

Toolkit for policymakers on Open Access and Open Science



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Open Science

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PUBLIC

The goal of this Report is to describe the process for the development of the Toolkit for policymakers. The document also comprises the Templates, Checklists and Factsheets for RFOs and RPOs and other materials and resources available through the OpenAIRE portal to NOADs and policymakers.



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Acronyms

NOAD	National Open Access Desk
OA	Open Access
OS	Open Science
RDM	Research Data Management
RFO	Research Funding Organisation
RPO	Research Performing Organisation
TDM	Text and Data Mining
TF	Task Force

Publishable Summary

The documents describes the process for the development of the Toolkit for policymakers. The document also comprises the Templates, Checklists and Factsheets for RFOs and RPOs and other materials and resources available through the OpenAIRE portal to facilitate NOADs and policymakers.

1 | INTRODUCTION

OpenAIRE Advancing Open Scholarship (OpenAIRE Advance) is a Horizon 2020 (H2020) project (Grant Agreement No: 777541) aimed at continuing the mission of OpenAIRE to support Open Access/ Open Data mandates in Europe. By sustaining the current successful infrastructure, comprised of a human network and robust technical services, it consolidates its achievements while working to shift the momentum among its communities to Open Science, aiming to be a trusted e-Infrastructure within the realms of the European Open Science Cloud. To achieve its mission OpenAIRE Advance has designed –among others- capacity building activities that bring together experts on topical task groups in thematic areas (open policies, RDM, legal issues, TDM).

The decision in particular to dedicate a topical task group on OS/OA policies follows the one taken in the context of OpenAIRE2020 project to embed the PASTEUR4OA Knowledge Net activities to support the development and alignment of OA policies in Europe into OpenAIRE as part of the NOAD activities. The approach chosen between September 2016 and December 2017 focused mainly on raising awareness on how this new activity would be developed in the context of OpenAIRE, on defining the content of these new activities in collaboration with NOADs and on highlighting synergies with other core project activities. The outcome of these discussions has fed-in the description of the related subtask within the OpenAIRE Advance project in the context of the Task 3.2 “Topical Task Forces and Facilitators” of Work Package 3: “NOAD Network Operation”.

The focus of OpenAIRE on policies is based on the belief that infrastructure and policies are two mutually reinforcing elements of Open Science.

The policy activities were subsequently formally introduced in the OpenAIRE Advance during the Athens kick-off meeting (17-19 January 2018). Hence, from January 2018 policy activities constitute a core part of OpenAIRE.

The following sections describe the preparatory actions that have taken place between January-June 2018 and the content of the Toolkit.

1.1 Topical Task-Force on OS/OA Policies

The OS/OA Task-Force (subtask 3.2.1) aims at reinforcing and aligning OS/OA policies in Europe. The task comprises a variety of activities including the update of the related information on the portal through a unified structure and the design of Toolkits for policy makers.

A core element of the task is the design of resources tailored to the needs of different stakeholders and at different levels of familiarity with the concept of OS/OA and OS/OA policies.

To achieve this, the first phase of the Task Force focused on identifying these needs through the use of a variety of activities and tools.

1.1.1 OpenAIRE kick-off meeting

The Task Force on policies was formally introduced during the OpenAIRE Advance kick-off meeting that took place in Athens. A session was dedicated to all OpenAIRE Advance Task Forces (i.e. legal, policy, RDM) in an effort to highlight synergies between the TF and answer questions from NOADs in relation to their involvement and the activities comprised in each TF. The presentation is available on the OpenAIRE BOX.

Following the presentation of TFs during the Athens kick-off meeting, the Policy Task-Force leader (EKT/NHRF) communicated the TF activities and work- plan to the NOAD network through the OpenAIRE NOAD mailing list. NOADs were asked to state their interest in participating in the TF. In particular, NOADs were encouraged to express their interest and active contribution in:

- suggesting useful resources,
- revising the policy templates,
- contributing to the policy-related webinars (as presenters sharing their experience with other NOADs, the challenges faced in their country during the adoption of OS/OA policies etc.),
- supporting (Mentoring) other less advanced NOADs (by organising webinars or skype calls to share experiences, the organisation of training events or other activities they consider as most appropriate).

Following the communication through the mailing list and the presentations at the Regional Meetings (described in the following section), 12 NOADs have stated their interest in actively contributing to the task. The NOAD mailing list will be used in order to request input in specific tasks during the project implementation period.

1.1.2 NOAD Regional Meetings

EKT/NHRF, as Policy TF leader, subsequently participated at the NOADs Regional Monthly meetings to discuss with them the challenges they faced, their needs in terms of resources and supporting materials and to identify ways of supporting them in promoting OS/OA policies in their countries.

REGION	DATE
South Region Monthly Meeting	27 February 2018
East Region Monthly Meeting	6 March 2018
West Region Monthly Meeting	13 March 2018

During these meetings, NOADs were encouraged to present policy developments in their country, while the discussion that followed their presentations focussed on the process that has led to the adoption and/or revision of policies: stakeholders involved, challenges faced, whether this has been a top-down or bottom-up approach, initiatives supporting policies (like for example the existence of a national platform as highlighted by the Dutch NOAD), uptake and monitoring of these policies.

South and East Region NOADs have expressed their interest in policy templates, given that a number of RFOs and RPOs as well as Ministries in their countries are in the process of developing OA/OS policies. As a result, they felt that templates could be of great help in their effort to support these stakeholders. A number of RFOs and RPOs in these two regions are also in the process of revising their policies as they mostly focus on publications. Policy templates could also be useful in this instance as well.

NOADs in Region West have been mostly concerned about the monitoring of policies. As this is a region with more advanced policies compared to South and West, NOADs expressed their interest on issues of monitoring and collaboration among stakeholders. Region West NOADs have also been positive in acting as Mentors to less experienced NOADs.

In all cases, NOADs expressed their interest in the exchange of good practices and highlighted the usefulness of webinars.

During this initial phase, several skype meetings have also been held with UGOE (work package leader) and leaders of other TF in an attempt to align the work.

EKT/NHRF as leader of the policy TF is also participating at the Research Data Management in order to increase synergies between the different TFs.

2 | THE OS/OA TOOLKIT

The OpenAIRE Toolkit for policymakers has been designed to assist the design and adoption of Open Science policies aligned with EU developments in the field. It therefore targets stakeholders at national, institutional or funder level with a key role in the adoption of Open Science/ Open Access policies (university rectors, directors of research centres, directors of funding agencies, rectors' summit, ministries etc.). The Toolkit aims to assist NOADs in promoting OS/OA policies in their country and enabling them to become the national hub on OS/OA by enhancing their expertise. Yet, the Toolkit can also be used by other stakeholders seeking to learn, adopt or align their OS/OA policies and this is why all related material and resources are public.

Acknowledging the different needs and the different challenges that stakeholders face in the adoption of Open Science/ Open Access policies, the Toolkit offers a range of resources to support them -ranging from policy templates to training resources- having in mind that what works in one organization or country might not work in another one. The toolkit has been designed taking into consideration the feedback received from NOADs during the kick-off meeting, the Regional Meetings, individual discussions with NOADs and through e-mail exchange. The materials offered at this phase focus mainly on assisting stakeholders with less experience. Additional materials will nonetheless be developed to support the work of more experienced stakeholders during the course of the project.

On the basis of the feedback and the communication with NOADs and also taking into consideration the changing policy landscape both at EU and national level, work has focused on revising policy templates and preparing checklists and factsheets.

The main channel for the communication of the toolkit materials and resources is the OpenAIRE portal. A dedicated section on OS/OA policies has been created on the portal to host all related materials and resources.

The toolkit is a dynamic tool as it will regularly updated with new information in its effort to better support the NOAD network and all other stakeholders interested in developing and adopting Open Science/ Open Access policies.

2.1 Policy Templates

Existing policy templates (PASTEUR4OA, MedOAnet) have mainly focused on open access to publications. OpenAIRE Advance acknowledged the need to revise them so that the new templates include open access to research data and in addition reflect the transition from Open Access to Open Science as evidenced at EU and at national level. OpenAIRE Advance has therefore prepared two policy templates: for RFOs and RPOs.

2.1.1 Model Policy on Open Science for Research Funding Organisations (RFOs)

INTRODUCTION

The present model policy aims to assist Research Funding Organisations (RFOs) in developing policies for Open Science/ Open Access. The proposed policy aims at aligning RFO policies with the [2012 Recommendation](#) of the European Commission on access to and preservation of scientific information and its [2018 update](#), [the Horizon 2020 Guidelines on the rules of open access to scientific publications and research data](#), and takes into consideration important developments at EU-level related to Open Science/ Open Access such as the [2016 European Council Conclusions](#) on the transition towards an Open Science system, [the “Plan S” and “cOAlition S”](#), the developments related to the [European Open Science Cloud \(EOSC\)](#) and the action lines of the [European Open Science Policy Platform](#).

The model policy has been prepared as part of a Toolkit for policy makers on Open Science and Open Access in the context of the EU-funded project OpenAIRE Advance which supports Open Access/ Open Data mandates in Europe. The proposed policy draws heavily on the [UNESCO Open Access policy development guidelines](#), the [MedOANet guidelines for Open Access](#), [PASTEUR4OA Toolkit for Research Funders](#) and [Policy Guidelines for Funders](#), the [RECODE](#) project policy recommendations for Open Access policies to research data, the [LEARN](#) project Model Research Data Management Policy, [the policy working group of the EOSC Pilot project](#), and the [SPARC Europe report on Open Data and Open Science policies in Europe](#).

MODEL POLICY ON OPEN SCIENCE FOR RESEARCH FUNDING ORGANISATIONS (RFOS)

1. Aims and Scope of the Policy

The **[Name of RFO]** is committed to supporting research of high quality and to ensuring that this investment leads to maximum economic and social return. The **[Name of RFO]** supports the principle of openness to the whole of the research process ranging from research outputs to underlying data and research processes as the most effective way in which they can be publicly and freely available to and (re)usable by other researchers, as well as businesses, and the general public.

For this purpose, the **[Name of RFO]** has defined the following policy which must be observed by all recipients of research funding as of **[date]**. The document aims to provide guidance to grantees and their host institutions.

2. Rights, Roles and Responsibilities

The **[Name of RFO]** is responsible for:

1. Fostering the transition to Open Science through the adoption of the present policy and the provision of appropriate guidance and training to its grantees and their host institutions to ensure the implementation of the policy.
2. Ensuring funds to cover open access publication costs and costs related to data management, stewardship and long-term preservation.
3. Allocating funds for Open Science activities such as (but not limited to) citizen science projects, mentoring/ training and awareness-raising activities, prizes to individual researchers for being a role model in practicing Open Science in addition to those related to Open Access to scientific publications and research data.
4. Providing template and guidelines for the creation of Data Management Plans (DMP).

5. Introducing openness as a criterion in selection procedures for the award of grants (not limited to open access to publications and data, but also taking into consideration elements like contributing in open peer review processes, participating in citizen science projects).
6. Monitoring policy compliance and providing public accounts of its progress and research impact, e.g. through the OpenAIRE Funder service.
7. Fostering collaborations with other stakeholders to promote Open Science.

Researchers are responsible for:

1. Managing research outputs in adherence with the principles and requirements expressed in this policy.
2. Acknowledging the **[Name of RFO]** and identifying the funding **[project name, and/or acronym, and/or number]** in the standardized prescribed manner in all research outputs which have been funded entirely or in part from the funding entity.

3. Open Science

1. The **[Name of RFO]** actively encourages the uptake of Open Science practices (in addition to open access to publications and data) such as the involvement in citizen science projects,

the use of open peer review, the use of open educational resources etc., by including “openness” as a criterion during proposal evaluation.

4. Open Access to Publications

1. The **[Name of RFO]** requires that a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication of all peer reviewed publications produced as a result of research supported, either in entirety or in part by **[Name of RFO]**, is deposited in a suitable Open Access repository. Deposit should be made immediately upon acceptance for publication and the metadata made fully open, searchable and machine-readable from the time of deposit. This step also applies in the case of open access publishing (“Gold Open Access”).

2. In the case of “Green Open Access”, the **[Name of RFO]** requires that the full-text of all such publications be made available under a standard open license immediately where possible and in any case no later than 6-months after publication in Science, Technology, Engineering and Mathematics (STEM) or 12 months after publication in the Social Sciences and Humanities (SSH). If a journal’s permitted embargo period is longer than these, authors should either negotiate with the publisher to retain the rights so as to comply with this policy, or find a journal that enables them to comply without the need for negotiation. The **[Name of RFO]** encourages its members to retain ownership of copyright and to licence to publishers only those rights necessary for publication. This is possible through the use of addenda to the publishing contract. Templates are available at https://sparcopen.org/wp-content/uploads/2016/01/Access-Reuse_Addendum.pdf

3. The **[Name of RFO]** recognizes as compliant journals those that adhere to the above provisions. The hybrid model of publishing is not compliant with the above principles and related costs will not be considered as eligible.

4. The **[Name of RFO]** will recognize Open Access publication fees such as article processing charges (APCs) or book processing charges (BPCs) as eligible costs according to the funding guidelines. For

quality assurance purposes, eligible journal titles must be listed in standard directories like the Directory of Open Access Journals (DOAJ) or PubMed.

5. The **[Name of RFO]** requires that funded publications must be made available under an open content license, such as Creative Commons (CC BY). In all cases, the license applied should fulfil the requirements defined by the [Berlin Declaration](#).

6. While the dominant type of scientific publication is the journal article, grantees are strongly encouraged to provide open access to other types of publications such as monographs, book chapters, conference proceedings, grey literature, reports, etc.

5. Open Access to Research Data

1. The **[Name of RFO]** requires the deposit of the research data supporting publications resulting entirely or partly from its funding and their metadata or any other data (not directly attributable to a publication or raw data) and their metadata, preferably in a research data repository.

2. The **[Name of RFO]** follows the principle “as open as possible as closed as necessary”. The **[Name of RFO]** requires research data to be handled according to the open and FAIR principles (i.e. Findable, Accessible, Interoperable and Re-usable). Data should also be traceable and whenever possible available for subsequent use.

If data cannot be open due to legal, privacy or other concerns (for example personal or sensitive data) this should be clearly explained and clearly differentiate data protection from copyright issues.

3. The **[Name of RFO]** requires that research data must be made available under an open content license, such as Creative Commons (CC BY SA 4.0). In all cases, the license applied should fulfil the requirements defined by the Berlin Declaration

4. **Grantees** are required to submit a DMP showing how data will be handled according to the FAIR data principles and to define post-project usage rights through the assignment of appropriate licenses. **Grantees** are required to submit a DMP within the first 6 months of the project start date and update it whenever significant changes occur.

5. Costs associated with the management of research data are considered eligible costs. Data management costs should be specified in the grant application and the data management plan created by the grantees.

6. Licensing

1. The **[Name of RFO]** requires that funded publications and research data must be made available under an open content license, such as Creative Commons (CC BY, CC0). In all cases, the license applied should fulfil the requirements defined by the Berlin Declaration.

7. Expectations from Researchers

1. The **[Name of RFO]** requires ORCID registration for its grantees. ORCID will be used for grant applications, management and reporting processes.

2. Recipients must acknowledge in all publications the **[Name of RFO]** and identify the funding **[project name, and/or acronym, and/or number]** in the standardized prescribed manner *[provide the*

standardized acknowledgement here, or refer to the appropriate document/webpage where this is defined, e.g. Guidelines for Grant Applicants].

3. Open Access for research outputs is demonstrated by providing a persistent address where the digital object can be accessed, read, downloaded.

4. The **[Name of RFO]** recommends the deposit of scientific publications to repositories that meet quality standards (OpenAIRE compatibility, FAIR principles).

8. Compliance

1. The **[Name of RFO]** will take the grant holder's compliance with this policy into account when assessing research performance and when future applications for funding are received from the grant holder. Reporting on compliance will be required both during and at the end of the funding periods for projects receiving support. In case of no compliance, the **[Name of RFO]** retains the right to reduce the grant amount at the payment of balance or afterwards.

9. Resources for training/ awareness-raising on Open Science

1. The **[Name of RFO]** will ensure researchers have access to appropriate training by providing funding for related training/ awareness-raising activities to research performing organisations (RFOs) or other stakeholders with expertise on Open Science training.

10. Policy Review

1. An evidenced-based review of the policy implementation will take place **[X years]** following its adoption and subsequent reviews will take place on biennial basis. After that, the policy will be reviewed and updated every **[X years]**.

ANNEX I: DEFINITIONS

- **Article Processing Charges (APCs)** are fees that some scholarly publishers charge authors of academic papers to publish their work in open access.
- **Book Processing Charges (BPCs)** are fees charged by a publisher to make a book open access.
- **Data Management Plan (DM)** describes the data management life cycle for the data to be collected, processed and/or generated.
- **Embargo** is the period during which a publication can be 'closed' while deposited in the repository (i.e. the publication is not openly available).
- **FAIR Data Principles for scientific management and data stewardship** refer to a set of principles to make data Findable, Accessible, Interoperable and Reusable, emphasizing machine-actionability.
- **Gold Open Access:** the process of achieving open access through publication in an open access journal (open access publishing).
- **Green Open Access:** the process of providing open access through an open access repository (also known as "self-archiving").
- **Metadata** are the descriptors used for describing, tracing, use and management of the deposited item (indicatively: title of publication, author(s), institutional affiliation, name of journal where the publication has been accepted).

- **Open Peer Review** is defined as a scholarly review mechanism where both the identities of the reviewer and the author are known to one another during the review and publication process.
- **Research Data** is the data (such as statistics, results of experiments, measurements, observations, interview recordings, images, etc.) used to validate the results presented in scientific publications or other data used during a project and described in the Data Management Plan.
- **Research** is defined as any creative and systematically performed work with the goal of furthering knowledge.

ANNEX II: MODEL GRANT AGREEMENT CLAUSE ON OPEN ACCESS TO PUBLICATIONS AND RESEARCH DATA

Grant Agreement clause [xxx] Open Access to scientific publications

Each beneficiary [or the undersigned grantee] must ensure Open Access (free of charge, online access for any user) to all peer-reviewed scientific publications relating to its results. In particular, the beneficiary must:

- deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication, at the time of that acceptance, in a repository for scientific publications; the beneficiary must deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.
- ensure Open Access to the deposited publication — via the repository — at the latest: (i) on acceptance for publication, if the publisher does not impose an embargo (ii) on publication, if an electronic version is available for free via the publisher, or (iii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.
- ensure Open Access — via the repository — to the bibliographic metadata that identify the deposited publication. The bibliographic metadata must be in a standard format and must include all of the following: Grant Number or Code: [insert number]; Project name: [insert name]; Project acronym: [insert acronym]; Call identifier: [insert call/sub-call identifier]; - publication date, and length of embargo period if applicable, and - persistent identifier.

GA clause [xxx] Open Access to research data

Each beneficiary [or the undersigned grantee] must ensure Open Access to all research data supporting research publications. In particular, the beneficiary must:

- deposit in a suitable research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the supporting research data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible, and no later than the associated publication.
- provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves). As an exception, the beneficiaries do not have to ensure Open Access to specific parts of their research data if the achievement of the action's main objective, as described in the Description of Work (DoW), would be jeopardised by making those specific parts of the research data

openly accessible. Additionally, they are not obliged to provide open access for reasons of breach of confidentiality in cases where commercial exploitation of results is planned, if the release of the data in Open Access can threaten public security. Finally, Open Access can be waived where personal data must be protected.

(c) A Data Management Plan should be developed in the first six months of the project as a project deliverable. The DMP needs to be updated over the course of the project whenever significant changes arise and at as a minimum for the periodic evaluation of the project.

2.1.2 Model Policy on Open Science for Research Performing Organisations (RPOs)

INTRODUCTION

The present model policy aims to assist Research Performing Organisations (RPOs) in developing policies for Open Science/ Open Access. The proposed policy aims at aligning institutional policies with the [2012 Recommendation](#) of the European Commission on access to and preservation of scientific information and its [2018 update](#), [the Horizon 2020 Guidelines on the rules of open access to scientific publications and research data](#), and takes into consideration important developments at EU-level related to Open Science/ Open Access such as the [2016 European Council Conclusions](#) on the transition towards an Open Science system, [the “Plan S” and “cOAlition S”](#), the developments of the [European Open Science Cloud \(EOSC\)](#) and the action lines of the [European Open Science Policy Platform](#).

The model policy has been prepared as part of a toolkit for policy makers on Open Science and Open Access in the context of the EU-funded OpenAIRE Advance project that aims to support Open Access/ Open Data mandates in Europe. The proposed policy draws heavily on the [UNESCO Open Access policy development guidelines](#), the [MedOANet guidelines for Open Access](#), [PASTEUR4OA Toolkit](#) and [Policy Guidelines](#), the [RECODE](#) project policy recommendations for Open Access policies to research data, the [LEARN](#) project Model Research Data Management Policy, [the policy working group of the EOSC Pilot project](#), and the [SPARC Europe report on Open Data and Open Science policies in Europe](#).

MODEL POLICY ON OPEN ACCESS TO PUBLICATIONS AND DATA FOR RESEARCH PERFORMING ORGANISATIONS (RPOS)

1. Preamble

1. The **[Name of RPO]** commits to the advancement of science and the wide dissemination of knowledge to the benefit of society by adopting practices on open, reproducible and responsible research.
2. The **[Name of the RPO]** recognizes “openness” as one of its guiding principles and commits to promoting it by –among others- encouraging and supporting research processes and tools that encourage collaboration, enabling new working models and new social relationships, stimulating the dissemination of knowledge and the accessibility and re-usability of research outputs, encouraging open access to publications and data and building the necessary infrastructure to support open science.

2. Jurisdiction and Effect of Policy

The Policy applies to all researchers active at **[Name of RPO]**. In cases where research is funded by a third party, any agreement with that party concerning access rights, deposit and storage takes precedence over this Policy.

The Policy has been approved by **[dean/ commission/.....]** and takes effect from **[dd/mm/yy]**

3. Rights, Responsibilities, and Duties

3.1 The **[Name of RPO]** is responsible for:

1. Supporting and empowering the transition to Open Access/ Open Science through education, training and awareness-raising actions targeting researchers and other employees, along with the provision of the necessary infrastructure and funding to support this transition. Acquisition of Open Science skills should form an integral part of professional training and career development offered to researchers.
2. Establishing (if one does not yet exist) an **Institutional Open Access Repository [Name of the Repository]** according to international standards, containing digital content and providing advanced tools for search, navigation and Open Access to its content.
3. Mandating the use of unique identifiers (like DOIs, ORCID or others).
4. Appointing a Data Officer responsible for all data related matters, including –but not limited to– issues related to the development of Data Management Plans (DMPs) and compliance with national and European laws, data curation and stewardship.
5. Developing and providing mechanisms and services for the storage, safekeeping, registration, deposition and distribution of data and other records as well as their long-term preservation and providing appropriate guidance to researchers.
6. Embedding Open Science practices in recruitment, research assessment and evaluation criteria beyond the provision of open access to publications and data, like participation in citizen science projects, experimentation with open peer review or the use of Open Educational Resources (OER).
7. Monitoring policy compliance by comparing the content of the repository with information gathered from indexing services and through data on the use (access and downloads) per publication/ department/unit/ institute etc.
8. Compiling information and producing reports related to publishing costs when following the Green or Gold route respectively and engaging in discussions concerning agreements with publishers. Information will also be collected in relation to RDM costs.
9. Ensuring the compliance of the institution's repository and other research infrastructures with certification requirements in relation to FAIR data principles and EOSC technical specifications.
10. Having IPR and data protection policies.
11. Having an Open Licensing policy mandating a coherent and comprehensive set of licences for releasing content and data.
12. Having a comprehensive IPR documentation for all resources to be released.

3.2 **Researchers are responsible for:**

1. Managing publications, data and educational resources in adherence with the principles and requirements expressed in this Policy.
2. Registering new research projects at the proposal stage at **[Name of RPO]** appropriate service in order to ensure that they are provided with the appropriate institutional support.
3. Complying with the organizational, regulatory, institutional, and other contractual and legal requirements related to the production, curation, deposit, management, and distribution of publications and data in case there is no other agreement with third parties taking precedence.
4. Ensuring that the principles governing the handling of data (in adherence with the present Policy and funders' mandates) are included in a Data Management Plan (DMP). DMPs should also include a sustainability plan. Contact details should also be included.
5. Compiling a DMP for every research activity they are coordinating.
6. Documenting the IPR status of their research
7. Choosing the appropriate time and type of licensing their research.

4. Open Access to Publications

The **[Name of RPO]**:

1. Requires researchers to deposit in the institutional repository, or any other suitable infrastructure a machine-readable electronic copy of the full text (published article or final peer-reviewed manuscript), as well as the related metadata before, at the same time or after publication. Researchers are held responsible for the timely deposit of their publications in the institutional repository. This step also applies in the case of open access publishing ("Gold Open Access").
2. In the case of "Green Open Access", the **[Name of RPO]** requires the full text of all publications referred to in 1 to be made available under a standard open licence within at most 6 months (or 12 for publications in the social sciences and humanities). For monographs deposit remains mandatory, but access is closed until publisher embargo elapses.
3. Requires the metadata of the publication to be made openly accessible in the case of 'closed' publications with the aim to increase their visibility.
4. For purposes of individual or institutional evaluation of the research output of the institution and its members, **[Name of RPO]** will only consider as publications those whose metadata and full texts are deposited in the institutional repository according to the requirements stated above.
5. Encourages its members to retain ownership of copyright and to licence to publishers only those rights necessary for publication. This is possible through the use of addenda to the publishing contract. Templates are available at https://sparcopen.org/wp-content/uploads/2016/01/Access-Reuse_Addendum.pdf
6. Encourages researchers to deposit in the institutional repository publications authored prior to the date of effect of the current policy and make them openly accessible whenever possible.

5. Open Access to Research Data

The **[Name of RPO]**

1. Requires researchers to deposit the data needed to validate the results presented in scientific publications in a suitable repository such as **[Name of Repository]**. Data should be provided with persistent identifiers.
2. Requires that data and services are handled according to open and FAIR principles (i.e. Findable, Accessible, Interoperable and Re-usable). Data should also be traceable and whenever possible available for subsequent use.
3. The **[Name of the research infrastructure]** follows the principle “as open as possible as closed as necessary”. If data cannot be open due to legal, privacy or other concerns (for example sensitive data or personal data) this should be clearly explained. Metadata ensuring that data are findable should be provided in all instances.
4. Encourages the adoption of the EOSC requirements for monitoring of open science resources.
5. Requires researchers to submit a DMP to the appropriate service for every research activity they are involved in.
6. Requires researchers to define post-project usage rights through the assignment of appropriate licenses.
7. Requires that data are stored for a period as defined by the respective communities.
8. The minimum archive duration for research data is 10 years after the assignment of a persistent identifier. In the event that these records need to be deleted or destroyed after the expiration of the required archived duration or for legal and ethical reasons, such actions need to consider all legal and ethical perspectives.

6. Open Science

1. The **[Name of RPO]** actively encourages the uptake of Open Science practices (beyond open access to publications and data) such as the involvement in citizen science projects, the use of open peer review, the use of open educational resources, the release of data and content under open and standard open licenses, etc., and tracks their uptake.

7. Infrastructure

1. Ensuring that the **[RPO Repository]** meet trusted quality standards (OpenAIRE compatible, meeting FAIR principles) and are linked with EOSC.
2. Ensuring that the **[RPO Repository]** is registered in appropriate registries and interoperable through the OpenAIRE Metadata Schema for Repositories.

8. Research Assessment and Evaluation

[Name of RPO] commits to:

1. Developing in cooperation with funding agencies and institutional departments and other appropriate units a framework for research assessment and evaluation that incentivizes research quality and Open Science behaviors and practices following European developments on the topic and the work of the European Open Science Policy Platform. Such systems should take into consideration disciplinary differences and their impact on researchers at different career stages.

2. Setting up reward mechanisms for researchers using Open Science practices (e.g. sharing provisional results through open platforms, using open software and other tools, participation in open collaborative projects (citizen science) etc.)

9. Training

1. The university library in cooperation with institutional departments or any other appropriate body (such a legal services, research support staff, RDM experts) commits to developing training courses to facilitate the adoption of open science and equip researchers and librarians and other support staff with the necessary skills and expertise. Such training courses should include skills necessary for open access publishing, open data and data management, research integrity.
2. Training should be tailored to different disciplines and delivered to researchers at all career stages and should be embedded into curricula.
3. Appropriate funding for these activities should be ensured and to that end synergies with RFOs and other stakeholders should be sought.

10. Validity of the Policy

This policy will be reviewed and updated by the head/ director of the [Name of RPO] every [two years].

ANNEX: DEFINITIONS

- **Gold Open Access:** the process of achieving open access through publication in an open access journal (open access publishing).
- **Green Open Access:** the process of providing open access through an open access repository (also known as “self-archiving”).
- **Machine-readable copy** of a publication is a publication in a format can be used an understood by a computer.
- **Metadata** are the descriptors used for describing, tracing, use and management of the deposited item (indicatively: title of publication, author(s), institutional affiliation, name of journal where the publication has been accepted).
- **Open Educational Resources (OER)** according to the OECD are “teaching, learning and research materials that make use of tools like open licenses that permit their free reuse, continuous improvement and repurposing by others for educational purposes”.]
- **Open Peer Review** is defined as a scholarly review mechanism were both the identities of the reviewer and the author are known to one another during the review and publication process.
- **Publication** is defined as the peer-reviewed published (or under publication) work of researchers based in the institution.
- **Research Data** is the data (such as statistics, results of experiments, measurements, observations, interview recordings, images, etc.) used to validate the results presented in scientific publications or other data used during a project and described in the Data Management Plan.

- **Research** is defined as any creative and systematically performed work with the goal of furthering knowledge.
- **Researcher** is defined as any member of the research staff of **[Name of RPO]**, of all levels and irrespective of their employment status including employees and doctoral students
- **Suitable Repository** is one that meets quality standards like FAIR Principles, OpenAIRE compatibility, CoreTrust Seal.

2.2 Checklists

The Checklists have been inspired by the LEARN project “RDM Readiness Survey” and the PASTEUR4OA and SPARC Europe “How Open Is Your Research” Tools. The Checklists (for RFOs and RPOs) constitute a self-assessment questionnaire aimed at assisting RFOs and RPOs in understanding their level of readiness in adopting an OS/OA policy. At the same time, the Checklists support the development of policies by highlighting the key elements that should be taken into consideration during the policy design process and during implementation.

2.2.1 Checklist for Research Funding Organisations (RFOs)

ARE YOU READY TO ADOPT AND OPEN SCIENCE POLICY?

The OpenAIRE Advance project has designed the following checklist to enable research funding organisations (RFOs) to assess their readiness in adopting an Open Science policy. It covers main elements that should be taken into account in designing a policy that is aligned with the Horizon2020 requirements on Open Access and the key developments at EU level related to Open Science/ Open Access.

The survey comprises 11 statements. For each statement, there are three possible answers (A, B, C). Responses under A indicate higher readiness, therefore the higher the number of As recorded, the readier an RFO is.

1. Policy

- A. The research funding organization (RFO) has a policy on Open Science/ Open Access
- B. The research funding organization (RFO) is in the process of developing an Open Science Policy and has already endorsed related declarations ([Berlin Declaration](#), [San Francisco Declaration on Research Assessment](#))
- C. The research funding organization (RFO) does not have an Open Science/ Open Access policy, nor has it endorsed any related declarations

2. Roles and Responsibilities

- A. The policy specifies the roles, rights and responsibilities of both the funder, the grantees and their host institutions

- B. There is a rather vague description of the roles and responsibilities of each party involved in the implementation of the policy
- C. There is only a description of the grantees responsibilities, without any reference to the roles and responsibilities of the funder in supporting the grantee and his/her host institution in complying with the policy

3. Publications and Sharing

- A. The RFO policy is aligned with the Horizon2020 requirements in defining the terms of providing open access to publications (mandatory deposit, locus of deposit, time of deposit, provision of open access and embargo periods, licenses and copyright)
- B. The RFO policy defines the terms of providing open access to publications, but these are not aligned with the Horizon2020 requirements
- C. The RFO policy does not mandate open access to publications

4. Research Data

- A. The RFO policy has specific provisions (aligned with the Horizon 2020 requirements) stipulating open data by default, establishing reasons for opting-out and laying down provisions for archiving, sharing, long-term preservation etc.
- B. The RFO has provisions on open data, but these are not aligned with the Horizon 2020 requirements
- C. The RFO policy does not mandate open access to research data

5. Infrastructure

- A. The RFO policy recommends the use of repositories that meet quality standards (OpenAIRE compatibility, CoreTrustSeal, FAIR principles) and provides guidance to grantees
- B. The RFO policy recommends the use of repositories that meet quality standards (OpenAIRE compatibility, CoreTrustSeal, FAIR principles), but does not provide further guidance to grantees
- C. The policy provides no guidance regarding the selection of repositories

6. Training

- A. The RFO policy ensures the allocation of funds for awareness-raising activities and training in cooperation with RPOs and other stakeholders
- B. The RFO allocates some funds for awareness-raising on its policy
- C. The RFO policy has no dedicated funding in support of awareness-raising or training activities.

7. Open Science

- A. The RFO has included “openness” as a criterion in proposal/project evaluation
- B. The RFO policy only considers Open Access to publications and research data during the evaluation of proposal/ projects
- C. The RFO policy does not include any evaluation criterion linked to “openness”

8. Open Access Publication Fees

- A. The RFO provides funding for open access publication costs to grantees and to their institutions
- B. The RFO provides funding to grantees for open access publication costs
- C. The RFO provides funding for open access publication costs, including for publications in hybrid journals

9. Monitoring and Compliance

- A. The RFO has a set up a mechanism for monitoring policy compliance by its grantees, including sanctions for no compliance (reduction in the amount of the grant)
- B. The RFO has a mechanism for monitoring policy compliance by its grantees, yet no sanctions are foreseen in the case of no compliance
- C. The is no mechanism for monitoring compliance

10. Revision and Updates

- A. The RFOs policy contains a specific time plan for its review (and possible update)
- B. The RFO is in the process of developing a plan for the review (and possible update) of its policy
- C. There is no provision in the policy for its review/ update

11. Machine-readability of Policy

- A. The policy is provided in a machine-readable format and can be accessed via API
- B. The RFO will shortly provide its policy in a machine-readable format
- C. The policy is not provided in a machine-readable format

2.2.2 Checklist for Research Performing Organisations (RPOs)

IS YOUR INSTITUTION READY TO ADOPT AN OPEN SCIENCE POLICY?

The OpenAIRE Advance project has designed the following checklist to enable research performing organisations to assess their readiness in adopting an Open Science policy. It covers main elements that should be taken into account in designing a policy that is aligned with the Horizon2020 requirements on open access and the key developments at EU level related to Open Science.

The survey comprises 14 statements. For each statement, there are three possible answers (A, B, C). Responses under A indicate higher readiness, therefore the higher the number of As recorded, the readier an institution is.

1. Policy

- A. My institution already has a policy on Open Science/ Open Access, endorsed by [Rector/other appropriate committee]
- B. My institution is in the process of developing an Open Science/ Open Policy and has already endorsed related declarations ([Berlin Declaration](#), [San Francisco Declaration on Research Assessment](#))
- C. My institution does not have an Open Science/ Open Access policy, nor has it endorsed related declarations

2. Roles and Responsibilities

- A. The institutional policy specifies the roles, rights and responsibilities of each member/ unit/ department or other service within the institution with a role in the adoption and implementation of the policy
- B. There is a rather vague description of the roles and responsibilities of each party involved in the implementation of the policy
- C. There is no description of roles and responsibilities in the policy

3. Open Science Activities

- A. My institution actively encourages the uptake of Open Science practices (beyond open access to publications and data) such as the involvement in citizen science projects, the use of open peer review, the use of open educational resources etc., supports researchers through awareness raising and information activities and tracks their uptake
- B. My institution encourages the uptake of Open Science practices (beyond open access to publications and data), such as the involvement in citizen science projects, the use of open peer review, the use of open educational resources etc., but does not have a mechanism to monitor their uptake
- C. The policy makes reference only to open access to publications and research data

4. Publications and Sharing

- A. The policy is aligned with the Horizon2020 requirements in defining the terms of providing open access to publications (mandatory deposit, locus of deposit, time of deposit and embargo periods, licenses and copyright etc.)
- B. The policy defines the terms of providing open access to publications, but these are not aligned with the Horizon2020 requirements
- C. There is no mandatory provision at my institution regarding open access to publications

5. Open Data

- A. My institution has specific provisions (aligned with the Horizon 2020 requirements) stipulating open data by default, establishing reasons for opting-out and laying down provisions for archiving, sharing, long-term preservation etc.
- B. My institution has provisions on open data, but these are not aligned with the Horizon 2020 requirements
- C. There are no mandatory provisions on opening and sharing data in my institution

6. Infrastructure

- A. My institution has a repository for researchers to manage research outputs at different stages of the research cycle that meets trusted quality standards (CoreTrustSeal, OpenAIRE compatibility, meeting FAIR principles)
- B. My institution has a repository, but this does not yet meet trusted quality standards
- C. My institution provides ad hoc support to researchers in locating appropriate services of third parties

7. Rewards and Incentives

- A. Open Science constitutes a formal criterion in research assessment and evaluation procedures
- B. My institution encourages the adoption of Open Science practices, yet these are not embedded as a formal criterion in research assessment and evaluation procedures
- C. There is no mechanism for incentivizing or rewarding researchers engaged in Open Science practices

8. Educational Programmes on data-intensive research

- A. My institution provides courses on data management and data-intensive research, as part of the curriculum and leading to the award of specific titles
- B. My institution provides some training on data management and data-intensive research through ad hoc workshops and other trainings, yet these are not part of the curriculum and do not lead to the award of a specific title
- C. There are no such courses offered in the institution

9. Training

- A. My institution (university library in cooperation with other departments/units or other appropriate services) organizes on a regular basis training courses of different open science topics, targeting researchers at different stages of their careers, library staff and other members of the institution and taking into consideration disciplinary differences

- B. My institution provides open science training courses, yet not a regular basis and of limited scope
- C. My institution does not provide any training courses on open science/ open access, yet provides guidance on training courses offered by [OpenAIRE](#), [FOSTER](#), [RDA](#) and other related projects and/or networks

10. Dissemination/ Awareness Raising

- A. My institution has developed materials to familiarize its members with Open Science, operates an information point/ webpage dedicated to Open Science
- B. My institution provides limited information through its library service on general Open Science/ Open Access topics
- C. There is no central information point operating at my institution

11. Funding

- A. My institution has a clear estimation of the costs related to Open Science research and activities (developing and maintaining the infrastructure, APC costs, licensing agreement costs, training and awareness raising activities, etc.) and has secured appropriate funding
- B. My institution receives ad hoc funding to support Open Science research and activities
- C. There is no specific budget line for Open Science related activities

12. Monitoring and Compliance

- A. My institution has a set up a mechanism for monitoring compliance of its members with the policy, including sanctions in the case of no compliance
- B. My institution has a monitoring mechanism to accompany the policy, yet there are no actions foreseen in the case of no compliance
- C. There is no monitoring mechanism foreseen in the institutional Open Science/ Open Access policy

13. Revision and Updates

- A. My institution already has a specific time plan for updating its policy (specifying the time and the people, departments/units or other service involved)
- B. My institution is in the process of developing such plan
- C. There is no provision in the policy for its review

14. Machine-readability of Policy

- A. The policy is provided in a machine-readable format and can be accessed via API
- B. The institution will shortly provide the policy in a machine-readable format
- C. The policy is not provided in a machine-readable format

2.3 Factsheets

The Factsheets (for RROs and RPOs) have been developed as a tool to assist NOADs in their contacts with national stakeholders. Therefore, the Factsheets focus not only on the benefits related to the adoption of OS/OA policies, but more importantly highlight the channels through which OpenAIRE can support national stakeholders in this process. Special focus is given to the NOAD network as NOADs are expected to play a key role at national level.

2.3.1 Factsheet for Research Funding Organisations (RFOs)

WHAT IS THE OPEN SCIENCE TOOLKIT FOR RFOs?

Open Science represents a new approach in the way research is conducted, placing emphasis on sharing and using knowledge at an earlier stage in the research process. This change is not affecting only researchers, but a broad range of stakeholders, including research funding organisations (RFOs) and research performing organisations (RPOs).

The development of Open Science policies is among the key actions to support the transition to Open Science. RFOs are expected to have a key role during this transition enhancing cultural change through (among others) the adoption of related policies. Yet, what are the key elements that an Open Science policy should include? What are the key developments at EU-level an RFO should take into consideration? What is the level of readiness of an RFO in adopting such a policy? To facilitate this process, OpenAIRE has created a Toolkit to support RFOs' efforts, in addition to the monitoring and implementation services it offers them.

WHAT ARE THE BENEFITS FROM ADOPTING AN OPEN SCIENCE POLICY?

- Be part of the new era of Open Science, integrating transparency, effectiveness and timeliness into all areas of scientific methods and processes.
- Reach more people and strengthen trust through the research you fund, have greater impact.
- Avoid duplication of effort and help preserve data for future researchers.
- Simplify final reporting with the support provided by the OpenAIRE Funder Service.

HOW CAN OPENAIRE HELP?

OpenAIRE provides a range of resources and services to support RFOs in the adoption, implementation and monitoring of their Open Science policies.

Via the OpenAIRE portal, RFOs have access to:

- Policy **Toolkit** including **Template** on Open Science, with provisions on open access to scientific publications and research data aligned with Horizon 2020 requirements and a **Checklist** regarding policy readiness.
- Information on the Open Science **Monitoring and Implementation Service** providing info on compliance with policy, analysis of research impact, overall funder/funding stream statistics.

- A dedicated service for funders to register and manage their data (projects, results, collaborative funding streams, etc). The “Funder Monitoring Dashboard” is able to be used both in private (personal use) and public (transparency of funding and research results) mode.
- Communication with other funders through NOADs and other OpenAIRE collaborations, both in their respective countries and in the EU.
- Information on past and upcoming **Workshops & Webinars** focusing on policy-related aspects.
- Tailored support through its **NOAD network**. OpenAIRE has local representatives in all EU countries: the National Open Access Desks or NOADs. Contact them via our helpdesk system at www.openaire.eu.

SUPPORT THROUGH THE OPENAIRE NOAD NETWORK

The network of National Open Access Desks (NOADs) constitutes the human network of OpenAIRE and a key component in the advancement of Open Science at both EU and national level. RFOs are encouraged to consult and work together with their NOAD in positioning Open Science in the national agendas by identifying the key stakeholders in the promotion of Open Science at national level, the key issues to work on and the setting up of the appropriate strategy for reaching set goals and targets.

ABOUT OPENAIRE

OpenAIRE fosters the social and technical links that enable Open Science in Europe and beyond.

www.openaire.eu

For more information, please contact: info@openaire.eu

OTHER LINKS

OpenAIRE Funder Page: <https://www.openaire.eu/intro-funders>

OpenAIRE Horizon2020 Page: <https://www.openaire.eu/h2020openaccess/>

OpenAIRE NOAD Network Page: <https://www.openaire.eu/contact-noads>

EC’s Agenda on Open Science: <https://ec.europa.eu/digital-agenda/en/open-science>

“Plan S” and “cOAlition S”- Accelerating the transition to immediate and full Open Access to scientific publications: https://ec.europa.eu/commission/commissioners/2014-2019/moedas/announcements/plan-s-and-coalition-s-accelerating-transition-full-and-immediate-open-access-scientific_en

EC’s Guide on Open Access to Scientific Publications and Research Data in Horizon 2020: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/_hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

Science Europe: <https://www.scienceeurope.org/>

EOSC Pilot Policy Recommendations: <https://eoscpilot.eu/content/d33-draft-policy-recommendations>

2.3.2 Factsheet for Research Performing Organisations (RPOs)

WHAT IS THE OPEN SCIENCE TOOLKIT FOR RPOS?

As an increasing number of stakeholders are accelerating their transition to Open Science, supporting researchers in their daily practices during this transition through the development and adoption of Open Science policies can be a challenging task for RPOs.

How do I design an Open Science Policy? What are the key elements that an Open Science policy should include? Who should be involved and what should the roles and responsibilities of each party involved be? Have other RPOs adopted Open Science policies and what is the content of these policies? In what ways do developments at EU level impact on the design of institutional policies?

To assist RPOs in developing an Open Science policy, OpenAIRE has created a Toolkit comprising a wide range of resources and services tailored to their needs. In this effort, the network of National Open Access Desks (NOADs) plays a key role in supporting them along with other key stakeholders at national level.

WHAT'S IN IT FOR YOU?

- Be part of the new era of Open Science, integrating transparency, effectiveness and timeliness into all areas of scientific methods and processes.
- Increase the visibility and impact of the research and the RPOs' international profile.
- Avoid duplication of effort and help preserve data for future researchers.
- Ensure transparency, accountability and participation within your organization.
- Increase policy quality and consistency.
- Improve intangible asset management within your organization.

HOW CAN OPENAIRE HELP?

OpenAIRE provides a range of essential resources and services to support RPOs in the adoption, implementation and monitoring of Open Science policies.

Via the OpenAIRE portal, RPOs have access to:

- Policy **Toolkit** including **Template** on Open Science, with provisions on open access to scientific publications and research data aligned with Horizon 2020 requirements and a **Checklist** enabling RPOs to assess their readiness in adopting Open Science policies.
- Information on past and upcoming **Workshops** & **Webinars** focusing on policy-related aspects.

- **Tools** to support Open Science activities, e.g., OpenDMP for data management plans and Amnesia for data anonymization, including legal tools, such as licence interoperability and rights management tools.
- **Services** which strengthen networks and facilitate standards and interoperability compliance of national repositories to be promoted in the EU.
- Tailored support through its **NOAD network** aimed at capacity building and increasing awareness. OpenAIRE has local representatives in all EU countries: the National Open Access Desks or NOADs. Contact them via our helpdesk system at www.openaire.eu.

SUPPORT THROUGH THE OPENAIRE NOAD NETWORK

The network of National Open Access Desks (NOADs) constitutes the human network of OpenAIRE and a key component in the advancement of Open Science at both EU and national level. RPOs are encouraged to consult and work together with their NOAD in positioning Open Science in the national agendas by identifying the key stakeholders in the promotion of OS at national level, the key issues to work on and the setting up of the appropriate strategy for reaching set goals and targets.

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For more information, please contact: info@openaire.eu

OTHER LINKS

OpenAIRE Horizon2020 Page: <https://www.openaire.eu/h2020openaccess/>

OpenAIRE NOAD Network Page: <https://www.openaire.eu/contact-noads>

EC's Agenda on Open Science: <https://ec.europa.eu/digital-agenda/en/open-science>

“Plan S” and “cOAlition S”- Accelerating the transition to immediate and full Open Access to scientific publications https://ec.europa.eu/commission/commissioners/2014-2019/moedas/announcements/plan-s-and-coalition-s-accelerating-transition-full-and-immediate-open-access-scientific_en

EC's Guide on Open Access to Scientific Publications and Research Data in Horizon 2020: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/_hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

EOSC Pilot Policy Recommendations: <https://eoscpilot.eu/content/d33-draft-policy-recommendations>

Association of European Research Libraries - LIBER page: <https://libereurope.eu/>

European University Association – EUA page <https://eua.eu/>

2.4 Open Science Guidelines for Policymakers

WHAT IS THE OPEN SCIENCE TOOLKIT FOR POLICYMAKERS?

Open Science (OS)^[1] has been formally recognised by the European Commission (EC) as the means which will boost EU Research & Innovation. OS is the umbrella term declaring open and innovative ways in which research is being conducted, managed and communicated, including all possible outputs of research activities beyond articles publications and strong collaborations among stakeholders. “Open” here incorporates the traditional meaning of free/without cost and inclusive access to publicly funded research outputs (Open Access, Open Data), yet is also associated with cultural aspects of how research is performed including scholarly/researchers’ behavior and communication in a research lifecycle.

Achieving a sustainable OS environment is foreseen to have great impact in new job openings, growth of public investments and generation of new products coming from unexploited research, which could strengthen the EU market thus positioning Europe higher in the international competitive market.

Taking into consideration the complexity and unique structure characterising every national research ecosystem as well as the effort required in implementing the EC strategies and plans for Open Science (eg [Recommendation on access to and preservation of scientific information](#), [ESFRI National Roadmaps](#), [European Open Science Cloud \(EOSC\)](#)), the OpenAIRE Advance project created a collection of resources and services for policymakers to get advise and assist their role in effective and “open” policymaking in their respective countries.

What are the benefits from adopting an Open Science strategy and/or Open Science policy?

1. Build trust with stakeholders of academic, research, business environments and with citizens
2. Have better control of the publicly funded research with the ability to verify it in elimination of bad science
3. Create new job openings
4. Encourage research mobility
5. Penetrate/Achieve growth in public investments
6. Generate new products from unexploited research
7. Facilitate SMEs work
8. Strengthen regional and national markets
9. Assist in the effort to position Europe higher in the international competitive market
10. Improve research quality by encouraging collaboration, open review and replicability
11. Reduce costs of research by avoiding reinventing the wheel
12. Increase economic activity through the lowering of transaction and access costs

HOW CAN OPENAIRE HELP?

OpenAIRE provides a range of essential resources and services to support policymakers in the development, implementation and monitoring of Open Science policies. Complementary to that, National Open Access Desks (NOADs) activities have proven to be a valuable source of information, support and coordination for the realisation of the current state of Open Access, Open Data and Open Science trends, structures, policies and infrastructures in NOADs' respective countries. NOADs is a strong network of experts working to foster Open Science and motivate/drive/support the design of tailored national agendas, which are in accordance to the EU and EC requirements but also take into consideration country-specific socio-economic events to elevate efficiency.

Via the OpenAIRE portal, policymakers have access to:

Resources and supporting material to realise existing national landscapes and help build more open and sustainable ones:

- Policy Templates on Open Science, with provisions on open access to scientific publications and research data aligned with Horizon 2020 requirements and with the EOSC Policy Framework
- Checklist enabling policymakers to assess their readiness in adopting Open Science policies or developing Open Science Strategies

Services aimed at supporting a variety of stakeholders in their policy-driven activities and beyond. The utilisation of those services provide both solutions to important and/or emerging issues (e.g. [FAIR principles](#)), and [great insight on national perspectives regarding OS](#):

- Interoperability of national repositories and repositories content visibility enhancement when complying with the OpenAIRE metadata schema
- Information about national publicly funded research through the OpenAIRE Funders Dashboard
- Open APIs of datasets for use by SMEs and other enterprises

Collaboration and Outreach both internally (in OpenAIRE and the EU) and externally (outside OpenAIRE and the EU):

- Internal communication and collaboration with country's stakeholders and key players of the national academic and research ecosystem

- Strong communication and collaboration of all countries (through NOADS) for a harmonized European outcome
- Communication of national activities and achievements to the EOSC, the RDA, FORCE11 and other initiatives and structures through OpenAIRE collaborations

Training in vital aspects of OS to educate and provide new skills to librarians as well as to explore new opportunities in which other open science professions, such as data stewardship, could thrive:

- Training material on Research Data Management (RDM) following a “train-the-trainer” approach
- Information on past and upcoming workshops & webinars focusing on policy-related aspects

Support:

- Tailored support of all stakeholders’ activities through its NOAD network. OpenAIRE has local representatives in all EU countries: the National Open Access Desks or NOADS. Contact them via our helpdesk system at www.openaire.eu .

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OTHER LINKS

1. OpenAIRE Horizon2020 Page:

<https://www.openaire.eu/h2020openaccess/>

1. OpenAIRE NOAD Network Page:

<https://www.openaire.eu/contact-noads>

1. EC’s Agenda on Open Science: <https://ec.europa.eu/digital-agenda/en/open-science>
2. “Plan S” and “cOAlition S”- Accelerating the transition to immediate and full Open Access to scientific publications https://ec.europa.eu/commission/commissioners/2014-2019/moedas/announcements/plan-s-and-coalition-s-accelerating-transition-full-and-immediate-open-access-scientific_en

3. EC's Guide on Open Access to Scientific Publications and Research Data in Horizon 2020: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf
4. EOSC Declaration https://ec.europa.eu/research/openscience/pdf/eosc_declaration.pdf
5. EOSC Pilot Policy Recommendations: <https://eoscpilot.eu/content/d33-draft-policy-recommendations>

[1] “Open science is the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society, amateur or professional. Open science is transparent and accessible knowledge that is shared and developed through collaborative networks^[2]. It encompasses practices such as publishing [open research](https://en.wikipedia.org/wiki/Open_science#cite_note-2), campaigning for [open access](https://en.wikipedia.org/wiki/Open_science#cite_note-2), encouraging scientists to practice [open notebook science](https://en.wikipedia.org/wiki/Open_science#cite_note-2), and generally making it easier to publish and communicate scientific knowledge.” https://en.wikipedia.org/wiki/Open_science#cite_note-2 According to FOSTER “Open Science is the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods.” <https://www.fosteropenscience.eu/foster-taxonomy/open-science-definition>

2.5 Webinars

A webinar “**How OpenAIRE can help NOADs support the adoption of Open Science policies**” was organized for the NOAD network on 27/06/2018 with Marina Angelaki (EKT/NHRF) and Elli Papadopoulou (ARC) as presenters.

The aim of the webinar was to:

- Present the main challenges that exist in the promotion and alignment of open access policies for Funders and Institutions, taking also into consideration the latest EU developments (2018 revised recommendation on access to and preservation of scientific information providing a holistic approach)
- Present the ways in which OpenAIRE Advance can support NOADs in becoming a hub at national level for Open Science/ Open Access policies and thereby create and lead the Open Science Partnerships
- Ask for NOAD feedback in order to define services and tools matching their needs.

NOADs were encouraged to present good practice examples from their own country on policy implementation (national, institutional or funder level).

The presentation and the recordings are available to OpenAIRE members at the [BOX](#). The recording will also be uploaded at the OpenAIRE portal.

The feedback received has been positive and the TF leader in collaboration with the WP Leader has discussed the organisation of another webinar for NOADs during the second half of 2018 including this time presentations from NOADs on a selected theme. The discussion also confirmed once again the need for new templates and checklists, as well as providing guidance to other resources and materials developed by other projects and initiatives. Webinars organized from 2019 onwards will be open to stakeholders outside the consortium.

2.6 OpenAIRE Portal

To ensure the widest possible dissemination of the materials of the Toolkit, but also in an effort to include other related materials and resources that have been developed by other project and which could be of use to NOADs and national stakeholders interested in the adoption, revision and alignment of OS/OA policies a dedicated section on the OpenAIRE portal is being created.

A short introductory text will explain what the Toolkit is about.

In addition to the Templates, Checklists and Factsheets, the portal will also include European funded projects that have focused on OS/OA policies and training on OS/OA. The projects are presented below:

1. OPEN ACCESS POLICIES

EOSC PILOT

ABOUT THE PROJECT: EOSC PILOT supports the first phase in the development of the European Open Science Cloud (EOSC). It will propose and trial governance frameworks for the EOSC and contribute to the development of European open science policy and best practice; develop a number of demonstrators functioning as high-profile pilots that integrate services and infrastructures to show interoperability and its benefits in a number of scientific domains; and engage with a broad range of stakeholders, crossing borders and communities, to build the trust and skills required for adoption of an open approach to scientific research.

PROJECT WEBSITE: <https://eoscpilot.eu/node>

USEFUL RESOURCES:

Policy Landscape Review: <https://eoscpilot.eu/themes/wp3-policy/policy-landscape-review>

Open Science Policy Toolkit: <https://eoscpilot.eu/themes/wp3-policy/open-science-policy-toolkit>

Interim report and catalogue of EOSC skills training and educational materials: <https://eoscpilot.eu/themes/wp-7skills/interim-report-and-catalogue-eosc-skills-training-and-educational-materials>

PASTEUR4OA

ABOUT THE PROJECT: PASTEUR4OA (Open Access Policy Alignment Strategies for European Union Research) supported the European Commission's Recommendation to Member States of July 2012 on developing and implementing policies to ensure Open Access to all outputs from publicly-funded research. To do so, PASTEUR4OA supported Member States to develop and/or reinforce open access strategies and policies and facilitated their coordination among all Member States. It build a network of centres of expertise in Member States (Key Nodes) that developed a coordinated and collaborative programme of activities in support of policymaking at the national level under the direction of project partners.

PROJECT WEBSITE: <http://pasteur4oa.eu/>

USEFUL RESOURCES: The project produced a series of advocacy materials to support the adoption, reinforcement and alignment of open access policies at Member State level.

Toolkit for Research Performing Organisations <http://pasteur4oa.eu/resources?qt-resources=8#qt-resources>

Toolkit for Research Funding Organisations <http://pasteur4oa.eu/resources?qt-resources=9#qt-resources>

PASTEUR4OA Advocacy Resources <http://pasteur4oa.eu/resources>

Comprises Policy Guidelines, case studies (institutional, funder and national), thematic resources, briefing papers and the Toolkits

MedOANet

ABOUT THE PROJECT: MedOANet addressed the necessity for coordinated strategies and policies in Open Access to scientific information in Europe. The project enhance existing policies, strategies and structures for Open Access and contributed towards the implementation of new ones in six Mediterranean countries: Greece, Turkey, Italy, France, Spain, Portugal. It also promoted national and regional coordination of policies, strategies and structures in these six countries and beyond.

PROJECT WEBSITE: <http://www.medoanet.eu/>

USEFUL RESOURCES:

MedOANet Guidelines for Implementing Open Access Policies (available in English, Greek, French, Spanish, Italian, Portuguese and Turkish) <http://www.medoanet.eu/news/medoanet-guidelines-implementing-open-access-policies-available-7-languages>

Future TDM

ABOUT THE PROJECT: The FutureTDM project identified and reduced the barriers that inhibit the uptake of TDM for researchers, and innovative businesses. FutureTDM provided critical up-to-date assessments of legal regulations and policies impacting TDM in the EU, and placed them in the international research and innovation context. It adopted a bottom-up approach by

initiating dialogue between all relevant stakeholders, engaging them via knowledge cafés, workshops and representation on the advisory board to help identify barriers, common solutions and increase awareness of TDM practices and their potential.

PROJECT WEBSITE: <https://project.futuretdm.eu/>

USEFUL RESOURCES: <https://project.futuretdm.eu/publications/>

2. OPEN RESEARCH DATA POLICIES

LEARN

ABOUT THE PROJECT: The purpose of LEARN (Leaders Activating Research Networks: Implementing the LERU Research Data Roadmap and Toolkit) was to develop the LERU Roadmap for Research Data produced by the League of European Research Universities (LERU) in order to build a coordinated e-infrastructure across Europe and beyond. LEARN delivered: a model Research Data Management (RDM) policy; a Toolkit to support implementation, and an Executive Briefing in five core languages so as to ensure wide outreach.

PROJECT WEBSITE: <http://learn-rdm.eu/en/about/>

USEFUL RESOURCES:

LEARN Toolkit of Best Practice for Research Data Management <http://learn-rdm.eu/wp-content/uploads/RDMToolkit.pdf>

LEARN Project Resources <http://learn-rdm.eu/en/dissemination/>

RECODE

ABOUT THE PROJECT: The RECODE (Policy Recommendations for Research Data in Europe) leveraged existing networks, communities and projects to address challenges within the open access and data dissemination and preservation sector. The sector includes several different networks, initiatives, projects and communities that are fragmented by discipline, geography, and stakeholder category often working in isolation or with limited contact with one another. RECODE provided a forum for European stakeholders to work together towards common solutions to shared challenges and produced a set of policy recommendations targeted at key stakeholders in the scholarly communication ecosystem.

PROJECT WEBSITE: <http://recodeproject.eu/>

USEFUL RESOURCES: RECODE Policy Recommendations for Open Access to Research Data http://recodeproject.eu/wp-content/uploads/2015/01/recode_guideline_en_web_version_full_FINAL.pdf (summary booklet)

Policy Guidelines for open access and data dissemination and preservation (full report) <http://recodeproject.eu/wp-content/uploads/2015/02/RECODE-D5.1-POLICY-RECOMMENDATIONS- FINAL.pdf>

3. TRAINING AND SUPPORT

FOSTER

ABOUT THE PROJECT: FOSTER (Facilitating Open Science Training for European Research) was a coordination initiative that supported different stakeholders, especially young researchers, in adopting open access in the context of the European Research Area (ERA) and in complying with the open access policies and rules of participation set out for Horizon 2020 (H2020). It established, conducted and supported a European-wide training programme, with more than 100 training events, in 28 countries, with more than 6000 participants, on open access, open data and open science, consolidating training activities at downstream level and reaching different stakeholders, diverse disciplinary communities and countries in the ERA.

PROJECT WEBSITE: <https://www.fosteropenscience.eu/>

USEFUL RESOURCES: Designing successful Open Access and Open Data Policies- Introduction
<https://www.fosteropenscience.eu/node/2081>

Designing successful Open Access and Open Data Policies- Intermediate
<https://www.fosteropenscience.eu/node/2075>

RRI Tools

ABOUT THE PROJECT: The project developed and used a Training and Dissemination Toolkit on Responsible Research and Innovation (RRI). It was designed by all the stakeholders of the Research and Innovation (RI) chain of value, including Researchers, Civil Society, Industry and Education but will specially focus on Policy Makers in order to impact significantly in the future governance of RI.

PROJECT WEBSITE: <https://www.rri-tools.eu/>

USEFUL RESOURCES:

How to implement OA policies at institutions

<https://www.rri-tools.eu/how-to-pa-open-access#menu-anchor-id1-content>

GENDERACTION

ABOUT THE PROJECT: Genderaction (Gender Equality in the ERA Community) will create an innovative policy community for the implementation of the gender priority in the European Research Area (ERA) by setting up a network of representatives appointed by national authorities in 13 member states and associate countries.

Among its activities, Genderaction explored the relationship between Open Science, Open Innovation and the Gender dimension

PROJECT WEBSITE: <http://genderaction.eu/>

USEFUL RESOURCES: Policy Brief “Gender in Open Science and Open Innovation”
http://genderaction.eu/wp-content/uploads/2018/07/GENDERACTION_PolicyBrief5_Gender-OSOI.pdf

Full report will be soon available

EDISON

ABOUT THE PROJECT: EDISON (Education for Data Intensive Science to Open New science frontiers) focused on activities to establish the new profession of 'Data Scientist', following the emergence of Data Science technologies (also referred to as Data Intensive or Big Data technologies) which change the way research is done, how scientists think and how the research data are used and shared. This includes definition of the required skills, competences framework/profile, corresponding Body of Knowledge and model curriculum. Among its activities, the project developed a sustainability/business model to ensure a sustainable increase of Data Scientists, graduated from universities and trained by other professional education and training institutions in Europe.

PROJECT WEBSITE: <http://edison-project.eu/>

USEFUL RESOURCES: <http://edison-project.eu/library>

A further section will be dedicated to policy registries are shown below:

Policy Registries

ROARMAP Registry of OA Repository Mandates and Policies lists funder and research organizations mandates across the world

MELIBEA A directory of institutional OA policies lists academic/research institutions and funders' mandates requiring researchers to open/deposit/share their publicly funded research outputs.

SHERPA JULIET Research Funders' Open Access Policies

SHERPA ROMEO Publishers' Copyright and Self-Archiving Policies

3 | NEXT STEPS

The Policy TF activities span until the end of the project. The activities foreseen until M9 of the project have focused primarily on informing NOADs about the content of activities and on developing resources and materials for OS/OA “beginners”. The next phase (2nd semester of 2018 and 2019) will focus on the following:

3.1 Webinars

Once the revamped portal becomes public, a webinar will be organized aimed at familiarizing NOADs with the new resources and materials. The webinar will be recorded and publicly available through the portal in an effort to increase dissemination and assist those who wish to navigate through the “Policy Section”. (Time plan: by end of 2018).

Following the successful organisation of the first “in-house” webinar, a second one focusing on a thematic area of interest to the NOAD network (e.g. monitoring) will be organized. NOADs will be encouraged to present their experience through presentations. A Q&A session will encourage interaction and the exchange of ideas and practices (what worked well and what did not, lessons learned etc.). (Time plan: first semester of 2019).

A webinar has also been planned during Open Access Week 2018 entitled “Open Science Policies: what you need to know, how to advise on good policymaking and information/ trends on policies in Europe” (25/10/2018). The webinar is part of the webinars and tutorials organized by OpenAIRE and FOSTER for Open Access Week.

3.2 Workshops

This task will focus on:

- a) organizing an OpenAIRE workshop dedicated to the themes of the Task Forces (i.e. policy, legal, RDM). This will be discussed with the WP leader and the leader of the other TFs, while once a decision is reached further input will be asked from NOAD
- b) assisting NOADs in embedding policy related issues in their national workshops. To facilitate their work a template on “How to organize a policy workshop” will be developed.

3.3 Working with NOADs

The TF leader aims to participate at least twice a year to Regional Meetings in order to be informed about the latest national developments and explore ways of supporting their work through the development of additional resources and materials. Particular attention will also be placed on the country pages and the information related to policies.

3.4 Mentoring Scheme

On the basis of available project funds, together with the WP leader we will explore the possibility of organizing a Mentoring Scheme whereby a “more advanced NOAD” will mentor a “less experienced” one. This will involve visits and discussion with national stakeholder to allow the less experienced NOAD adopt an efficient strategy for the adoption of OS/OA policies. This could be part of a broader mentoring scheme organized by OpenAIRE Advance.