



Open Science – EC policies and perspectives

Our Shared open Future: building from Tradition
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Holistic policy agenda: Scope & ambitions by 2020

Use & management of research results and data

- ✓ Open Data: FAIR data sharing is the default for funding scientific research
- ✓ European Open Science Cloud: All EU researchers are able to deposit, access and analyse European scientific data through the open science cloud, without leaving their desk. DSM strategy.
- ✓ Altmetrics: Alternative metrics (next generation metrics) to complement conventional indicators for research quality and impact (e.g. Journal Impact Factors and citations)
- ✓ Future of scholarly communication: All peer reviewed scientific publications are freely accessible and early sharing of different kinds of research outputs is encouraged

Aligning Research actors (researchers, institutions and funders)

- ✓ Rewards: The European research career evaluation system fully acknowledges Open Science activities
- ✓ Research Integrity: All publicly funded research in the EU adheres to commonly agreed Open Science Standards of Research Integrity
- ✓ Education and skills: All young scientists in Europe have the necessary skills and support to apply Open Science research routines and practices
- ✓ Citizen Science: Citizens significantly contribute and are recognised as valid knowledge producers of European science

3 years later (1)



OS Ambition	2015	2016	2017	2018	2019	2020
Open Access Publications	EC has OA mandatory since 2014 (H2020)	Council adopts ambition OA default by 2020		Plan S launched for immediate OA from 2020	Launch ORE	
Open Data			OD default under H2020			OD default under HE, Mandatory DMP + FAIR
EOSC	EOSC adopted under Digital Agenda			EOSC launched under Austrian Presidency 2018		EOSC should be governed by MS

3 years later (2)



	2015	2016	2017	2018	2019	2020
Indicators for Open Science				OSPP endorses new generation metrics	Declaration on Indicators for Open Science	
Citizen Science					Citizen Science as rewardable and fundable practice (Helsinki)	
OS Rewards				OSPP makes a priority of Rewards for OS	Embed OS in Modernisation, Europeanisation of Universities	
Open Science Agenda (with all 8 ambitions)		Council welcomes Open Science Agenda and endorses establishment EOSC and welcome OSPP		Open Science Policy Platform delivers integrated advice on 8 ambitions		Council Conclusions on Open Science
Research Integrity	European Code of Conduct implemented under Grant Agreement H2020- OS not fully addressed.					



Horizon Europe goes beyond OA (publications & data) to embrace & incentivize Open Science as modus operandi for science

- Clarifies and strengthens the **OA obligations**;
- **Empowers the authors** of scientific publications;
- Is home of **FAIR data sharing** while complying with IPR rules and exploitation obligations set in the GA;
- **Encourages Open Access** to other research output;
- Promotes compliance with '**Open Science principles**' through a combination of obligations and incentives;
- Implements **sanctions** for those beneficiaries that repeatedly and consistently fail to provide the required open access, requiring institutions to assume responsibility for their intellectual output;
- Introduces the use of '**new generation**' **metrics** for better assessing the impact of research output and the engagement in Open Science.



Articles setting Open Science obligations in Horizon Europe

Article 2 defines open access and open science

Article 10 sets the obligations for Open Science with regard to Open Access, RDM, FAIR and other open science practices. It also sets the principle of reciprocity in Open Science

Article 35 foresees further obligations in terms of IPR, Data Management Plans, FAIR and use of European Open Science Cloud and certain exceptions (“as open as possible as closed as necessary”)



Article 2- Definitions

(4) 'open access' means the practice of providing online access to research outputs resulting from actions funded under the Programme, free of charge to the end-user, in accordance with Article 10 and 35(3) of this Regulation;

(4a) 'open science' means an approach to the scientific process based on open cooperative work, tools and diffusing knowledge, including the elements of article 10.



Article 10- Open science

1. The programme shall encourage open science as an approach to the scientific process based on cooperative work and diffusing knowledge, in particular in line with the following elements:

- **open access to scientific publications** resulting from research funded under the Programme;
- **open access to research data**, including those underlying scientific publications.

These elements shall be ensured **in accordance with Article 35(3) of this regulation**. The latter shall also be in line with the principle '**as open as possible, as closed as necessary**';



Article 10- Open science

1a. The principle of reciprocity in open science shall be promoted and encouraged in all association and cooperation agreements with third countries, including agreements signed by funding bodies entrusted for indirect management of the Programme.

2. Responsible management of research data shall be ensured in line with the principles 'Findability', 'Accessibility', 'Interoperability' and 'Reusability' (**FAIR**). Attention shall also be paid to the long-term preservation of data.

3. Other open science practices shall be promoted and encouraged, including for the benefit of SMEs.



Article 35- Exploitation and dissemination

3. Beneficiaries shall ensure that **open access to scientific publications** applies under the terms and conditions laid down in the grant agreement. In particular, the beneficiaries shall ensure that they or the authors retain sufficient intellectual property rights to comply with their open access requirements.

Open access to research data shall be the general rule under the terms and conditions laid down in the grant agreement, ensuring the possibility of exceptions **following the principle 'as open as possible, as closed as necessary'**, taking into consideration the legitimate interests of the beneficiaries including commercial exploitation and any other constraints, such as data protection rules, privacy, confidentiality, trade secrets, Union competitive interests, security rules or intellectual property rights.

The work programme may provide for **additional incentives or obligations to adhere to open science practices.**



Article 35- Exploitation and dissemination

4. Beneficiaries shall manage all research data generated in a Horizon Europe action **in line with the FAIR principles and in accordance with the terms and conditions laid down in the grant agreement and shall establish a Data Management Plan.**

The work programm may provide, where justified, for **additional obligations to use the European Open Science Cloud (EOSC)** for storing and giving access to research data.



Proposed Implementation of Plan S in HE

- **Publication in hybrid journals:** not to be funded (already announced in Horizon Europe's Impact Assessment)
- **Open access via repositories:** embargoes not to be accepted (now 6/12 months accepted)
- **Copyright retention and open license:** copyright retention already in the HE Regulation. Open license to be required in MGA
- **Reinforcement of the requirements of journals, platforms and repositories:** in line with the « compliance » requirements of Plan S



Thank you

<https://ec.europa.eu/research/openscience/index.cfm>