

Report from Workshop on EUSES update needs

Brussels, 4-5 June 2018

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1. Background

The workshop on the European Union System for the Evaluation of Substances (EUSES) was organised by the European Chemicals Agency (ECHA) at the premises of DG Environment in Brussels. The programme (see Appendix 1) was prepared by an organising committee composed of the following representatives:

Industry

- Erwin Annys (Cefic)
- Paul Mason (Sc Johnson, Cefic)
- Diederik Schowanek (Procter Gamble, ECETOC)
- Frederik Verdonck (Arche Consulting, Eurometaux)

Member States

- Joost Bakker (RIVM, NL)
- Anna Hadam (Office for Registration of Medicinal Products, Medical Devices and Biocidal Products, PL)
- Sara Martin (Environment Agency, UK)

ECHA

- REACH: H el ene Magaud, Romanas Cesnaitis, Stefano Frattini, Eleni Tsitsiou
- Biocides: Heike Schimmelpfenning, Eug enia Nogueiro

Before the workshop, the organising committee prepared background documentation focusing in particular on describing proposals for changes in the current EUSES. The background documents and related presentations (slides and recordings) are available at: <https://echa.europa.eu/-/workshop-on-euses-update-needs>.

Workshop participants were selected based on their expressions of interest, with the aim to have balanced participation of industry and authorities (as well as some representatives from academia) covering the fields of both REACH and biocides. The list of participants is presented in Appendix 2.

2. Setting the scene - 4 June

The workshop started with a presentation on **the background of the EUSES tool** by Dik van de Meent, from the Association of Retired Environmental Scientists (ARES). The presentation covered the basic concepts that have contributed to the development of the tool and the lessons learnt so far, and an introduction of proposals to be taken into account when further developing the tool.

This was followed by a presentation by Diederik Schowanek, from the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC), on the **outcome of the "ECETOC Environmental Exposure Modelling Workshop 2017"** and ECETOC recommendations for the EUSES update. Recommendations included updating the outdated science, enhancing the user experience by improving the interface, and implementing a tiered approach for risk assessment. Flexibility was also mentioned as a key aspect that should be retained by the tool. It was also stated that ECETOC's targeted risk assessment (TRA) task force is willing to provide support for the EUSES update process over the coming years.

Next, Romanas Cesnaitis, from ECHA, provided an overview of the **legal requirements for**

exposure assessment and the use of EUSES under REACH. He underlined the key role played by emission information in exposure assessment. In this context, specific environmental release categories (SPERCs) developed by sector organisations may be crucial to the better release estimation for industrial and widespread uses. During the discussion, it was mentioned that it is not always easy for registrants to identify the tonnage per use. Since such information may be available within downstream users sectors, it was suggested that sector associations could be provide such information as part of their SPERCs contained in the use maps.

Heike Schimmelpfenning, from ECHA, then presented the **legal requirements, exposure assessment and the use of EUSES under the biocides regulation.** She provided information on a 'EUSES quick-fix' project covering the implementation of a number of missing or outdated emission scenario documents (ESDs) to better support the biocides needs in the current version of EUSES. During the discussion, some participants mentioned that it would be useful to be able to use the information from the ESDs also for the industrial chemicals.

Hélène Magaud, from ECHA, presented **ECHA's plans for EUSES development.** ECHA has decided to take over the ownership of EUSES, but no commitment has been made yet on tool update and maintenance. The decision on these aspects will be based on the outcome of a pre-study to be launched by ECHA at the end of 2018 (expected to run until Q2 2019). This study will analyse the needs and propose solutions accompanied by cost estimations for the update of EUSES. The intention was to collect information to scope this pre-study during the workshop. As it would be preferable for functionalities available in other tools such as Chesar not to be redeveloped in EUSES, there was also a quick introduction to Chesar, highlighting the commonalities and differences between the two tools. There was also an introduction to matters related to the IT choices to be made (e.g. on the distribution mode of the tool, either as a standalone application or as an online-access version) in preparation of the discussions planned on the second day of the workshop during the World Cafe. The aim of the World Cafe discussions was to collect information on users' experiences and expectations, to facilitate the assessment of the different alternatives for developing the tool. Participants mentioned that since EUSES is also used as an exploratory tool for substances that are, for example, not subject to registration yet, retrieval of substance properties from IUCLID could exist but should not be mandatory. Concawe mentioned their need to re-use Application Programming Interfaces to run several parallel assessments. ECHA said it was open to explore with Concawe the possibility of creating a link between Chesar and the PETRORISK spreadsheet tool.

Anna Hadam from Poland's competent authority for biocides introduced the **priority setting criteria** developed by the organising committee for ranking the update needs. The criteria cover whether there has been sufficient analysis/development/testing of a topic so that the given update proposal would be ready ('mature') for implementation in the short term. It was clarified the priority setting was based on a qualitative, rather than quantitative, assessment of the criteria. The assessment also covered considerations on the need and level of acceptance of the proposed change in the regulatory context. If a topic is not deemed mature enough, then it will be considered in the longer term. In addition, the suggested prioritisation takes into account how important the change is from the user perspective (e.g. the number of substances affected, a wider applicability domain including new groups of chemicals or introducing new release scenarios). In the discussion, it was clarified that for some topics (e.g. metals) the ranking took into account not only the number of substances but also the volume of the substances.

3. Overview of changes proposed by the workshop organising committee – 4 June

Then members of the workshop organising committee presented the **proposals for updating the current version of EUSES** as provided in the workshop background documentation.

Some remarks were made and discussion took place for some topics, but this was limited due to time constraints. The table below lists some of the key discussion points per topic.

Topic	Discussion points
1. QSARs for BCF and Koc	It was discussed whether to keep QSARs as part of EUSES at all or to request EUSES users to report Koc and BCF as for the other physico-chemical parameters. Indeed, QSARs have to be well documented to be accepted (in particular to justify that the QSAR used is adequate for the specific substance) and EUSES is not meant to be a QSAR tool. For example, for some types of substances, Kow cannot be used to predict Koc and BCF values. In addition, the Koc and BCF have to be used for purposes other than exposure estimation (e.g. PNEC derivation, PBT assessment) and there is a need to ensure consistency of the value in those different contexts.
4. Direct release to agricultural soil	It was mentioned that the current model for plant protection products (FOCUS) was under revision and that this experience (possibly increased harmonisation) should be taken into account. Consistency with the ESD for PT-18 (manure application) should also be looked for.
6. Update of SimpleTreat	Some discussion took place on the choice of the default value for the concentration on suspended solids. The biocides working group had agreed not to use by default the value of 7.5 mg/l proposed by the authors of SimpleTreat 4, considering that such value may not be sufficiently representative of the various conditions over the EU. In any case, it was stressed that there should be the possibility, for this as well as for other parameters, to modify default values in EUSES.
7. Biodegradation in sewer	<p>It was clarified that the proposal is meant to be applied in case of release into municipal sewage and not to an industrial STP. It was also highlighted that, for now, the degradation in the sewer has been applied within the biocides assessment only for highly reactive substances.</p> <p>A question was raised on how the temperature in the sewer would be taken into account (as a large difference can be expected between southern and northern Europe, especially as rainwater enters the sewers). It was also requested that possible overflows (occurring in case of heavy rain events) should be taken into account.</p>
9. Soil deposition of very volatile substance	It was acknowledged that for highly volatile substances the estimated concentration in soil was most probably too high. Nevertheless, there was some discussion on whether not taking volatilisation from soil into account at the local scale was just a 'bug' (i.e. the proper relationship between volatility of the substance and its concentration in soil was simply not implemented in the tool) in the current EUSES, or that it would be necessary to revisit the currently implemented model. Different views existed on whether a 'correction' was ready for implementation.
10. Episodic rain	The need for such a modification was questioned, as it makes the model more complex and it is not clear when such an 'improvement' would be needed.
11. Photolytic degradation	It was mentioned that there is not an urgent need to implement such changes because i) this information can already be taken into account outside EUSES, ii) the data are usually not available for industrial chemicals and iii) the current model does not account for photolytic degradation at the local scale. It was nevertheless questioned why it was planned to take into account photolytic degradation only in water and not in soil (for plant protection products, photolytic degradation in soil is taken into account).

12. Additional PEC soil: $PEC_{soil_{initial}}$	The proposal is already used for plant protection products and may have an impact only on substances which have a half-life in the same order of magnitude as the duration of the test. It was nevertheless stressed that degradation happens differently in an ecotoxicity test (normally, sterile standardised artificial soil is used) and in the environment. It was also stressed that analytical monitoring of exposure concentrations in the soil toxicity tests is complicated.
13. Depth-dependent concentration in soil	It was discussed whether it would be more relevant to base the correction on the Koc instead of on the Kow. It was also discussed whether the penetration depth should be kept fixed or be a chemical dependent parameter – such a possibility would be more realistic but further complicate the model.
14. Kp for freshwater/marine	It was highlighted that the proposal is mainly relevant for ionisable substances and metals, as for the majority of neutral organic compounds there is not much difference.
17 and 18. Man via environment	It was highlighted that updating food consumption data should be considered during the tool update, as the diet of EU citizens has changed.
19. Secondary poisoning	It was mentioned that the proposal may introduce additional uncertainty in the exposure predictions, as it will be quite difficult to get information on bioaccumulation in terrestrial food chains as well as in algae for REACH chemicals. Although QSARs could be used, it was not clear whether current QSARs would predict such bioaccumulation with sufficient certainty so that expanding the food chain model would bring useful additional information. It was stated that increased knowledge should be built on bioaccumulation in earthworms as a prerequisite to the extension of the terrestrial food chain.
20. Nanomaterials (particulates)	The tool which has been developed and presented is not ready for assessment at the local scale. Also, it would be useful to assess whether and how it could be extended to microplastics. It was also mentioned that the model does not address the physical effect of the particulates. It is also important to understand whether man-made particulates (nanos, microplastics) could substitute natural particulates and what the impact of such phenomena could be. The model has not been validated with external data (only internal consistency of parameters has been proven).
22-24. Metals-related proposals	EFSA said that they are also confronted with the issue that FOCUS is not supporting the assessment of metals and that they expect a mandate from the Commission to develop guidance on risk assessment for metals used in plant protection products. It was also stressed that some of the proposed changes might be applicable not only to the exposure part of the risk ratio but also to the hazard part. As a consequence, it was not clear whether the suggestion would lead to a real change in the ratio.
26. Assessment of substance transforming in the environment	Although the regulation is clear on assessment of transformation products having to be carried out, some participants highlighted that the experience with pesticides has shown that assessment of transformation products is not always straightforward and that further development is needed.
27. Aggregated local exposure	It was clarified that as a first step, the overlap of use in time and space has to be assessed, as this is a prerequisite to carry out aggregated exposure assessment for biocides.

At the end of the first day, the following general concerns/remarks were raised:

- How to validate the implemented changes?
- How to ensure that interlinks between the suggested changes will be taken into account?

- Increased transparency could be achieved by updating the current EUSES documentation and improving the help system, among other things.
- It would be useful to have a tool in which the uncertainty of the input parameters could be entered to propagate the uncertainty through the model. Also, it would be useful to be able to identify the most sensitive parameters that drive the output and what their uncertainty is.

4. Stakeholder involvement

Alejandro Garabatos and Paul Mason from Cefic introduced the organising committee's initial ideas on **stakeholder involvement** during the update process of the tool. It was proposed to establish three types of groups, each with different remit. One would be a broad **expert group**, consisting of various users interested in the development of the tool, possibly contributing to the testing of the updated tool. A **preparation committee** would act as the link between the IT developers and the expert group. Where necessary, targeted **topic groups** would contribute to the technical aspects of specific topics. There were discussions on where and how to seek volunteers for these groups and what the required skills could be for the participants in each group. It was suggested to call for volunteers from existing groups (e.g. ECETOC, Cefic's exposure scenario group, the FOCUS development group, industry sector groups such as that on metals). A representative of academia working on multimedia models would also be expected to take part in the expert and/or topic group work.

5. Suggestions from participants – 5 June

The second day started with a presentation by Sara Martin, from the Environment Agency of the United Kingdom, on the **UK's exposure model scoping project**. The presentation explained the aims of the project and the intention to link its outcome with ECHA's project, followed by some initial findings concerning the improvement of EUSES, including the possibility for auditability and sensitivity analysis and a more intuitive input/output interface.

Dik van de Meent then introduced some **ideas on future developments in environmental risk assessment**, mainly developed under the EU-funded Solutions-project. The suggestion is to move towards a different approach for risk assessment, as implemented in Simple²BoxTreat (air, water and soil), expanded also for secondary poisoning and man via the environment. Some concerns were raised by the participants that this proposal is possibly too different from the current implementation of exposure (and risk) assessment under REACH/biocides.

6. Discussions

Participants were introduced to the **World Café** concept, which provided them with the opportunity to discuss in more detail six of the 27 topics suggested as well as the IT development of EUSES. Those six topics had been selected on day 1 by the participants.

In the **discussions on the six selected topics**, participants were asked to provide their views on the following questions:

- Do you agree with the priority assigned to the modification (if not to specify points of disagreement)?
- Do you agree with the principles of proposed modification?
- How to carry out the impact assessment (sensitivity analysis) to decide on whether to implement the change?

A rapporteur per three topics presented a summary of the key discussion points.

1. Update of the QSARs models for BCF and Koc

Participants agreed that a change in the current implementation of the QSAR was important. A fourth option, not proposed by the organising committee and consisting of removing the QSARs from EUSES and requesting users to provide this information, was proposed as possibly the best solution. This is supported by the fact that information on adsorption and bioaccumulation potentials is normally a standard required information and it could be obtained via more elaborate QSAR tools, if no experimental data would be available. Nevertheless if option 2 would be implemented, it would require a better user guidance and some refinement of the model. The model proposed by Franco/Trapp was put into question and alternative models developed by Cefic-LRI were suggested. Deciding on a new model will require a topic expert group to reach consensus on the selected model.

17-18. Man via environment

The current proposal was not challenged in great detail, but it was proposed to further assess whether it would be worthwhile to make this update specifically for the neutral organics. Some additional changes were proposed for consideration, such as the parameterisation of the local scale (currently it might be too close to the source of emissions), the update of the food basket composition, and the integration of the biocide manure application.

25. Parallel assessment for multiconstituent substances and for substances transforming on use or in STP

Overall, the proposal was considered adequate, as it was seen as important to have the possibility to run the assessment in a batch mode. Nevertheless, further guidance on applicability will be needed and possibly this should be differentiated according to different cases. It was also mentioned that it would be good if the possibility for sensitivity analysis could be implemented. It was felt that implementation as in Chesar would be appropriate, keeping options for risk characterisation based on max/sum of/sum of selected RCR. However, it was also noted that information on the trophic level (as foreseen in the Guidance document for biocides) would be required to decide on how to address the risk characterisation.

2. Overview of release scenarios and the proposal to revisit the current approach for designing the release module

The participants agreed that updating the release module was an important part of the update. It was stressed that the tool should remain flexible to support the easy update of SPERCs/ESDs, as frequent changes can be expected. Some concerns were raised on whether it was foreseen that biocide ESDs will have to be used under REACH. It was clarified that the availability of scenarios in the tool will not make them mandatory and that they should be used when appropriate. However, it should be noted that for some of these scenarios, information not required under REACH may be needed, such as leaching rate. It was suggested to also consider the scenarios used for pharmaceutical products. There was a consensus that increased harmonisation between approaches between legislations would be beneficial. The applicability of 'consumption-based' scenarios under REACH may need to be further assessed, as some participants saw them as possibly overly conservative. To identify whether it is worth developing new scenarios, it was proposed to check in ECHA's database whether related uses are reported, for example to understand the number of substances used as co-formulants in pesticides or in fertilisers.

6. Update of SimpleTreat

It was suggested to implement SimpleTreat 4 not only for the municipal STP but also for the industrial STP. Such a model is not yet available for download. It was proposed to assess the possibility to implement a probabilistic model rather than a deterministic one. It was also proposed to take into account the degradation in sludge before its application or to introduce additional removal processes for hydrophobic substances. It was felt that a topic expert group should be set up to discuss the details of the proposed changes. As for other parameters, it

was reiterated that parameter values should remain modifiable, for example, in the case of site-specific data being available. It was also mentioned that a European project to collect monitoring data from STP is ongoing. It seems to support the proposal to refine the default of suspended solids in the effluent from 30 mg/l to 7.5 mg/l. A tiered approach (e.g. site-specific vs. generic STP) has been also proposed.

7. Sewer removal/(bio)degradation

It was clarified that this proposal is mainly relevant for substances with a half-life (DT50) of less than one hour. Nevertheless, it was considered very important to account for such a degradation path on the regional scale, as 20 % of the effluents are considered not to pass by a STP in the current version of EUSES (possibly to be changed to 10 % based on more recent data). In addition, such a process may be important for the good functioning of the biological STP for high-volume chemicals which are quite toxic for bacteria. Discussion took place over the fact that given the variability across different regions (in particular with regard to the temperature in the sewer), it may be difficult to define a 'standard sewer'. It was also noted that if the substance forms metabolites upon degradation, then the metabolites have to be assessed. The same applies for any reaction by-products (e.g. disinfection by-products for biocides). It was also discussed how to practically implement the change, whether through a new 'compartment' in EUSES or by adding it to the assessment of the STP compartment. A number of proposals were made on assessing the relevance of the proposed change, such as checking monitoring data from detergent associations. Another way to assess how many cases the change would be relevant to would be to check how many substances in ECHA's database undergo degradation with a DT50 of less than one hour. A Concawe project on the topic was also mentioned. Data on residence time in the sewer are available in the US but should be confirmed at European level.

During the **discussions on the IT development of EUSES**, participants provided their views on the following points:

- Where should most investment be made when updating EUSES – e.g. calculation changes, extension to other scenarios/substances, user interface?
- How EUSES should be used – through its own user interface or as integrated into Chesar?
- How should EUSES be distributed – through local installation packages or online access – and what should the update frequency be?
- Should the EUSES calculation engine be open for re-use in other applications?

It was felt that the main focus should be to make the tool more user-friendly. Ideas for relevant improvements included improving the user interface to increase differentiation of the screens, to be able to see the impact of a modification of a parameter quicker, and to better see and document when deviating from default values. Other suggestions were improving the help system, supporting a tiered approach, and allowing the versioning of assessments. It was also highlighted that the update should account for recent scientific developments, including the extension of the applicability domain to other substances and the implementation of all available scenarios. It was agreed that it could be a relevant option to make EUSES available via Chesar as Chesar already contains a number of functionalities which are fit for purpose for EUSES. Nevertheless if the tool would be made available via Chesar, then Chesar needs to be further adapted, for example, to allow the user to enter substance properties directly, and to enable the modification of all input parameters, including ESDs from biocides. Concerning the distribution and updating of the tool, there were some concerns on the security, history version and the need for internet access if the tool would be made available online, even though it was acknowledged that it would allow for easier installations and updates. It was also noted that any change to the calculation engines should be carefully considered (and preferably prevented after version 3.0), but that extensions of the application could be integrated. Participants using EUSES under REACH/biocides felt that a single tool would be sufficient, there being no need for multiple implementation of the same calculation engine. It

would nevertheless be useful if the tool could connect to other applications, e.g. GIS and PETRORISK. Making the EUSES source code open, allow users to validate the implementation and potentially test changes meaningful for future versions, was also presented as an idea.

7. Concluding remarks

At the conclusion of the workshop, the **next steps** were discussed.

ECHA clarified that the information collected during the workshop will be used in designing the IT pre-study which will support ECHA's management in deciding whether and how to invest in the further maintenance of EUSES. Further technical clarifications will be needed when assessing some proposals, and expertise to support ECHA in this task will be needed. At this time, it is foreseen that the workshop organising committee will act as the expert group providing input to ECHA's project. Nevertheless, ECHA stressed that anyone possessing the necessary expertise to contribute to the development of one or more topic should make it known, either through the workshop feedback form or by writing to ECHA's functional mailbox, [euses\[at\]echa.europa.eu](mailto:euses[at]echa.europa.eu). Participants who were not able to express their views on the proposed topics during the workshop were also invited to provide their key considerations through the same channels.

It was asked by participants whether further discussion on other topics than the 6 selected for the World Café would be organised. The large majority of participants expressed their interest in participating to a new event after the summer break if one would be organised.

In concluding the workshop, ECHA again highlighted the Agency's main aim of supporting consistent and harmonised implementation of environmental assessment principles under the REACH and biocides regulations.

8. Feedback from workshop participants

The workshop participants who provided feedback (approximately 60 %) thought that the workshop was needed to engage stakeholders in the discussion on the development of EUSES. They considered the background document informative and the discussion opportunity during the World Café very useful. Most of them expressed a wish to participate in the further work.

Appendix 1. Programme of the workshop

4 June 2018

Registration: 9:00-10:00

Start of the workshop: 10:00

Morning

Chairs: H el ene Magaud/Frederik Verdonk

- 10:00-10:15 **Welcome and introduction (ECHA)**
- 10:15-10:50¹ **The EUSES tool for environmental risk assessment: past and future (Dik van de Meent, Jaap Struijs, ARES/Radboud University Nijmegen)**
- 10:50-11:10 **ECETOC Modelling Workshop 2017: Outcome & Reflections on EUSES (Diederik Schowanek, Procter Gamble/ECETOC)**
- 11:10-11:30 **Exposure assessment principles and EUSES under REACH (Romanas Cesnaitis, ECHA)**
- 11:30-11:50 **Exposure assessment principles and EUSES under BPR (Heike Schimmelpfenning, ECHA)**
- 11:50-12:35 **EUSES development plan and interlink with Chesar (H el ene Magaud, ECHA)**

12:45-13:45 Lunch break

Afternoon

Chairs: Romanas Cesnaitis/Diederik Schowanek

- 13:45-14:15 **Priority setting criteria for ranking update needs (Anna Hadam)**
- 14:15-15:45 **Current limitations and update needs identified by organising committee: Part 1 (Organising committee members)**
- 15:45-16:15 Coffee break**
- 16:15-17:45 **Current limitations and update needs identified by organising committee: Part 2 (Organising committee members)**
- 17:45-18:00 **Closing of the day**

18:00 End of Day 1

¹ The Q&A times are integrated within each presentation time.

5 June 2018

Start: 9:00

Chairs: Paul Mason/Joost Baker

9:00-9:30 **Stakeholders in the EUSES development: organisational structure, roles and process (Alejandro Garabatos, Cefic)**

9:30-9:50 **UK exposure model project (Sara Martin, Environment Agency, UK)**

9:50-10:15 **Future developments in environmental risk assessment: toxic pressure calculation with SimpleBoxTreat (Dik van de Meent, Jaap Struijs, ARES/Radboud University Nijmegen)**

10:15-10:30 **Introduction to *World Café* concept and topics to be discussed (Romanas Cesnaitis, ECHA)**

10:30-11:00 Coffee break

11:00-13:00 ***World Café***

Group discussion topics:

- 1) EUSES tool development: user experience with current tool and wishes for the future
- 2) Current limitations and update needs (topics decided on the basis of day 1 voting by participants)
- 3) Current limitations and update needs topics decided on the basis of day 1 voting by participants)

13:00-14:15 Lunch break

14:15-15:15 **Presentation of results of *World Café* session**

15:15-15:45 **Plenary discussion**

15:45-16:00 **Workshop wrap-up and future outlook (ECHA)**

16.00 End of workshop

Appendix 2. List of participants

First name	Last name	Company/organisation
Stéphanie	Alexandre	Anses
Claire	Anderson	HSE-CRD (UK competent authority)
Joost	Bakker	RIVM
Peter	Baricic	DG GROW
Gabriele	Bartolini	ECHA
Rebekka	Baumgartner	Federal Office for the Environment (BAFU)
Maren	Bode	EBRC Consulting GmbH
Alessandro	Casellato	Zapi (representing Cefic - EBPF)
Romanas	Cesnaitis	ECHA
Estelle	Cohet	SOLVAY
Craig	Davis	ExxonMobil
Pierre	Deceuninck	ECHA
Victor	Dias	EquiTox
Christopher	Dobe	Syngenta Crop Protection
Stefano	Frattini	ECHA
Alejandro	Garabatos	Cefic
Todd	Gouin	TG Environmental Research
Marius	Gudbrandsen	Miljødirektoratet
Anna	Hadam	Office for Registration of Medicinal Products, Medical Devices and Biocidal Products (Polish competent authority)
Casper	Hamwijk	Shin-Etsu Silicones Europe BV/Reconsile/ CES
Agnieszka	Jankowska	Bureau for Chemical Substances
Karen	Jenner	Givaudan
Lena	Konovalenko	Swedish Chemical Agency (Kemi)
Stephen	Lofts	NERC Centre for Ecology and Hydrology, Lancaster, UK
Hélène	Magaud	ECHA
Sara	Martin	Environment Agency, UK
Paul	Mason	SC Johnson (Cefic)
Claire	McMillan	Cambridge Environmental Assessments
Mario	Nagtzaam	DG SANTE
Eugenia	Nogueiro	ECHA
Laura	Padovani	EFSA
Joris	Quik	RIVM, Centre for Sustainability, Environment and Health
Katja	Ribbers	SCC GmbH

Jean-Paul	Rila	International Flavors & Fragrances I.F.F. (Nederland) B.V.
Heike	Schimmelpfenning	ECHA
Frank	Schnoder	Dupont
Diederik	Schowaneck	Procter & Gamble Global Product Stewardship
Katrin	Schutte	DG ENV
Markus	Schwarz	Forschungs- und Beratungsinstitut Gefahrstoffe GmbH (FoBiG)
Maurizio	Silvani	BASF SE
Georg	Streck	DG GROW
Eleni	Tsitsiou	ECHA
Nathalie	Valloton	The Dow Chemical Company
Dik	van der Meent	Association of Retired Environmental Scientists
Frederik	Verdonck	Arche Consulting (Eurometaux)
Yves	Verhaegen	Concawe
Benedikt	Weber	Dr Knoell Consult

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