



EUROPEAN COMMISSION  
Directorate-General for Research & Innovation

# H2020 Programme

## Guidelines on

### Open Access to Scientific Publications and Research Data in Horizon 2020

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## History of changes

<b>Version</b>	<b>Date</b>	<b>Change</b>	<b>Page</b>
2.1	15.02.2016	<ul style="list-style-type: none"><li>the guide was also published as part of the Online Manual with updated and simplified content</li></ul>	all
3.0	26.07.2016	<ul style="list-style-type: none"><li>This version has been updated to reflect the extension of the Open Research Data Pilot</li></ul>	all

These guidelines clarify the rules on open access that cover beneficiaries in projects funded or co-funded under Horizon 2020. Note that these guidelines do not apply to their full extent to actions funded by the European Research Council (ERC). For information and guidance concerning Open Access and the Open Research Data Pilot at the ERC, please contact [erc-open-access@ec.europa.eu](mailto:erc-open-access@ec.europa.eu).

## 1. What is open access?

**Open access** (OA) refers to the practice of providing online access to **scientific information** that is free of charge to the end-user and reusable. 'Scientific' refers to all academic disciplines. In the context of research and innovation, 'scientific information' can mean:

1. peer-reviewed scientific research articles (published in scholarly journals) or
2. research data (data underlying publications, curated data and/or raw data).

### 1. Peer-reviewed scientific research articles

**Open access to scientific publications** means free online access for any user. Although there are no legally binding definitions of 'access' or 'open access' in this context, authoritative definitions of open access appear in key political declarations including:

- the 2002 [Budapest Declaration](#)
- the 2003 [Berlin Declaration](#)

Under these definitions, '**access**' includes not only basic elements - the right to read, download and print - but also the right to copy, distribute, search, link, crawl and mine.

### The 2 main routes to open access are:

- A. **Self-archiving / 'green' open access** - the author, or a representative, archives (deposits) the published article or the final peer-reviewed manuscript in an online repository before, at the same time as, or after publication. Some publishers request that open access be granted only after an embargo period has elapsed.
- B. **Open access publishing / 'gold' open access** - an article is immediately published in open access mode. In this model, the payment of publication costs is shifted away from subscribing readers. The most common business model is based on one-off payments by authors. These costs, often referred to as Article Processing Charges (APCs) are usually borne by the researcher's university or research institute or the agency funding the research. In other cases, the costs of open access publishing are covered by subsidies or other funding models.

## Misconceptions about open access to scientific publications

In the context of research funding, open access requirements do not imply an obligation to publish results. The decision to publish is entirely up to the grant beneficiaries. Open access becomes an issue *only if* publication is chosen as a means of dissemination.

Moreover, open access does not affect the decision to exploit research results commercially, e.g. through patenting. The decision on whether to publish through open access must come after the more general decision on whether to publish directly or to first seek protection.

This is illustrated in the chart at the end of this section, which shows open access to scientific publication and research data in the wider context of dissemination and exploitation.

For more information, see the [European IPR Helpdesk factsheet "Publishing vs. patenting"](#).

## 2. Research data

### Open access to research data

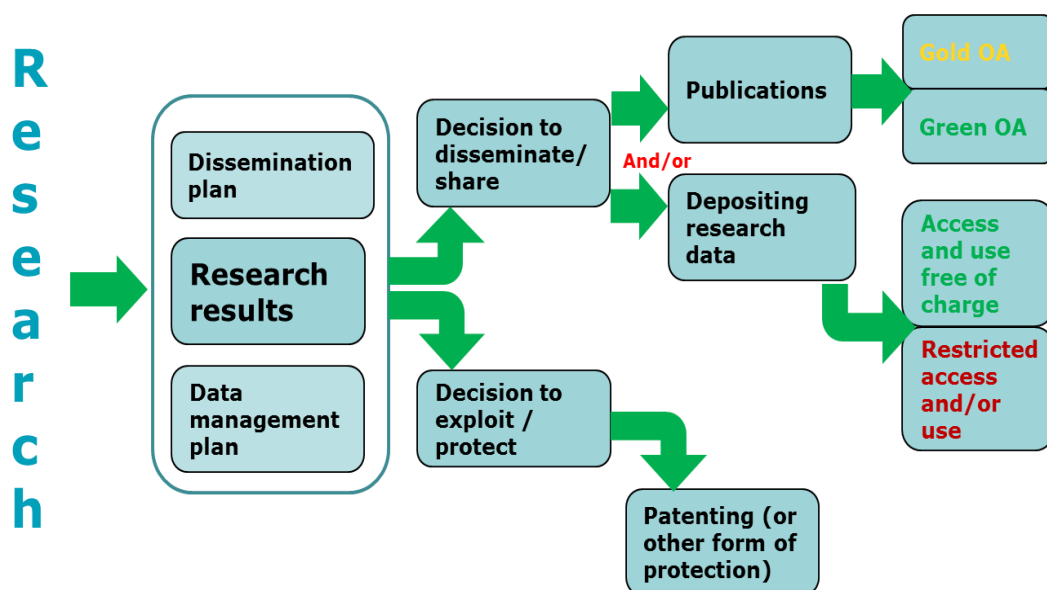
Refers to the right to access and reuse digital research data under the terms and conditions set out in the Grant Agreement.

### Research data

Refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion, or calculation.

In a research context, examples of data include statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images. The focus is on research data that is available in digital form.

Users can normally access, mine, exploit, reproduce and disseminate openly accessible research data free of charge.



**Graph: Open access to scientific publication and research data in the wider context of dissemination and exploitation**

## 2. Why have open access to publications and data in Horizon 2020?

Modern research builds on extensive scientific dialogue and advances by improving earlier work. The Europe 2020 strategy for a smart, sustainable and inclusive economy underlines the central role of knowledge and innovation in generating growth. Broader access to scientific publications and data therefore helps to:

- **build on previous research results** (improved quality of results)
- **encourage collaboration** and avoid duplication of effort (greater efficiency)
- **speed up innovation** (faster progress to market means faster growth)
- **involve citizens and society** (improved transparency of the scientific process).

This is why the EU wants to improve access to scientific information and to boost the benefits of public investment in research funded under Horizon 2020.

The Commission considers that there should be no need to pay for information funded from the public purse each time it is accessed or used. Moreover, it should benefit European businesses and the public to the full.

This means making publicly-funded scientific information available online, at no extra cost, to European researchers, innovative industries and the public, while ensuring that it is preserved in the long term.

Under Horizon 2020, the legal basis for open access is laid down in the Framework Programme and its Rules for Participation. These principles are translated into specific requirements in the Model Grant Agreement and in the Horizon 2020 work programmes.

The Annotated Model Grant Agreement provides specific explanations of the Model Grant Agreement. These guidelines build on these documents.

## 3. Mandate on open access to publications

[Article 29.2](#) of the Model Grant Agreement sets out detailed legal requirements on open access to scientific publications: under Horizon 2020, **each beneficiary must ensure open access to all peer-reviewed scientific publications** relating to its results.

To meet this requirement, beneficiaries must, at the very least, ensure that any scientific peer-reviewed publications can be read online, downloaded and printed.

Since any further rights - such as the right to copy, distribute, search, link, crawl and mine - make publications more useful, beneficiaries should make every effort to provide as many of these options as possible.

**Peer-reviewed** publications are those assessed by other scholars. Peer review is typically, though not exclusively, organised by the journal or publisher to which an article or manuscript is submitted. However, new approaches are expected to become more prevalent in years to come.

The dominant type of **scientific publication** is the journal article. Grant beneficiaries are also strongly encouraged to provide open access to other types of scientific publications including:

- monographs
- books
- conference proceedings
- grey literature (informally published written material not controlled by scientific publishers, e.g. reports).

### **The open access mandate comprises 2 steps:**

1. depositing publications in repositories
2. providing open access to them

These steps are explained in more detail below. They may or may not occur simultaneously, depending on whether open access publishing ('gold' open access) or self-archiving ('green' open access) is used, and, in the case of self-archiving, depending on the embargo period (if any).

### **Step 1 - Depositing publications in repositories**

Beneficiaries must deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications. This must be done as soon as possible and at the latest upon publication.

This step applies **even where open access publishing ('gold' open access) is chosen** to ensure that the article is preserved in the long term.

**'Machine-readable electronic copy'** - publications must be in a format that can be used and understood by a computer. They must be stored in text file formats that are either standardised or otherwise publicly known so that anyone can develop new tools for working with the documents.

In some cases, the final version of an article can be deposited *before publication*, for example at the time when the article is accepted by the journal. The latest acceptable time to deposit a publication is the date of publication.

Where possible, the version deposited should be identical to the published version (in layout, pagination, etc.).

A repository for scientific publications is an **online archive**. Institutional, subject-based and centralised repositories are all acceptable choices. Repositories that claim rights over deposited publications and preclude access are not.

The [Open Access Infrastructure for Research in Europe \(OpenAIRE\)](#) is the recommended entry point for researchers to determine what repository to choose. It also offers support services for researchers, such as the National Open Access Desks. Other useful listings of repositories are:

- [Registry of Open Access Repositories \(ROAR\)](#)
- [Directory of Open Access Repositories \(OpenDOAR\)](#)

[Article 29.2](#) of the Model Grant Agreement also mentions that beneficiaries must aim to deposit at the same time as the publication the research data needed to validate the results presented in the deposited scientific publications (**'underlying data'**), ideally in a data repository. Note that this requirement is not related to the openness of the data but to data management – openness of research data is addressed in [article 29.3](#) of the Model Grant Agreement as explained [in point 4 below](#).

## Step 2 - Providing open access to publications

After depositing publications beneficiaries must ensure open access to those publications via the chosen repository.

Beneficiaries can choose one of two main ways to meet this requirement:

1. **Self-archiving / 'green' OA:** beneficiaries can deposit the final peer-reviewed manuscript in a [repository](#) of their choice. They must ensure open access to the publication within at most 6 months (12 months for publications in the social sciences and humanities).
2. **Open access publishing / 'gold' OA:** researchers can also publish in open access journals, or in hybrid journals that both sell subscriptions and offer the option of making individual articles openly accessible. Monographs can also be published either on a purely open access basis or using a hybrid business model. 'Article processing charges' are eligible for reimbursement during the duration of the project (as other costs defined in [Article 6.2.D.3](#) of the Model Grant Agreement). As stated, the article must also be made accessible through a repository upon publication.

The **costs** of 'gold' open access publications incurred once a project is completed cannot be refunded from that project's budget. However, a mechanism is being piloted to address the issue of open access publication charges incurred once a grant agreement with the Commission has expired.

This pilot project, funded under the [OpenAIRE2020 project](#), supports open access publications arising from completed FP7 projects. Detailed information and conditions to apply for reimbursements is provided in the [OpenAIRE FP7 Post-Grant Open Access Pilot Application Guidelines](#).

Beneficiaries must also provide open access, through the repository, to the **bibliographic metadata** that identify the deposited publication. These must be in a standard format and must include the following:

- the terms [*"European Union (EU)" & "Horizon 2020"*][*"Euratom" & Euratom research & training programme 2014-2018"*]
- the name of the action, acronym and grant number
- the publication date, the length of the embargo period (if applicable) and a persistent identifier.

The purpose of the bibliographic metadata requirement is to make it easier to find publications and ensure that EU funding is acknowledged. Information on EU funding must therefore be included as part of bibliographic metadata so that Horizon 2020 can be properly monitored, statistics produced, and the programme's impact assessed.

To monitor any embargo periods, the publication date and embargo period must be provided. The persistent identifier (for example a Digital Object Identifier) identifies the publication. It enables a link to be provided to an authoritative version of the publication.

In all cases, the Commission encourages authors to retain their **copyright** and grant adequate licences to publishers. [Creative Commons](#) offers useful licensing solutions. This type of licence is a good legal tool for providing open access in its broadest sense.

Where possible, contributors should also be uniquely identifiable, and data uniquely attributable, through **identifiers** which are persistent, non-proprietary, open and

interoperable (e.g. through leveraging existing sustainable initiatives such as [ORCID](#) for contributor identifiers and [DataCite](#) for data identifiers).

#### 4. Extended pilot on open access to research data

The Commission has enabled access to and reuse of research data generated by Horizon 2020 projects through the Open Research Data Pilot (ORD Pilot). As stated in the 2017 work programme, the [pilot is being extended to cover all thematic areas](#) as described below. This is indicated in the [general introduction of the work programme](#), the [specific work programmes](#) and in the [General Annex L](#).

The legal requirements for participating projects are set out in [Article 29.3](#) of the Model Grant Agreement, included by default in the Grant Agreement (but can be removed by opting out – see below).

Open research data will be monitored throughout Horizon 2020 with a view to further developing the Commission's policy on open science.


##### **Opting out – partially or entirely**

By extending the pilot, open access becomes the default setting for research data generated in Horizon 2020.

However, not all data can be open. Projects can therefore opt out at any stage (either before or after signing the grant) and so free themselves retroactively from the obligations associated with the conditions – if:

- participation is incompatible with the obligation to protect results that can reasonably be expected to be commercially or industrially exploited
- participation is incompatible with the need for confidentiality in connection with security issues
- participation is incompatible with rules on protecting personal data
- participation would mean that the project's main aim might not be achieved
- the project will not generate / collect any research data or
- there are other legitimate reasons (*you can enter these in a free-text box at the proposal stage*).

The Commission's approach can therefore be described as "*as open as possible, as closed as necessary*".

 **Important:** Participation in the Open Research Data Pilot is **not** part of the project evaluation.

In other words, proposals will not be penalised for opting out.

During the lifetime of a project, a total opt-out is possible for any of the reasons highlighted above. In this case, Article 29.3 is removed from the Grant Agreement via an amendment.



Alternatively, projects can also choose to keep selected datasets or even all data closed for any of the reasons above, via their Data Management Plan.

For more information, and a template, please see the [Guidelines on data management in Horizon 2020](#).

### Exceptions for instruments


The Open Research Data Pilot will apply to all *thematic areas* of Horizon 2020 from the **start of the 2017 work programme**.

However, not all *instruments* are suitable for research data sharing. The following instruments are excluded:

- **"co-fund" and "prizes" instruments**
- **"ERC proof of concept" grants**
- **"ERA-Nets" that do not produce data**
- **SME instrument, phase 1**

Coordination and support actions are included in the Open Research Data Pilot, as many of them produce relevant data.

For 2-stage calls, information on participation in the Pilot will be requested only at stage 2.

 In summary, participating in the Open Research Data Pilot does not necessarily mean opening up all research data. Rather, the focus of the Pilot is on encouraging good data management as an essential element of research best practice.

### Types of data covered

1. **the 'underlying data'** (the data needed to validate the results presented in scientific publications), including the **associated metadata** (i.e. metadata describing the research data deposited), **as soon as possible**
2. **any other data** (for instance curated data not directly attributable to a publication, or raw data), including the **associated metadata, as specified and within the deadlines laid down in the DMP** – that is, according to the individual judgement by each project/grantee.

### What are the requirements of the Open Research Data Pilot?

Projects must meet the following requirements:

#### Step1

- they must deposit the research data described above, preferably in a research data repository. These are online research data archives, which may be subject-based/thematic, institutional or centralised. Useful listings of repositories include the [Registry of Research Data Repositories](#) and [Databib](#). The Open Access Infrastructure for Research in Europe (OpenAIRE) provides

additional information and support on linking publications to underlying research data. Some repositories like [Zenodo](#) (an OpenAIRE and CERN collaboration), allows researchers to deposit both publications and data, while providing tools to link them. Zenodo and some other repositories as well as many academic publishers also facilitate linking publications and underlying data through persistent identifiers and data citations.

**Step 2** – as far as possible, projects must then take measures to enable third parties to access, mine, exploit, reproduce and disseminate (free of charge for any user) this research data.

One straightforward and effective way of doing this is to attach [Creative Commons Licences](#) ([CC BY](#) or [CC0](#)) to the data deposited.

The [EUDAT B2SHARE tool](#) includes a built-in license wizard that facilitates the selection of an adequate license for research data.

At the same time, projects should provide **information** via the chosen repository about the tools available to the beneficiaries that are needed to validate the results, e.g. specialised software or software code, algorithms and analysis protocols. Where possible, they should provide these **instruments** themselves.

### **Periodic reporting**

Check further details on how to fill in [reporting tables for publications, deliverables](#) and the [process for continuous reporting](#) in the Participant Portal's grant management system.

### **Incentives / supporting measures**

Costs related to open access are eligible as part of the grant, if they fulfil the general eligibility conditions specified in the Grant Agreement.

You can also find specific technical and professional support services through the [OpenAIRE](#) and [EUDAT2020](#) projects.

## **5. Further information and help**

- [Horizon 2020 programmes](#)
- [European Commission Open Access Policy \(Open Science\)](#)
- Further activities on [Open Access](#) (Digital Agenda)
- [Horizon 2020 General Model Grant Agreement](#)
- [Horizon 2020 Annotated Grant Agreement](#) – for Articles [29.2](#) and [29.3](#)
- [Press release – open access to research results](#)
- [OpenAIRE](#)

Questions about open access?

[E-mail the Commission](#)

[E-mail the ERC](#)