



Guidelines on Open Knowledge

Improving the societal benefit of climate research activities

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Executive summary

The *JPI Climate Guidelines on Open Knowledge* summarizes a set of policy recommendations at both internal (i.e. JPI Climate network governance) and external (i.e. JPI Climate network activities) level. They are mainly focused on accessibility issues (i.e. Open Access to research publications and data), keeping in mind the wider context of the so-called “Open Knowledge” approach, i.e. emphasizing the need to make (climate) knowledge creation, transfer and exchange more transparent and interactive in order to contribute to narrow the gap between climate research communities and societal actors. The *Guidelines* are conceived to serve the network of research funders and policy makers involved in the JPI community. In addition, there is an extended version (available at www.jpi-climate.eu) providing practical guidance and detailed examples to the scientific community in its widest sense as well as to non-academic stakeholders (e.g. practitioners, NGOs, civil society) dealing with the various societal challenges Europe is facing.



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JPI Climate establishes the following set of policy recommendations to boost a more effective knowledge management policy in terms of openness (and particularly accessibility).¹ They are divided into two sections, according to their recipient. The first section addresses both the JPI Climate “internal” (i.e. network governance) and “external” (i.e. network activities) operations. The second one is thought for external actors which might not be related to climate research.

JPI Climate internal policy guidelines on Open Knowledge

- 1. Internal accessibility.** According to the “transparency principle” included in the Governance paper,² working documents of general concern should be accessible for all JPI Climate members and partners.
- 2. Open licensing.** The use of the Creative Commons (CC) “public domain” license (CC0) when publishing any kind of internal document foster the proper management of intellectual property and the broad distribution and use of information.
- 3. Open formats.** The use of open formats, i.e. ODF (e.g. *.odt, *.ods, *.odp) for working documents is encouraged to allow for broad compatibility.
- 4. Open Access publishing.** Research results being funded in the context of JPI Climate will be published either through (i) Open Access journals, books or proceedings (i.e. “gold” Open Access) or (ii) self-archiving of subscription-based formats incl. embargos (i.e. “green” Open Access). Other possibilities offering restrictive Open Access rights through e.g. national contracts with given publishers are explicitly discouraged.
- 5. Open Data.** Research data and meta-data derived from any funded activity in the context of JPI Climate will be freely available in an existing certified repository under the CC0 license (see point 2). The publication, storage and preservation strategy should be detailed in a Data Management Plan (DMP) to be submitted in the proposal and to be evaluated as a part of it.
- 6. Publishing costs.** Costs related to Open Access and Open Data will be foreseen in the budgets of activities launched in the context of JPI Climate, such as joint calls. Fostering “gold” Open Access will mean financially covering the so-called “Author Processing Charges” (APCs).
- 7. Open Access publishing compliance.** JPI Climate will establish over-mandate incentives and control mechanisms that are required to assure a successful implementation of these recommendations.
- 8. National rules.** These recommendations (1 to 7) will be actively used and disseminated when coordinating research activities in the context of JPI Climate, including workshops, summer schools, symposia and so forth. When funding transnational calls, each funder is explicitly called upon to include these recommendations into their national annex.

Recommendations for funders, researchers and stakeholders³ in the climate research system

- 1. Open licensing.** In order to reconcile the proper management of intellectual property and the broad distribution and use of information and knowledge, the use of the Creative Commons “Attribution” license (CC-BY) and the “public domain” license (CC0) is recommended when dealing with research results and data (including meta-data), respectively.
- 2. Open formats.** The use of open formats i.e. ODF (e.g. *.odt, *.ods, *.odp) in any working document, at least for internal purposes is to be born in mind.
- 3. Open Access publishing.** JPI Climate encourages the publication of research results in Open Access journals, books or proceedings (i.e. “gold” Open Access) and/or self-archiving of subscription-based formats incl. embargos (i.e. “green” Open Access). Other possibilities offering restrictive Open Access rights through e.g. national contracts with given publishers are explicitly discouraged.
- 4. Publishing costs.** JPI Climate encourages policy makers and funding agencies to assume in their budgets those costs related to open access data managing and research results publication, including the so-called Author Processing Charges (APCs), if any.
- 5. Open Data.** Establishing Data Management Plans (DMP) as a required criterion for any publicly funded research activity is explicitly recommended. The DMP should be submitted in the proposal and can be evaluated as a part of it.
- 6. Open Access and Open Knowledge in the Joint Programming “community”.** JPI Climate will promote the use of these guidelines in the European Research Area (ERA) by cooperating with those initiatives promoting common framework conditions in the public-to-public (P2P) community.
- 7. Open Knowledge in the climate research community.** By means of this set of Guidelines (and particularly chapter 5), JPI Climate invites those actors involved in the climate research community to actively promote, design and implement comprehensive open knowledge policies in order to enhance research activities’ societal benefit.

Want to know more?

Further clarification, including concrete suggestions and examples for each recommendation is provided in the [technical annex](#).

Technical Annex: JPI Climate Open Knowledge Policy in Detail

Hereafter further clarification for each above formulated policy recommendation is provided. In order to facilitate its interpretation, this recommendation sample follows the same order as the guidelines themselves.

1. Internal accessibility in JPI Climate

The JPI Climate website intranet is the appropriate platform to share information of internal character.

In order to avoid possible conflicts of interest within the JPI Climate GB on the nature of the information that will be available for any JPI Climate Governing Board (GB) member and partner, the following clause will be used for those documents needing a permanent or temporary confidential character:

“Due to the nature of the information it contains, this document is exempt from the policy guideline no. 1 on internal accessibility and therefore remains confidential.”

2. “Gratis” and “libre” Open access: “Open licensing”

“Open licensing” ensures usage rights beyond the issue of having no-cost (online) service to a given piece of information. Open Access is often associated to free access to (scientific) literature; however, a precise definition of “free” is needed. In this respect, two degrees are usually distinguished: *gratis* Open Access, which is no-cost online access, and *libre* Open Access, which implies free accessibility including some additional usage rights (e.g. downloading, copying, distributing, printing) which can be granted by e.g. using a certain Creative Commons license. Far from being something unreliable at the legal level, the latter are a solid tool whose use has been recently recommended by the European Commission.⁴

How to use the Creative Commons licenses? Coping with the Creative Commons licenses is not particularly challenging; there are just a few key aspects that should be taken into account when using them. In order to get familiar with them, JPI Climate recommends the official Creative Commons website, in which a brief set of best practices in attribution is available.⁵ The Open Access Scholarly Publishers Association (OASPA) also has a very valuable “frequent asked questions” section where the issue on licensing is properly tackled.⁶ Moreover, the *Guidelines on licensing public sector information for Australian government agencies* might be useful for the JPI community in general.⁷

What is the most adequate CC license? JPI Climate recommends using the CC-BY license when dealing with scientific publications, as it is the less restrictive one. When dealing with data (including metadata), JPI Climate recommends using the CC0 license, since it is the only ensuring unlimited access, re-use and re-dissemination. There are practical examples on how to deal with data inter-operability through the use of CC licenses.⁸ In any case, promoting the development of national guidelines for data licensing is strongly recommended.⁹

3. Open formats

Recognising that the new online possibilities to create and share documents (e.g. “Google Docs”, “Prezi”) might lead to a lessen importance of this issue in the future, JPI Climate will ensure the equal treatment of the most used formats and open formats (ODF), since this is the only way to achieve full interoperability in international-based standards (and not in vendor-based file formats). To do so, commitment from every member and partner in the Governing Board in actively fostering open formats at their respective internal units, trying to overcome possible barriers related to readability and functionality.

4. Open Data

Following the example of international institutions like the EEA,¹⁰ JPI Climate advocates for Open Data policies based on the principle that any data (including meta-data) that is produced with public funds belongs to the public, and should therefore be released as open data, being personal data an exception. Even in such cases, methods such as anonymizing of sensitive research data should enable proper and safe reuse.

The GEOSS data sharing principles¹¹ advocate for the following certain minimum criteria that data should comply: full, open, provided with minimum time delay and at the minimum cost. In practice, establishing coherent open data policies requires to clearly defining when, under which conditions and where data generated by the project will be released to be shared. Data Management Plans (DMP) are iterative documents defining responsibilities in the data (and metadata) publication and curation (i.e. collection, monitoring, archiving, maintenance and preservation of digital assets). The most innovative open data policies at national¹² and also EU¹³ level already require DMPs.

There are two issues which may result particularly controversial in this topic, namely the timing by publishing data and the most proper platform to do so. The former issue can be solved in the worst case by establishing retention periods. If funders assure that datasets are not published before the agreed retention period, manuscript can be handed over to funders immediately after a project is finished. The latter issue is more open, since there are many possibilities to deposit a set of data. For climate-related data, the GEOSS portal is explicitly recommended by the EC for JPI Climate.¹⁴ Besides this, several consolidated data repositories are summarized in the Guidelines’ full version Appendix. All of them are recommendable to preserve scientific data, depending on its nature and discipline.

5. Open Access to publications: the ‘green’ and the ‘gold’ paths

Assuming the open debate on what should be the most appropriate strategy for fostering Open Access publishing (either through repositories or through Open Access journals), JPI Climate:

- (i) Adopts the same position than the European Commission (“‘green’ and ‘gold’ can work together”), which is ultimately based on the statement from the Budapest Open Access Initiative (“both paths complementary strategies”).
- (ii) Recognises and actively supports the “Principles for the Transition to Open Access to Research Publications”, which were agreed by the 27 member organisations of “Science Europe” in April 2013.¹⁵
- (iii) Considers that both ‘green’ and ‘gold’ paths actively contribute to make steps towards the adoption of such Principles.

By fostering the “green” road it is crucial to specify where research output is to be deposited. In this respect, JPI Climate (a) recommends using those consolidated repositories¹⁶ as well as those included in the EC’s platform OpenAIRE;¹⁷ and (b) encourages their members and partners to enable and empower those research organisations at their home countries that still have not created a repository to do so if they deem it appropriate.

Furthermore, these Guidelines leave open the possibility to discuss on the convenience to establish an own repository for the publications and data from the research activities funded in the context of JPI Climate or even for all JPIs.¹⁸ A JPI Climate repository might be set up in close collaboration with ESFRI and should lead to a kind of “climate (change) knowledge hub” where climate scientists, modellers, but also social scientists and non-academic stakeholders can co-create knowledge on the basis of such shared data and publications.

The “golden” road seems, in its turn, much more difficult to be implemented in the short-term, since it always colludes with financial issues, namely how to cover to so-called “Article Processing Charges” (APCs). Therefore, ambitious “gold” Open Access policies have to actively work towards offering cost neutrality for researchers, i.e. assuming APCs as part of institutions’ “running costs”. When organising a transnational call, for instance, every research funding institution can put a certain amount of money at the disposal of the applicants, like in the JPI Climate 1st joint call.¹⁹

Another ambitious possibility that JPI Climate might lead would be to support new Open Access venues and/or switching established subscription journals in climate research to Open Access. There is a concrete experience in Physics: the Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP³).²⁰

In practice, an operational way to optimize both roads’ benefits in the short term while minimizing their negative side might be to foster that “[funding agencies’] policy can and should require ‘green’ but only encourage ‘gold’”.²¹ There are concrete examples showing that fostering both “roads” simultaneously is feasible and (as it is argued here) even recommendable.²² In order to make these

policies feasible, when providing payments/subsidies for Open Access venues, JPI Climate aims to meet the following criteria (which are related to point no. 2, 4 and 5 of this technical annex):

Indexing

The journal has to be listed in authoritative databases: Directory of Open Access Journals (DOAJ), Web of Science, Scopus or PubMed.²³

In the case of books, collected volumes, proceedings and other academic publishing venues, basic technical information and peer review procedures have to be transparent on the website of the publishing venue.

Copyright and Re-use (related to point 2 of this technical annex)

- a) Authors hold copyright of their publication with no restrictions.
- b) All publications shall be published under an open license, preferably the Creative Commons Attribution (CC-BY). In any case, the license applied should fulfil the requirements defined by the Berlin Declaration.

Machine Readability (related to point 4 of this technical annex)

Publication full text, metadata, supporting data,²⁴ citations and the status of the publication as Open Access have to be made available in a machine-readable form via open standards.²⁵ Moreover, publishers shall notify authors of any changes occurring in the description of the structure of the data in a transparent way.

Sustainable Archiving (related to point 5 of this technical annex)

Publishers have to make copies of the publication automatically available in registered third-party repositories immediately upon publication. Furthermore, authors must be notified by the publisher on how to access archived OA publications.

Sustainable archiving of publication has to be demonstrated by providing a persistent address where the full content of publication can be accessed, read and downloaded for at least ten years.

Authors may archive any version to any registered third-party repository or website with no delay.

6. Open Access publishing compliance

Securing high compliance levels is key for guarantee that a given policy has its desired outcomes. To do so, controlling measures (including monitoring or tracking publications, or reminding grant-holders by letter) have to be established. The issue on who is going to be responsible for this needs has to be discussed in advance as *sine qua non* condition for such policies to succeed. There are at least 2 possibilities: either public bodies representing the interests of each member country may assume these tasks, or the Governing Board (in the case of JPI Climate) can create a mandate for an existing body or for an ad-hoc created committee.

7. Fostering debates on Open Knowledge policies at national and international level

JPI Climate commits to playing a key role by fostering debates within the national authorities (ministries, national funding agencies and research institutions), and particularly by triggering innovation at national level, regardless of the scientific topic, through:

- Disclosing the whole process after the final funding decision.
- Making the mid-term review event open to everyone.
- Fostering debates on the advantages and disadvantages of using article-level metrics instead of journal-level metrics in evaluation processes (see standard version for further details).

Want to know even more?

There is an extended version of the Guidelines available at

www.jpi-climate.eu

Footnotes

¹ Comprehensive definitions of “openness”, “Open Access” and “Open Knowledge” are exclusively available at the full version of this document (see JPI Climate website).

² See <http://www.jpi-climate.eu/programme/governance/governance-principles> for further information.

³ The term “stakeholder” refers here to organizations and individuals outside the scientific community in terms of change agents and knowledge partners such as policy makers, regulators, citizens, NGOs, municipalities / local authorities or business and industry sectors (see JPI CLIMATE Governance leaflet on www.jpi-climate.eu).

⁴ In a recent press release, the EC recommends open licenses by Creative Commons for re-using a wide range of public data, including environmental data (source: http://europa.eu/rapid/press-release_IP-14-840_en.htm).

⁵ http://wiki.creativecommons.org/Best_practices_for_attribution.

⁶ <http://oaspa.org/information-resources/frequently-asked-questions/>.

⁷ The document (in .doc format) is available here: <http://www.google.at/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&ved=0CEYQFiAD&url=http%3A%2F%2Fwww.ag.gov.au%2FRightsAndProtections%2FIntellectualProperty%2FDocuments%2FGuidelinesforlicensingPSIforAusGovagencies.doc&ei=jCELU9CQKuWu4ASR54CAAg&usg=AFQjCNHy8f6TGSy67Up-DE1KTISGqnIV4Q&sig2=r0--agzll3q7rsanR9UuHQ&bvm=bv.61725948,d.bGE>.

⁸ See, for instance, the “Report on Data Sharing Principles Post-2015 and Mechanisms to Ensure Legal Interoperability of Shared Data” from the Group on Earth Observations (GEO), and precisely the table 1 (“Acknowledgements, Waivers and Common Use Licenses compatible with the GEOSS Data-CORE Requirements”) (source: http://www.earthobservations.org/documents/geo_xi/GEO-

[XI_08_Report%20on%20Data%20Sharing%20Principles%20Post-2015%20and%20Mechanisms%20to%20Ensure%20Legal%20Interoperability%20of%20Shared%20Data.pdf](#); p. 23-24).

⁹ There are guidelines available that may become truly helpful when applying licensing to data, like this one: http://discovery.ac.uk/files/pdf/Licensing_Open_Data_A_Practical_Guide.pdf.

¹⁰ <http://www.eea.europa.eu/legal/eea-data-policy>.

¹¹ https://earthobservations.org/documents/dsp/GEOSS_Data_Quality_Guidelines.pdf.

¹² Here the Academy of Finland's September 2014 call (<http://www.aka.fi/en-GB/A/Funding-and-guidance/How-to-apply/Guidelines/Publishing-open-access-and-making-data-available-/>) is meant.

¹³ There is a set of Guidelines on Data Management in the framework of Horizon 2020 (http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf).

¹⁴ http://www.geoportal.org/web/guest/geo_home_stp.

¹⁵ Science Europe is an association of research performing organisations and research funding organisations. The position statement regarding open access is available here: http://www.scienceurope.org/uploads/PublicDocumentsAndSpeeches/SE_OA_Pos_Statement.pdf.

¹⁶ "arXiv" (<http://arxiv.org/>) and "PubMed" (<http://europepmc.org/>).

¹⁷ Open Access Infrastructure for Research in Europe: <http://www.openaire.eu/>.

¹⁸ As it is recommended in the JPIs to co work technical annex (source: <http://www.jpis2cowork.eu/images/pdf/Technical-Annex.pdf>). In 2010 a Cost-benefit analysis of publishing marine ecosystem research output through Open Access 'Self-Archiving' was published (http://orbit.dtu.dk/fedora/objects/orbit:86573/datastreams/file_5705720/content).

¹⁹ From the call text: "Full proposals (...) will have to include a (...) financial provision for dissemination of research outputs, allowing for open access to research results and produced data (primary and meta data) among the scientific community" (source: <http://www.jpi-climate.eu/joint-actions/calltransnationalcollaborativeresearchprojects/eligibilitycriteria>).

²⁰ Source: <http://scoap3.org/>.

²¹ From: *UNESCO Guidelines for the development and promotion of Open Access*, p.54 (<http://unesdoc.unesco.org/images/0021/002158/215863e.pdf>).

²² See, in this respect, the Academy of Finland Guidelines on publishing Open Access (<http://www.aka.fi/en-GB/A/Funding-and-guidance/How-to-apply/Guidelines/Publishing-open-access-and-making-data-available-/>).

²³ In the case of an Open Access journal that has been founded very recently (in the last 12 months) and is therefore not yet registered in the DOAJ, it has to be clear from the journal's website that the DOAJ criteria are fulfilled.

²⁴ Whenever such data is published and its availability is dependent on the research publication publisher.

²⁵ That should be done by implementing the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) and/or the standards recommended by NISO - National Information Standards Organization (2015): Access License and Indicators, NISO RP-22-2015.