle stage covered
- Criteria areas covered related to safety and sustainability (environmental, safety, circular, governance, economic and social)
- Validation scheme (if any)

2000 character(s) maximum

As mentioned above, EPEAT defines life-cycle based criteria for a range of product categories, including photovoltaic modules and inverters. EPEAT criteria for PV cover several life-cycle stages, including management of substances (including alternatives assessment), material use (incl. recycled content), energy efficiency and water use, end of life management and design for recycling, product packaging, and corporate responsibility. Manufacturers and/or brands interested in getting their products registered under EPEAT must choose a Conformity Assurance Body (CAB). CABs are the third party organizations that work with manufacturers to verify that their product meet the EPEAT criteria as claimed. The EPEAT ecolabel ensures the veracity of EPEAT-registered products through an ongoing surveillance process known as Continuous Monitoring. Continuous Monitoring activities occur throughout the year and test the ability of Participating Manufacturers to prove conformance with EPEAT criteria on an ongoing basis. All EPEAT-registered products in all product categories and all Participating Manufacturers are subject to Continuous Monitoring.

Please upload any supporting document for your answer in Q7

## Policy Goals

The objective of this section is to collect your views to better frame the purpose of the Safe and Sustainable by Design

**Q7.** In your opinion, what should be the focus of the Safe and Sustainable by Design criteria? Please rank your answers by giving 5 stars the most relevant options and 1 star to the least relevant.

Phasing out the most harmful chemicals	
Developing safe and sustainable alternatives to substitute/minimise the use of substances of concern and avoid regrettable substitution	
Sustainable sourcing of resources and feedstock	
Minimising the impact on biodiversity and ecosystems during production and use of chemicals and materials	
Minimising the impact on climate during production and use of chemicals and materials	

	
Enabling non-toxic circularity (resource efficiency, avoidance of substances of concern in waste and recycled materials)	
Fostering innovation and allow the green industrial transition, including by rewarding frontrunners	
Predicting and evaluating the ability of newly designed chemicals, substances and materials to perform in a safer and more sustainable way compared with chemicals and materials currently used	
Harmonise criteria on the safety and sustainability of chemicals and materials and the products in which they are used	
Other	

If other, please specify

Several of the objectives outlined above are based on loose definitions that are not currently enshrined in EU legislation (e.g. “most harmful chemicals”, “substances of concern”, “non-toxic circularity”). Successful implementation of safe and sustainable by design criteria cannot be achieved in the absence of regulatory certainty and predictability, which in turn is impossible in the absence of firm definitions. We strongly encourage the European Commission to refer, in this context, to well-established regulatory lists such as the REACH Candidate List of Substances of Very High Concern and/or sectoral reference standards such as the IEC 62474 declarable substance standard.

## Priority sectors

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The aim of this section is to collect input to identify and examine which are the most relevant sectors or applications for which Safe and Sustainable by Design criteria for chemicals and materials should be developed first. Some examples listed in the Chemicals Strategy for Sustainability are products for consumers (among others, *food contact materials, toys, childcare articles, cosmetics, detergents, furniture and textiles*), others are construction materials, innovations for low-carbon mobility, batteries, wind turbines, or renewable energy sources.

**Q8.** Which are the most relevant aspects to consider in order to prioritise sectors or applications? Some examples could be environmental impact due to chemicals and materials used in this sector/application, potential for improvement in terms of safety and sustainability, large production volumes, no existing regulations, etc.

*2000 character(s) maximum*

When considering which sectors to prioritise for the application of SSBD criteria, due consideration should be given to whether existing regulation already provides for rules on the safety and sustainability of chemicals and materials used in that sector. For example, the European Commission is currently in the process of developing Ecodesign requirements for PV modules and inverters. The proposed requirement on recyclability already addresses “critical raw materials and environmentally relevant materials” and includes material disclosure obligations for lead, cadmium, silicon metal, silver, indium, gallium, tellurium, metal solder and contacts, glass fining agents, and phthalates in power cables. The draft requirement also includes an obligation for manufacturers to declare the content in grams and type of polymers used (including whether they are fluorinated or include fluorinated additives) in the encapsulant and backsheet of the PV module.

**Q9.** Which application sectors should be considered as a priority for Safe and Sustainable by Design criteria for chemicals and materials? Please name up to five application sectors in the ranking order of most important to least important, and briefly motivate your choice. If possible, provide supporting information.

*2000 character(s) maximum*

Please upload any supporting document for your answer to Q8 or Q9

## Implementation options

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**Q10.** There are different options that could be used to implement Safe and Sustainable by Design criteria for chemicals and materials. Please rate, in your view, which would be the most effective option, or combination of them, to achieve higher impact in this transition? Being 5 stars the most relevant.

By recommending the use of Safe and Sustainable by Design criteria in best practices for industry	
By developing a certification scheme on Safe and Sustainable by Design	
By integrating Safe and Sustainable by Design criteria for chemicals and materials into existing labeling of products or other means of information communication on products' sustainability	
	

By promoting the development and use of alternative chemicals based on Safe and Sustainable by Design criteria, e.g. through ongoing initiatives	
By using the Safe and Sustainable by Design criteria to direct funding for R&I into new chemicals, substances, materials and products and evaluate project proposals	
By regulating the use of chemicals based on Safe and Sustainable by Design criteria	
Other	

If other, please specify

*1000 character(s) maximum*

Safe and sustainable by design (SSBD) criteria should not, in our view, duplicate regulatory instruments for chemicals classification and risk management under REACH, CLP, or sectoral legislation. SSBD criteria could instead be used as a positive instrument to promote the safe and sustainable use of chemicals and materials by industry. Manufacturers in the PV sector often face complex trade-offs when considering the performance of their products across various dimensions of sustainability (chemical content, resource use, carbon footprint, circularity). SSBD criteria could serve as an opportunity to address and balance these trade-offs, creating a common EU baseline for initiatives addressing chemicals in products. In order to quantify these trade-offs, SSBD criteria should leverage existing frameworks on life-cycle assessment, including the PEF methodology.

## Contact

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