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Quality assurance guidelines

and

Procedures on science advice for policy and society

September 2023

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1. Introduction

1.1. About this document

This document comprises the SAPEA quality assurance guidelines and procedures on science advice for policy and society. These guidelines and procedures are published to inform the scientific community, stakeholders, policymakers and society about the steps taken by SAPEA to ensure scientific excellence, minimise bias, and maintain independence in the process of science advice.

1.2. About SAPEA

SAPEA is part of the European Commission's Scientific Advice Mechanism (SAM), together with the Group of Chief Scientific Advisors and a secretariat¹ in the Commission's Directorate-General for Research and Innovation. The SAM provides independent scientific advice to European Commissioners to support their decision-making.

In view of the increasing complexity of global challenges, science advice for policy needs to include all relevant fields of scientific expertise. 'Science' in this context includes the broadest range of disciplines, in the same sense as the German word 'Wissenschaft'. In its Working Groups, SAPEA brings together outstanding expertise from natural sciences, engineering, technology, medical, health, agricultural and social sciences, and the humanities.

The mandate of the SAM is 'to provide high quality and independent science advice to the European Commission on matters of importance to Commission policy making, in as transparent and unbiased a manner as possible.'2

According to its grant agreement, SAPEA provides at the request of the European Commission 'targeted scientific evidence in a timely and transparent manner to inform the production of science advice by the Group of Chief Scientific Advisors while ensuring the highest scientific quality, developed by complete and independent evidence analysis and synthesis. [...] SAPEA assembles interdisciplinary Working Groups of scientific experts. The Working Groups produce Evidence Review Reports or other scientific inputs for the Chief Scientific Advisors.

[...] The Evidence Review Reports produced by the SAPEA Working Groups, provide a comprehensive overview of current knowledge on a scientific topic including substantive findings, as well as theoretical and methodological contributions. An Evidence Review Report describes, summarises, evaluates, and clarifies the evidence, as well as the uncertainties and knowledge gaps in a systematic manner. It also includes a critical appraisal of the evidence, evidence-based conclusions, and evidence-based policy options. The Evidence Review Reports inform the Scientific Opinions of the Group of Chief Science Advisors.'

For each Evidence Review Report, a SAM Coordination Group³ is established to facilitate the interactions between the Group of Chief Scientific Advisors, SAPEA and The Secretariat.

¹ European Commission DG Research & Innovation, Unit 02 – Science Policy, Advice and Ethics

² How the European Commission's Scientific Advice Mechanism produces scientific advice to support policy making, Scientific Advice Mechanism, 2019

³ This is a topic-specific configuration of the Group according to <u>Article 8 of their Rules of Procedure</u>

2. Principles of SAPEA's science advice

2.1. General principles

The main goals of science advice for policy are to inform policymakers and to contribute to evidence-informed policymaking.

Science advice by SAPEA relies on the following principles:

- **Relevance** is achieved through an open and inclusive dialogue about major societal challenges between policymakers and scientists, to construct a shared understanding of the policy issue and the key questions that need to be answered. Both the policy context and the scientific questions to be answered are presented in a Scoping Paper, which forms the basis for the Evidence Review Reports or other outputs of the science advice process.
- Excellence is achieved through detailed and transparent selection procedures for Working Group members. Excellence is the main criterion in this process, along with the relevance of the candidate's expertise to the topic. The quality of the SAPEA Evidence Review Reports is inherently related to the excellence of scientific experts, as endorsed by the judgement of their peers and manifested in their various careers and research activities, including those beyond traditional forms of scientific output. The evaluation of scientific excellence takes into account the principles agreed by the Coalition for Advancing Research Assessment.⁴
- Transparency is achieved by publishing guidelines on the science advice process and gathering
 of evidence. Transparency is essential for building trust and maintaining legitimacy with the
 stakeholders of science advice, including the policymakers, governments, scientific communities
 and the public.
- **Independence:** SAPEA is independent in the preparation of the Evidence Review Reports. In addition, experts involved in SAPEA working groups must be independent from financial and other vested interests and act in the public interest.
- **Diversity** is a major consideration that helps to compensate for individual biases, and to provide sound, high-quality science advice. This includes diversity in the range of pertinent disciplines covered in each Working Group, as well as in the members' social and geographical backgrounds and career stages, and the intersections of these parameters.
- **Clarity about uncertainty**: Where there are uncertainties in scientific evidence, SAPEA's science advice aims to provide clarity about what is known, partially known, unknown, and unknowable at the moment of publication.
- **Ethics:** SAPEA works in compliance with ethical principles with respect to human rights, environmental rights and the European Code of Conduct for Research Integrity.

2.2. Strategy of diversity and inclusiveness

Science advice for policy is not only transnational and transdisciplinary, but also requires participation of experts with different perspectives and experiences. To address these requirements, SAPEA follows a dedicated Strategy of Diversity and Inclusiveness which is considered at all stages, such as in selecting experts, forming selection committees and establishing other groups. It is also considered when planning the target audiences of communications activities.

The strategy includes the following elements of diversity:

• Inter- and multi-disciplinarity

⁴ The Coalition for Advancing Research Assessment, 2022, <u>Agreement on Reforming Research Assessment</u>

- Involvement of experts from the wider scientific community, who are not Fellows of academies
- Inclusion of early-career and mid-career researchers
- Gender
- Wide geographical coverage (notably, dedicated resources are allocated to ensure adequate participation of experts from Widening countries⁵)

SAPEA also takes into account intersections of these parameters as a source of diversity ('intersectionality').

2.3. Ethics and research integrity

According to article 14 of SAPEA's grant agreement, SAPEA is obliged to work 'in compliance with ethical principles (including the highest standards of research integrity) and applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms and its Supplementary Protocols'. In addition, SAPEA must pay 'particular attention to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of persons, the right to non-discrimination, the need to ensure protection of the environment and high levels of human health protection'. Moreover, SAPEA must respect the fundamental principle of research integrity as set out in the European Code of Conduct for Research Integrity of ALLEA.

3. SAPEA quality assurance guidelines on science advice for policy and society

The following guidelines apply to SAPEA Board members, SAPEA staff and science writers, members of SAPEA Working Groups, and other experts and contributors who are involved in SAPEA reports, including peer reviewers.

- SAPEA ensures that Evidence Review Reports are based on the most up-to-date scientific evidence available across all relevant disciplines.
- SAPEA's interdisciplinary Working Groups have the full range of expertise required for the topic.
- SAPEA ensures that results are presented in a scientifically balanced way.
- SAPEA follows the principles of its strategy of diversity and inclusiveness.
- When differences in scientific views among the Working Group cannot be resolved, SAPEA ensures that they are clearly identified and explained in the reports.
- SAPEA Evidence Review Reports undergo a double-blind peer review process.
- Members of SAPEA Working Groups are required to fill in a Declaration of Interests form.
 These Declarations are assessed, considered and published by SAPEA in order to ensure transparency and independence of the advice.
- SAPEA publications detail the process by which results were obtained, the source of funding for the project, names and affiliations of all those involved.
- SAPEA adheres to the FAIR principles for data management,⁶ and the principles of Open Science.⁷

⁵ https://<u>rea.ec.europa.eu/horizon-europe-widening-who-should-apply_en</u>

⁶ https://www.go-fair.org/fair-principles/

⁷ https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/open-science en

4. Responsibilities of the SAPEA Board

The SAPEA Board is SAPEA's highest decision-making body. It is composed of the elected Presidents of the Networks of Academies participating as partners in SAPEA.

With respect to quality assurance, the SAPEA Board approves:

- A Lead Network for a scientific topic, see <u>section 5.2</u>.
- The project outline for a scientific topic, see <u>section 5.2</u>.
- The Working Group Chair(s), see <u>section 5.3.1</u>.
- The composition of the Selection Committee, see section 5.3.2.
- The composition of the Working Group, <u>section 5.3.2</u>, with particular attention to the Strategy of Diversity and Inclusiveness, see <u>section 2.2</u>.
- The Declaration of Interests assessment reports, see <u>section 5.4.2</u>.
- The granting of a waiver, see section 5.4.3.
- The list of participants of the Expert Workshop, see <u>section 5.8</u>.
- The Expert Workshop Report, see <u>section 5.8</u>.
- The peer reviewers, see <u>section 5.9.2</u>.
- The peer review report, see <u>section 5.9.3</u>.
- The Evidence Review Reports and other scientific publications, see <u>section 5.12.</u>
- The establishment of an ad-hoc committee on scientific integrity and approval of the recommended appropriate follow-up actions, see section 5.11.
- The Quality Assurance Checklist, see Appendix 5.
- The quality steps for other forms of scientific input, see section 6.
- Changes to the quality assurance guidelines (this document).

5. SAPEA's science advice process

5.1. Definition of the scope of the topic and questions to be answered

A request to the SAM from the European Commission is set out in a Scoping Paper which includes the scientific question(s) to be addressed, the reasoning for the request, the policy context, background, and the timeline.

SAPEA can be requested by the European Commission to be involved in the preparation of a Scoping Paper, for example, if particular scientific expertise, the organisation of scoping workshops, literature reviews or policy landscape overviews are needed to develop the scoping paper.

Before accepting a request, SAPEA assesses its feasibility, taking into account capacity and resources.

5.2. Project outline

Once the SAPEA Board has agreed to work on a topic, a Lead Network of Academies is chosen and SAPEA agrees on a project outline which includes the general methods employed and the expected schedule. A summary of the project outline is published on the website and is updated regularly.

5.3. Selection and approval of the Chair(s) and members of the Working Group

5.3.1. The Chair(s) of the Working Group

The Chair(s) of a Working Group leads the whole process of evidence gathering and assessment which results in the preparation of an Evidence Review Report. The Lead Network proposes the Chair(s) of the Working Group. The SAPEA Board takes the final decision to appoint the Chair(s).

Criteria for selecting the Chair(s) include experience in leadership and the science policy interface, knowledge of the subject and track record of scientific excellence. Depending on the topics, a co-Chair(s) or vice Chair(s) can also be appointed.

The Declaration of Interest form of the Chair(s) are assessed by the Lead Network as soon as the Chair(s) is identified, and before the rest of the Working Group is selected.

5.3.2. Nominations, selection, and composition of the Working Group

The SAPEA Networks of Academies and their member academies are requested to nominate experts for the Working Groups. A call for nominations is issued, describing the expertise required. Experts nominated by academies do not have to be Fellows (members) of academies.

Suggestions for experts for the Working Group are also welcome from the Group of Chief Scientific Advisors, the Secretariat and others.

The Lead Network is responsible for pre-screening experts for their fit to the topic, based on their full CV.

A selection committee is then formed, composed at least of the Working Group Chair(s), a second independent topic expert, the SAPEA Board member from the Lead Network and a SAPEA Board Member from a partner Network. The Lead Network can invite additional people to join the selection committee, in order to meet the criteria and targets described in the strategy of diversity and inclusiveness (see section 2.2).

The selection committee chooses Working Group members from the list of nominations based on the two main criteria of scientific excellence and relevance of expertise for the scientific topic, in addition to the criteria described in the strategy of diversity and inclusiveness. The committee ensures that the Working Group as a whole has the full range of expertise required for the topic.

The Lead Network submits the committee's list of nominees to the SAPEA Board for approval, describing how the selection criteria were met.

Beyond the members of the Working Group, further experts may be consulted as contributors to bring significant additional expertise to a certain topic. The scope of their involvement is decided by the Lead Network and the Chair(s), in consultation with the Working Group members.

In exceptional circumstances, new members can be added to the Working Group at a later stage, if required.

5.4. Dealing with biases and achieving independence

Individual biases of experts involved in Working Groups may affect how evidence is selected, perceived and interpreted.

To reduce the risk of biases, SAPEA implements the following measures:

- 1) Diversity and inclusiveness
- 2) Transparency of interests
- 3) Achieving independence by managing interests and conflicts of interests
- 4) Intersubjectivity and inclusion of different scientific views
- 5) Robust scientific quality procedures

These measures may also reduce biases due to the personal values, feelings, political or religious beliefs of Working Group members. These types of biases are not documented or assessed by SAPEA, to respect the expert's data privacy.

Diversity and inclusiveness

Biases may exist when single disciplinary perspectives, cultural backgrounds, gender-related or generational perspectives of Working Group members disproportionately influence the gathering, perception and interpretation of evidence. To tackle these types of biases, SAPEA follows a dedicated strategy of diversity and inclusiveness described in section 2.2.

Transparency of interests

Biases may exist due to the individual interests of Working Group members. The negative impact of biases during the preparation of the Evidence Review Report is reduced by making these interests transparent to the rest of the Working Group and the public. All Working Group members are required to fill in a Declaration of Interests form (Appendix 2). Following the European Commission model, interests in this form are defined as:

- Employment, consultancy, service as advisor, non-numerated post or legal representation
- Membership of managing body, scientific advisory body or equivalent structure
- Research support from a legal entity or body
- Financial interests such as shares or stocks
- Intellectual property such as patents, trademarks, or copyrights
- Involvement in public statements or positions including representing interests or defending an opinion
- Interests of immediate family members
- Other relevant information.

The form requires interests to be declared that are relevant to the field of the activity in question from the past five years. SAPEA publishes the completed forms on its website for a duration of six months after publication of the report.

Achieving independence by managing interests and conflicts of interests

Interests declared by experts in the Declaration of Interests forms (see 5.4.1) are assessed by SAPEA to identify and manage interests and conflict of interests (see 5.4.3).

Intersubjectivity and inclusion of different scientific views

Working Group members aim to find a joint understanding of how evidence is selected, perceived, and interpreted through exchange, sharing of meanings and scientific debate.

This general approach of intersubjectivity may also identify differences in points of view among the Working Group members. Such points of view are not necessarily a conflict of interests and thus do not constitute a ground for disqualification from the Working Group. Rather, SAPEA ensures that these are clearly identified and explained in the Evidence Review Report. This approach may provide additional value for the Group of Chief Scientific Advisors, policymakers and the interested public.

Scientific quality procedures

To ensure the highest scientific quality and to reduce biases, SAPEA has implemented a range of scientific quality procedures outlined in this document, including:

- systematic literature and publications reviews (see <u>section 5.5</u>)
- fact-finding and fact-checking activities (see <u>section 5.6</u>)
- expert workshops to review the draft Evidence Review Report (see <u>section 5.8</u>)
- double-blind peer review (see section 5.9)
- plagiarism checks (see section 5.10)

5.4.1. Introduction to Declaration of Interests forms

Experts involved in the SAPEA Working Group are required to complete a version of the Declaration of Interests form of the European Commission (Appendix 2).8 Experts must fill out, date and sign a Declaration of Interests form and send a copy together with their up-to-date curriculum vitae to SAPEA before attending their first meeting, or contributing to SAPEA's scientific reports in any way.

This form is the same as the one used for assessing the interests of the members of the Group of Chief Scientific Advisors, which is used by the European Commission to identify conflicts of interests in advance of any participation in activities organised under the aegis of the SAM. This allows the use of the same Declaration of Interests form by SAPEA and the European Commission, in particular if SAPEA experts attend European Commission-organised events in addition to SAPEA events. That way, SAPEA Declaration of Interests can be shared with the European Commission to reduce the administrative burden on the experts.

5.4.2. Procedure for handling and assessing the Declaration of Interests forms

- 1. Once the list of candidates with the proposed composition of the Working Group is approved by the Board, SAPEA staff send Declaration of Interests forms to the candidate Working Group members, along with information on how and why to fill out the form.
- 2. With the support of the Euro-CASE Scientific Policy Officer (SPO), the Lead Network SPO assesses the returned Declaration of Interests forms. The assessment process includes internet searches, CV screening, and checking the completeness of the forms.
- 3. The findings are summarised in an assessment report, an internal SAPEA document that highlights potential risks of conflicts of interests. This report is sent to the selection committee.
- 4. The selection committee discusses any potential action. The Lead Network SPO documents the selection committee's opinions, including diverging opinions.
- 5. The Lead Network SPO shares the assessment report with the SAPEA Board, along with a summary of the selection committee's discussions. The Board makes the final decision on any potential action in case of conflicts of interests.
- 6. SAPEA formally reports without delay any identified conflict of interests to the Secretariat.
- 7. The CVs of all Working Group members are shared among the Working Group prior to the first meeting. The Chair will announce at the first meeting if any risks of conflicts of interests were detected, and which measures were undertaken.

Working Group members' Declaration of Interests forms are published on the SAPEA website (with the signature obscured) at the same time as the corresponding report is published and removed after 6 months.

5.4.3. Managing interests and conflicts of interests

According to the European Commission,⁹ a 'conflict of interests means any situation where an individual has an interest that may compromise or be reasonably perceived to compromise the individual's capacity to act independently and in the public interest when providing advice to the Commission in relation to the subject' of the advice in question.

Having declared interests in the Declaration of Interest form therefore does not necessarily mean having a conflict of interests and answering 'Yes' to a question on the form does not automatically disqualify experts or limit their participation in an expert group or sub-group. SAPEA assesses

⁸ <u>Annex 6 and 7 of Commission Decision of 30.5.2016</u> establishing horizontal rules on the creation and operation of Commission expert group

⁹ <u>Commission Decision of 30.5.2016</u> establishing horizontal rules on the creation and operation of Commission expert groups

whether experts have conflicts of interest which could undermine their independence, and takes appropriate measures.

The Chair(s) of the Working Group must always be free of any conflict of interests relevant to the topic.

In the case of a conflict of interests, SAPEA can respond in any of the following ways:

- The expert may be allowed to join the Working Group, under the condition that the
 expert is not involved in activities related to the conflict of interests, such as drafting
 associated chapters, evidence-based conclusions and policy options.
- The expert may be excluded from the Working Group but invited to become a further contributor for a specific sub-area, or to participate in the expert workshop.
- The expert may be excluded from all activities.

There are two additional, exceptional responses:

- A conflict of interests on the part of a Working Group member may be tolerated where the
 individual is deemed to provide a unique contribution to the report. In this case, the Lead
 Network may request the granting of a waiver, by submitting to the SAPEA Board a detailed
 report outlining the reasons supporting the request. The Board makes the decision. Experts
 to whom a waiver has been granted are not eligible to act as Chair(s) or Vice-Chair(s) of the
 Working Group. In such cases, SAPEA will disclose in the Evidence Review Report the conflict
 of interests and the reasons for determining that the individual may continue to contribute
 to the Working Group.
- An interest can be declared as 'interest under observation'. The Lead Network and the
 Working Group Chair(s) monitor such an interest during the preparation of the Evidence
 Review Report. If an interest under observation becomes a conflict of interests, one of the
 measures above may apply.

Any person who is not a Working Group member but is directly involved in the content creation or editing of the Evidence Review Report needs to declare any conflict of interests and can declare any interest that might be perceived by SAPEA as a conflict of interests related to the scientific topic prior to their involvement by filling out the respective Declaration of conflict of interests form (see appendix 3).

The includes contributors (experts who contribute to the Evidence Review Report but are not member of the working group), the person who acts on behalf of the SAPEA Board as representative of the Lead Network, science writers¹⁰, peer reviewers, and SAPEA staff.

If a conflict of interests is declared or detected, the SAPEA Board can respond in the ways described above for Working Group members.

5.4.4. Handling and protection of experts' data

SAPEA is GDPR compliant and committed to respecting experts' privacy.

Personal data is provided by experts involved in SAPEA activities in the form of Declarations of Interests, CVs and other formats such as email. The data is collected and processed for project-related limited purposes only, for example, to:

- Assess if they meet the criteria for participating in SAPEA activities
- Invite them to meetings, such as Working Groups or expert workshops
- Communicate with them

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¹⁰ This applies to every science writer, who may be employed or subcontracted by one of the SAPEA Networks of Academies or seconded from another organisation.

- Inform them about progress and outcomes
- Create a list of participants (name and affiliation) and share it among the participants.
- Mention contributions of experts in reports and meeting minutes (if applicable).

The privacy statement attached to the Declaration of Interests form explains the way SAPEA collects, handles and ensures protection of all personal data provided, the reason for doing so, how that information is used and how the experts may exercise their rights in relation to it (the right to access, rectify, block etc.).

Experts involved in SAPEA Working Groups are informed via information sheets and in meetings about the use of their data and that their name and affiliation will be included in the related publication, for example, in the acknowledgements, and will be published on the project's website. Other personal data will be deleted once not needed anymore for the activities mentioned (data minimisation principle) at the latest 3 months after the activity is completed.

If experts involved in SAPEA activities are also involved in activities of the Group of Chief Scientific Advisors, Declaration of Interests forms can be shared with the European Commission. An informed consent paragraph detailing this procedure is part of the Declaration of Interests forms (Appendix 2) and detailed information sheets are handed over to the experts in this context.

The original versions of the Declaration of Interests forms with the signatures will be kept on record by Euro-CASE (the SAPEA Network in charge of quality assurance) for a duration of 5 years, followed by a transfer to a long-term archive hosted by the SAPEA Coordinator. There will be a review no later than 25 years from that transfer to evaluate whether to keep the data permanently or to delete some or all of it.¹¹

5.5. Literature and publications reviews

Literature and publications reviews are an integral part of SAPEA's evidence review process. Systematic literature reviews can reduce the risk of bias and uncover possible blind spots. Using an established and transparent procedure, they are undertaken by a Review Team in collaboration with topic experts and methodologists.

SAPEA can undertake a range of literature reviews which vary in depth and scope according to requirements and the time available. The Working Group, together with the Review Team, decide which kind of literature review would best inform the Evidence Review Report. The choice of literature review may include (but is not limited to):

- A scoping review, providing an overview of the available body of literature and indicating where most evidence has been published and where possible gaps are.
- A map of the European policy landscape around a topic, detailing the development of European policy and legislation in a specific sector or area.
- A systematic review of the published evidence. Depending on the time available, options range from a full systematic review to a rapid review (a review with systematic elements) or a mapping review (an overview of the peer-reviewed literature within the field).
- Ad-hoc literature searches can be undertaken on specific aspects of a topic, on request from a member of the Working Group, Scientific Advisor or staff of the European Commission.

In depth and extensive literature reviews follow an established process, with an expert advisory group set up to guide the process, working with a Review Team of methodologists (who are expert in designing and conducting systematic reviews), information specialists (who carry out the literature searches) and topic experts (who analyse the results and write up a synthesis). The Review Team,

¹¹ Modelled after the <u>privacy statement</u>, section 7 of the <u>DPR-EC-01066</u> Selection of members of Commission expert groups and other similar entities

together with the Working Group Chair(s) and Members, develop the method statement ('protocol') for the literature review. This is an important aid to reproducibility which is published by SAPEA. It sets out:

- The research question(s) to be addressed
- The search strategy
- Inclusion/exclusion criteria
- Sources to be searched.

Once the method statement has been agreed and signed off by the Working Group, the Review Team conducts the literature search. Results are screened against the inclusion/exclusion criteria. The final set of results is then extracted, analysed, and synthesised into a publishable narrative. The draft of the narrative is peer-reviewed by at least two independent experts in the field.

Depending on its length, the final literature review(s) may form standalone document(s) that are published separately by SAPEA as part of the evidence base.

5.6. Working Group meetings and information-gathering

Gathering of information (for example scientific knowledge, evidence, context, etc.) is done in conjunction with Working Group members via:

- Review of the scientific literature and systematic mapping of the European policy ecosystem.
- Additional meetings, which may include expert hearings, workshops, or other forms of expert
 elicitation and information-gathering such as structured interviews, desk research, meetings
 with stakeholders, and the involvement of further contributors.
- Fact-finding or fact-checking activities.

The Working Group holds its meetings closed to the public in order to attempt to reach a consensus free from outside influence. Interim draft reports or chapters are not published. SAPEA staff ensures that the proceedings of the Working Group are well documented so that there is a clear audit trail showing how the group reached its decisions. These include agendas, minutes, background information, literature sources, and interim papers.

Members of the Group of Chief Scientific Advisors or staff from the Secretariat may attend Working Group meetings as observers in agreement with the Chair(s) and the Working Group.

5.7. Drafting Evidence Review Reports

Evidence Review Reports are guided by the Scoping Paper. They describe, summarise, evaluate and document the evidence in a systematic way and indicate the uncertainties associated with findings. This principle applies as a general rule where judgements about scientific evidence are being made. Depending on the topic and the questions posed, the methods as well as the scale will vary. The report also sets out the methodological approach taken by the Working Group towards the questions posed.

The Working Group members draft the Evidence Review Reports based on their discussions and on the results of the literature reviews, usually with the support of a science writer. When a report reaches the final draft, it is the responsibility of the Working Group Chair(s) to ensure that all references are cited and referenced accurately to the best of their knowledge.

5.8. Expert Workshop

SAPEA organises an Expert Workshop for every topic to provide a critique of the first complete draft of an Evidence Review Report, or on its key findings. This workshop takes place before the peer-review process and does not duplicate it. The aims of the Expert Workshop are:

 To discuss and review the evidence, especially to tackle blind spots or biases of the members of the Working Group

- To check if the scope and the scale of the evidence and the way it is provided covers the actual discussions in the stakeholder scene
- To discuss the practical applicability of the options proposed in the Evidence Review Reports, to
 ensure they have practical implications for real world scenarios, on timescales that are relevant
 for EU policy development.
- To perform a critical appraisal (benchmarking) of the evidence.

To refine the draft evidence-based policy options in the Evidence Review Reports Expert Workshop participants are scientists or experts on the respective topic, preferably with applied knowledge in the field. The lead Scientific Policy Officer(s) for the Expert Workshop compiles a list of experts, that can be based partly on previous nominations from Networks of Academies and their member academies, but mainly on new suggestions by the Group of Chief Science Advisors and the Secretariat, by the Working Group Chair(s) and Working Group, and further desk research, based on acquired knowledge of the field. The selection criteria should be:

- Scientific background with applied or policy context knowledge in the field
- Complementarity of backgrounds, expertise and interests to cover topics covered in the Evidence Review Reports and 'real-life' issues
- Institutional balance (industry, NGOs, CSOs, policy, SMEs, trade unions...)
- Geographically balanced representation of Europe
- Gender balance
- Inclusion of early and mid-career experts

The list of participants is subject to approval by the SAPEA Board.

5.9. Double-blind peer review

5.9.1. Principles of peer review

All SAPEA Evidence Review Reports are subject to peer review.

As a general rule, the peer review covers:

- 1. The scientific/technical quality of the work
- 2. The completeness of the analysis, ensuring that it includes the full range of information and opinions
- 3. Impartiality and objectivity
- 4. When appropriate, whether the report addresses the questions of the Scoping Paper

SAPEA follows a double-blind peer review process, which means that reviewer and author identities are concealed from each other throughout the review process. The names and affiliations of the reviewers are included in the final report.

5.9.2. Peer reviewers' nomination and selection

The review is conducted by experts not involved in drafting the report. The Lead Network collects reviewer nominations from SAPEA Networks, as well as suggestions from other stakeholders and self-nominations. The Lead Network also establishes the criteria for peer reviewer selections, in particular the areas of expertise needed.

In order to maintain the double-blind process, another SAPEA Network takes over the selection, approval and organisation of the peer review process.

The number of peer reviewers is set at a minimum of three and a maximum of ten. Peer reviewers need to declare any conflict of interests and can declare any interest that might be perceived by SAPEA as a conflict of interests related to the scientific topic prior to their involvement to the Network in charge of peer review by filling out the respective form (see appendix 3). prior to their involvement in the review process of the Evidence Review Report. If a conflict of interests is declared

or detected, the SAPEA Board may disqualify or limit the involvement of this person in the peer review.

5.9.3. Peer reviewers' comments and revision of documents

An example of guiding questions for peer reviewers is provided in Appendix 4 to support their review. Peer reviewers' comments are collected and assessed first by the SAPEA Network in charge of peer review, then anonymised and discussed with the Chair(s) of the Working Group and Lead Network.

Comments which need to be discussed by the Working Group are handed over to the Working Group members, who are asked to take into account the feedback of the reviewers and to revise the report if needed. The Working Group responds to, but need not agree with, the reviewers' comments, outlining how the remarks made by the reviewers have been addressed.

To increase transparency, each report includes an annex which describes the peer review process, the reviewers' comments and how the report was adapted in response to them.

5.10. Plagiarism check

SAPEA does not tolerate plagiarism. All SAPEA scientific reports undergo a plagiarism check before being published. The purpose of this plagiarism check is to ensure that citation practices in Evidence Review Reports meet the highest scientific standards, with proper attribution made to the work of others.

SAPEA uses plagiarism-check software to check whether the text is correctly referenced. Where necessary, action is taken to address any problems, for instance by adding reference(s) or revising the text.

5.11. Ad-hoc ethics committee on scientific integrity (if required)

The SAPEA Board may establish an ad-hoc ethics committee in response to concerns regarding scientific integrity in a SAPEA Working Group. The committee will be composed of up to four relevant experts independent from the Working Group. The committee will be asked to recommend appropriate follow-up actions to the SAPEA Board.

5.12. Endorsement of reports

After the reviewers' comments have been addressed by the Working Group, the report is ready for endorsement by the SAPEA Board. The final version of the report is submitted together with the reviewers' comments, the Working Group's response and the changes made in the report.

Each member of the Board endorses the report on behalf of their Network. How the endorsement process is performed within each Network is the responsibility of the president of that Network.

In the exceptional case where a Network does not endorse the final report, a disclaimer is included in the report outlining the reasons for this decision.

5.13. Handover to the Group of Chief Scientific Advisors

Once the final report has been endorsed by the SAPEA Board, it is handed over to the Group of Chief Scientific Advisors to support the development of their Scientific Opinion.

5.14. Publication and communications

All SAPEA reports, including any substantive revised versions, are published according to the Open Access green model and deposited in an appropriate trusted open repository. They are also made available to download from the SAPEA website.

In line with the SAPEA principle of transparency, every Evidence Review Report contains:

- An executive summary
- A description of the background and request from the European Commission
- Several chapters describing and summarising the evidence
- A chapter on conclusions and evidence-based policy options
- References
- A list of the name and affiliations of the Working Group members
- A description of the process of selecting the Working Group members, the involvement of the Advisors and The Secretariat, the systematic literature review, the Expert Workshop and the peer review
- Acknowledgements of all further people involved in the preparation of the Evidence Review Report.

SAPEA works with European Commission colleagues in the Secretariat to disseminate and publish SAPEA reports, according to a communications plan tailored to the content of each report. If the quality of an Evidence Review Report is challenged, SAPEA may react, for instance by means of a rebuttal article.¹²

In line with Plan S principles, SAPEA ensures that any scholarly articles or other publications directly produced in the framework of the SAPEA project are published in open access journals.

5.15. Data Management

In line with its commitment to Open Science and FAIR principles, SAPEA has a published data management plan which describes how SAPEA collects, processes and stores datasets. In the case of SAPEA evidence reviews, this pertains principally to bibliographic data.¹³

All datasets arising from SAPEA are uploaded to a trusted repository. To aid discoverability and accessibility, a Digital Object Identifier is allocated to each dataset, along with rich metadata. Bibliographic datasets are published under a Creative Commons CCO licence, which provides data free of any restrictions. Back-up copies of datasets are kept and maintained securely by the project coordinator, acatech.

5.16. Version control

Once published either electronically or in print, each report is assigned a version number which is included at the beginning of the report. Any future revision of the report (whether substantive or making minor corrections) is given a new version number and all subsequent versions include a version history table describing the changes.

6. Rapid Evidence Review Reports and other forms of scientific input

6.1. Rapid Evidence Review Reports

When the deadline set by the European Commission to prepare an Evidence Review Report is very short, SAPEA can prepare a Rapid Evidence Review Report. A Rapid Evidence Review Report is:

¹² For more details of the communications activities undertaken by SAPEA and the SAM, see https://sapea.info/wp-content/uploads/sam-communications-strategy.pdf

¹³ https://sapea.info/wp-content/uploads/sapea-data-management-plan.pdf

- produced by at least two project co-chairs or a small Working Group (10 members or less)
- evidence gathering is achieved through evidence gathering expert workshops as well as literature reviews.
- There is no expert workshop (as described in section 5.7.

All other quality steps outlined in section 5 also apply to the Rapid Evidence Review Process.

6.2. Quality assurance for other forms of scientific input

According to the SAPEA grant agreement, SAPEA is committed to 'develop novel and improve existing forms of scientific input to address short-term needs of the Group of Chief Scientific Advisors in a timely, reliable, policy-relevant and efficient manner', in addition to Evidence Review Reports. The grant agreement mentions examples such as 'initial literature searches on specific questions, the organisation of targeted workshops, the production of ad-hoc analysis and synthesis papers'.

These quality assurance guidelines and procedures provides the standard methodology and quality assurance steps which need to be followed to prepare an Evidence Review Report. If SAPEA provides other forms of scientific input, these inputs do not have to follow all the steps described. They have their own methodology and quality procedures, which will be described in the publication and approved by the SAPEA Board in advance.

7. Quality assurance checklist

Euro-CASE, as SAPEA Network responsible for quality assurance, stores all the checklists and monitors compliance with the quality assurance guidelines for all SAPEA reports.

For each report, a Quality Assurance Checklist (Appendix 5) is filled out by the responsible SAPEA staff member and submitted to the SAPEA Board on completion of the project.

Appendix 1: Bibliography

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Appendix 2: Declaration of Interest form

STANDARD DECLARATION OF INTERESTS (DOI) FORM

Definitions:

"Activity" or "Activities" (capitalised 'A') means an activity or activities of or under the Group of Chief Scientific Advisors for instance in its formation as Coordination Group or in sub-groups, or that or those in relation thereto, for example, SAPEA Working Groups.

"Conflict of interest" means any situation where an individual has an interest that may compromise or be reasonably perceived to compromise the individual's capacity to act independently and in the public interest when providing advice to the Commission in relation to Activities performed.

"Immediate family member" means the individual's spouse, children and parents. "Spouse" includes a partner with whom the individual has a registered non marital regime. "Children" means the child(ren) the individual and the spouse have in common, the own child(ren) of the individual and the own child(ren) of the spouse.

"Legal entity" means any commercial business, industry association, consultancy, research institution or other enterprise whose funding is significantly derived from commercial sources. It also includes independent own commercial businesses, law offices, consultancies or similar.

"**Body**" means a governmental, international or non-profit organisation.

"Meeting" includes a series or cycle of meetings.

Please answer each of the questions below. If the answer to any of the questions is "yes", please briefly describe relevant interests and circumstances, as appropriate.

If you do not describe relevant interests and your DoI form is considered to be incomplete, or if declared interests are considered to constitute a Conflict of Interest, you may be excluded from all or part of the Activities.

First name:	
Family name:	
Date:	
Description of the Activity: []	

1	EMPLOYMENT	CONSULTANCY AND	LEGAL REPRESENTATION
---	-------------------	-----------------	----------------------

	Within the past 5 years, were you employed or have you had any other professional relationship with a natural or legal entity, or held any non-remunerated post in a legal entity or other body with an interest in the field of the Activity in question?				no
1a	Employment				
1b	Consultancy, includi	ing services as an adviso	or		
<i>1c</i>	Non-remunerated po	ost			
1d	Legal representation	1			
activi	ity	time period (from until month/year)	name of entity or body	description	
2	EQUIVALENT STI	RUCTURE	SCIENTIFIC ADVISORY		1
	making of a legal of Activities in quest	entity or other body w ion or have you part	pated in the internal decision ith an interest in the field o ticipated in the works of ghts on the outputs of tha	f a	no
2a	Participation in a de	ecision-making process			
2b	Participation in the	Participation in the work of a Scientific Advisory Body			
Activity		Time period (from until month/year)	Name of legal entity or body	Description	!

2	DECEADOIL	CLIDDADT
3	RESEARCH	SUPPURI

	Within the past 5 years, have you, or the research entity (institute or department) to which you belong, received any support from a legal entity or other body with an interest in the field of Activities in question?					no
<i>3a</i>	Research support	t, including grants, rents,	sponsorships, fe	llowships, non	- 🗆	
Activ	ity	Time period (from until month/year)	Name of le body	gal entity or	Description	ı
4	FINANCIAL INT					
	field of Activitie and which amo	rent investments in a leg s in question, including unts to more than 10, a voting right of 5% or a	holding of stock 000 EUR per l	ks and shares egal entity o	,	no
4a	Shares					
<i>4b</i>	Other stock					
Inves	tment	Name of le	egal entity	Descri	iption	

5	INTEL	LECTUAL	PROPERTY

	Do you have any intellectual property rights that might be affected by the outcome of the Activities in question?			that might be affected by	yes	no
5a	Patent, trademarks, o	 or convrights				
5b	17. 0					
Intel	lectual property		Descrip	otion		
6						no
6a	-	r other body as pa	art of a	regulatory, legislative or		
6b	judicial process Represented interes	ts or defended an	oninior	<u> </u>		
			T Description	l I		

7a	To your knowled members which providing advice question?	en			
Inter	ests	Time period (from until month/year)	Name of legal entity or body	Description	!
7 b	them about the c	collection and publication are them with the privacy s	bers are declared, it is your res n of information on their inte statement attached to the guida e DoI form with the Commissio	rests included ince for filling	l in the
8		ANT INFORMATION	V		no
				yes	_
8a	· ·	hen providing advice to	be seen as undermining you the Commission in the field o		

INTERESTS OF IMMEDIATE FAMILY MEMBERS

7

yes

no

Des	scr	ip	<u>tic</u>	n:

I hereby declare on my honour that I have read the guidance for completing this form. I also declare on my honour that the information disclosed in this form is true and complete to the best of my knowledge.

Should there be any change to the above information, including as regards upcoming activities, I will promptly notify the competent department or entity and complete a new DoI form describing the changes in question.

I am informed that my personal data are stored, processed and published in accordance with the applicable data protection legislation.

I have been informed that this form may be shared with the European Commission and will be publicly available once the SAPEA report is published.

Date:	Signature:

Appendix 3: Declaration of conflict of interests form

Declaration of conflicts of interests form

Name:
Role:
(e.g., Lead Network Representative, Scientific Policy Officer, Communications Staff, Science Writer, Peer Reviewer, etc.)
Scientific Topic: (Name of Scientific Topic according to the Scoping Paper)
'Conflict of interests' means any situation where an individual has an interest that may compromise or be reasonably perceived to compromise the individual's capacity to act independently and in the public interest when providing advice to the Commission in relation to Activities performed.
In compliance with the 'SAPEA quality assurance guidelines and procedures on science advice for policy and society' section on 'Managing interests and conflicts of interests', any person directly involved in the content creation or editing of the Evidence Review Report needs to declare any conflict of interests related to the scientific topic prior to their involvement.
Having a declared interest or conflict of interests does not automatically disqualify you from participating in SAPEA activities. SAPEA will assess this declaration and come back to you.
Please declare any conflict of interests and any interest that might be perceived by SAPEA as a conflict of interests in relations to this scientific topic. Please specify the time period affected (within the past 5 years), organisation (if applicable) and why this interest creates or might be perceived as a conflict of interests by SAPEA.
I hereby declare on my honour that the information disclosed in this form is true and complete to the best of my knowledge. Should there be any change to my situation, including as regards upcoming activities, I will promptly notify SAPEA and provide relevant information describing the changes in question.
I consent that my name, affiliation and my role in the SAPEA activities will appear in the Evidence Review Report. I am informed that my personal data are stored, processed and published in accordance with the applicable data protection legislation.
Date: Signature:

Appendix 4: Response form for peer reviewers

Response form for peer reviewers of the SAPEA Report 'NAME OF REPORT'

Name of reviewer:	
Date of review:	

Question	Yes/no/ partially	Comments
Does the report address satisfactorily the three central questions posed in the scoping paper?		
Note that the SAPEA report contains a summary of the evidence, a critical appraisal of the evidence and may also include policy options. The Group of Chief		
Scientific Advisors will formulate policy recommendations in their Scientific Opinion, based on the SAPEA report. Both reports together are the answer of the		
Scientific Advice Mechanism to the scoping paper. Does the report cite and rely on up-to-date literature? Are the bibliography and		
any appendices relevant, given the purpose of the report? Does the executive summary concisely and accurately describe the key findings		
and conclusions? Is it consistent with the rest of the report? Is it sufficiently effective as a standalone summation of the report?		
Do the arguments advanced in the report show the requisite degree of analytical rigour? Does the report deal competently with data (as applicable) and analyses?		
Are the conclusions and policy options well-supported by the scientific evidence?		
Are the relevant uncertainties or gaps in the scientific evidence base acknowledged and addressed explicitly in the report?		
Overall, has SAPEA produced an objective report? Are there signs of biases or undue influence from individuals or interest groups?		
If you believe the report can be improved significantly, what improvements do you suggest?		

Appendix 5: Quality Assurance Checklist

Quality Assurance Checklist

Scientific Topic:		
Name of lead SPO:		
Date:		

	Quality item	Response	Date of completion	Comments
1.	Are all SAPEA staff/representatives involved in this project aware of the 'SAPEA quality assurance guidelines and procedures on sci-			
	ence advice for policy and society'?			
2.	5 · [
	Chair(s) informed about the relevant parts			
	of the 'SAPEA quality assurance guidelines			
	and procedures on science advice for policy			
	and society'?			
3.	Was the ERR prepared based on a Scoping Paper?			
4.	Did the Chair(s) of the Working Group sign a DOI form? Was the DOI form assessed by the Lead Network and the selection of the Chair approved by the Board?			
5.	Was a Selection Committee appointed with			
	a composition as outlined in the 'SAPEA quality assurance guidelines and procedures			
	on science advice for policy and society' (at			
	least the Working Group Chair(s), a second			
	independent topic expert, the SAPEA Board			
	member from the Lead Network and a SA-			
	PEA Board Member from a partner SAPEA			
	Network)? Was the Selection Committee			
	made aware of the criteria and targets de-			
	scribed in the Strategy of Diversity and Inclu-			
	siveness?			
6.	Did all the Working Group members sign a			
	Dol form? Was the Dol assessment report			
	reviewed by the Selection Committee and			
	approved by the Board?			
7.	Did the person who acted on behalf of the			
	SAPEA Board as representative of the Lead			
	Network and any person directly involved in			
	the content creation or editing of the Evi-			
	dence Review Report declare any conflict of interests or interest that might be perceived			
	by SAPEA as a conflict of interests prior to			
	their involvement?			
	then hivorveillent;			

	E a contributors loynorts who contribute to		
	E.g. contributors (experts who contribute to		
	the Evidence Review Report but are not		
	member of the working group), science writ-		
	ers, and SAPEA staff.		
8.	Were all Working Group meeting minutes		
	recorded and approved?		
9.	Were SAM Coordination Group meetings		
	with the GCSA and the Secretariat held?		
10.	Was the Expert Workshop conducted and its		
	report published?		
11.	Has the ERR been peer-reviewed? By how		
	many reviewers?		
12.	Did you follow the double-blind procedure?		
13.	Was the plagiarism check conducted and is		
	the text in the ERR correctly referenced?		
14.	Were all datasets related to this ERR up-		
	loaded to a trusted repository, as required		
	by the DMP?		
15.	Has the SAPEA staff team saved all relevant		
	project documents under the corresponding		
	folder in the SAPEA SharePoint?		
16.	Have all steps and requirements set out in		
	the 'SAPEA quality assurance guidelines and		
	procedures on science advice for policy and		
	society' been followed by the SAPEA staff		
	team? Please, indicate any deviation which		
	occurred in the process of producing the re-		
	port, if any.		

Appendix 6: List of abbreviations

ALLEA: European Federation of Academies of Sciences and Humanities (allea.org)

EMCR: early/mid-career researchers

Euro-CASE: European Council of Academies of Applied Sciences, Technologies and Engineering (<u>euro-</u>

case.org)

FAIR: Findability, Accessibility, Interoperability, and Reuse

SAM: Scientific Advice Mechanism of the European Commission

SAPEA: Science Advice for Policy by European Academies

Appendix 7: Acknowledgements

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Responsible on behalf of the SAPEA board

Patrick Maestro, Euro-CASE (Revision 2022-2023)

Yves Caristan, Euro-CASE (First version 2017 and revision 2019)