

OCTOBER 2016



Open Access Publishing Policies in Science Europe Member Organisations

Key Results from Science Europe and Global Research Council Surveys

SURVEY REPORT



**SCIENCE
EUROPE**
Shaping the future of research

October 2016

'Open Access Publishing Policies in Science Europe Member Organisations: Key Results from Science Europe and Global Research Council Surveys': D/2016/13.324/8

Authors: Jean-Claude Kita (Fund for Scientific Research – F.R.S.-FNRS, Belgium), Nathalie Duchange (National Institute of Health and Medical Research – INSERM, France), Agnès Ponsati (Spanish National Research Council – CSIC, Spain).

Editorial input by: Science Europe Working Group on Open Access to Research Publications

Photo Credits:

© iStockphoto.com/Nastco
© iStockphoto.com/RossHelen
© iStockphoto.com/mrdoomits
© iStockphoto.com/Petrovich9
© iStockphoto.com/urfinguss
© iStockphoto.com/ktsimage
© iStockphoto.com/kynny
© iStockphoto.com/Bombaert
© iStockphoto.com/Catalina-Gabrie Molnar
© iStockphoto.com/stnazkul
© iStockphoto.com/junpinzon
© iStockphoto.com/Teun van den Dries

For further information please contact the Science Europe Office:
office@scienceeurope.org

© Copyright Science Europe 2016. This work is licensed under a Creative Commons Attribution 4.0 International Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited, with the exception of logos and any other content marked with a separate copyright notice. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.



Open Access Publishing Policies in Science Europe Member Organisations

Key Results from Science Europe and Global Research Council Surveys

SURVEY REPORT

CONTENTS

List of Abbreviations	2
Executive Summary	3
1 Introduction	5
1.1 Context and Purpose	5
1.2 The 2012 Science Europe Survey	6
1.3 The 2014 Global Research Council Survey	6
1.4 Aim of the Survey Report	6
1.5 Profile of Respondents	7
1.6 Limits of the Study	8
2 Open Access Policies and Guidelines	10
2.1 On the Definition of the Term 'Open Access'	10
2.2 Open Access Statements and Declarations	10
2.3 General Policies on Open Access to Research Publications	10
2.4 Strategies Regarding Gold Open Access	11
2.5 Strategies Regarding Green Open Access	12
2.6 Other Activities in Conjunction with Open Access Scientific Communication	14
2.7 Awareness-raising Activities, Training and Good Practices	14
3 Mechanisms to Pay for Open Access Publication Charges	15
3.1 Policies/Measures to Support Gold Open Access	15
3.2 Conditions Attached to the Funding of APCs	16
4 Monitoring Activities and Incentive Instruments	20
4.1 Monitoring the Progress of Open Access	20
4.2 Compliance with Open Access Mandates	20
4.3 Linking Open Access to Evaluation	20
4.4 Incentives, Rewards and New Metrics	21

5 Challenges	22
5.1 Challenges Regarding Gold Open Access	22
5.2 Challenges Regarding Green Open Access	23
5.3 Other Areas of Action in Implementing Open Access	23
5.4 Key Findings	25
6 Concluding Remarks and Outlook	27
6.1 Recent Developments and Current Directions	27
6.2 Outlook	27
Notes and References	28
Annex: State of Play of Science Europe Member Organisations' Open Access Policies 2016	30

LIST OF ABBREVIATIONS

AKA	Academy of Finland
APCs	Article Processing Charges
CNR	National Research Council, Italy
CSIC	Spanish National Research Council
DFE	Danish Council for Independent Research
DFG	German Research Foundation
FNR	National Research Fund, Luxembourg
F.R.S.-FNRS	Fund for Scientific Research, Belgium
FORTE	Swedish Research Council for Health, Working Life and Welfare
FWF	Austrian Science Fund
FWO	Research Foundation Flanders, Belgium
GACR	Czech Science Foundation
GRC	Global Research Council
HGF	Helmholtz Association, Germany
HRB	Health Research Board, Ireland
INRA	National Institute for Agricultural Research, France
MO	Member Organisation
MPG	Max Planck Society, Germany
MRC	Medical Research Council, UK
NCN	National Science Centre, Poland
NWO	Netherlands Organisation for Scientific Research
OA	Open Access
OTKA	Hungarian Scientific Research Fund
RCN	Research Council of Norway
RCUK	Research Councils UK
RFO	Research Funding Organisation
RPO	Research Performing Organisation
SE	Science Europe
SNSF	Swiss National Science Foundation

Executive Summary

In 2016, Open Access (OA) to scholarly publications received renewed political attention as part of a wider agenda for 'Open Science' highlighted by the Dutch Presidency of the Council of the EU. Against this background, this survey report highlights some of the efforts made by public research organisations in Europe over the past few years to develop and implement OA policies. It also lists some remaining challenges that need to be met in order to facilitate and accelerate the transition towards full OA for all scholarly publications by 2020, as called for in the conclusions on 'The Transition Towards an Open Science System' adopted by the Council of the EU on 27 May 2016.^[1]

This survey report presents an overview of the development of the OA policies of Science Europe Member Organisations (SE MOs) up to 2014; these are major European public Research Funding Organisations (RFOs) and Research Performing Organisations (RPOs). The report is based on information gathered through two surveys conducted in late 2012 and early 2014. The survey analysis, verification of data and consolidation of the report were carried out over the two years prior to the publication of the survey report, and include data relevant up to 2014.

In addition, up-to-date data until July 2016 were collected from SE MOs regarding their OA policies, as reflected in the Annex "State of Play of Science Europe Member Organisations' Open Access Policies 2016".

A number of observations can be made based on the practices of SE MOs surveyed in this report in regard to the implementation of OA policies. There are some common trends and some notable differences in the approaches chosen. This partly reflects the different missions of RFOs and RPOs, the different ways in which research is organised and embedded in specific legal and financial contexts around Europe, and differences across disciplines and research cultures. It is also clear that, in some cases, different preferences with regard to policies reflect concerns about additional or uncontrolled costs associated with some models, given that in general it is recognised that scientific communication represents only a small part of the overall research budgets.

Policies

A common feature is that all surveyed organisations had implemented OA policies, whether mandatory or not, or were in the process of implementing one.

A few RPOs and RFOs had an exclusive preference for OA delivered by repositories (Green OA), and most SE MOs' policies had a Green OA component; none had an exclusive preference for OA delivered by journals (Gold OA). All organisations surveyed had either put in place an institutional repository or had mandated the deposition of articles in an institutional or disciplinary repository. Repositories were considered to be key components of the research infrastructure, as they are essential to ensure that the results of publicly-funded research are broadly disseminated, made openly accessible and preserved for the long term.

RFOs generally considered article processing charges (APCs) as eligible costs in funded projects. RPOs generally allowed researchers to pay for APCs as part of their research budget. In some cases, RPOs entered into agreements with publishers which offered discounts on APCs for their researchers.

For organisations that dedicated funds to support APCs, a number of conditions were usually put in place to control costs, to define the OA services expected from publishers and to ensure the quality of the publishing journal.

Whether mandatory or not, most MOs clearly communicated their OA policies and OA engagement to the public through a dedicated institutional web page. This was generally available in the local language as well as in English.

Revision of policies is frequent among MOs. The main reasons behind this are: (1) to extend policies to other kinds of research output such as monographs and data; and (2) to adjust policies in accordance with European or international recommendations.

Finally, some MOs included their OA policies in their long-term strategic planning. Governments may also mention OA as a key national strategy issue.

Monitoring Implementation

There was an explicit recognition of the necessity to monitor OA implementation and compliance to existing policies. However, one of the key issues for institutions and funders was the difficulty of identifying published papers that were produced by their researchers or funded by them, and therefore in establishing the proportion of these papers that were published in OA.

A need for much more effective co-operation with publishers was identified to track and report article metadata in a standardised form for reporting and compliance purposes.

Incentives

Organisations declared that awareness-raising activities needed to be appropriately defined for different target audiences (different disciplines, different career stages, different types of actors). Lack of awareness was identified as a barrier to the implementation of OA, so efforts on that issue need to continue. Targeting early-career-stage researchers (PhDs and postdocs) is essential in encouraging new habits of publication and enabling a cultural shift in the way that OA is perceived by the research community.

Concerted Actions

In the view of MOs, concerted actions at all levels, national and international, were crucial to the implementation of OA and the transition to 'Open Science'.



1 Introduction

1.1 Context and Purpose

In April 2013, Science Europe (SE) Member Organisations (MOs) adopted common principles for the transition to Open Access (OA) to research publications. The Research Performing Organisations (RPOs) and Research Funding Organisations (RFOs) that comprise the membership of Science Europe recognise that OA improves the pace, efficiency and efficacy of research: “By enabling re-use and computational analysis of published material, Open Access sparks innovation and facilitates interdisciplinary research, as well as scholarly exchange on a global scale.”^[2]

The SE principles state that SE MOs will implement their own OA policies according to their individual needs but with coherence in their efforts. Transition to OA is a world-wide process and is discussed at global level in fora such as the Global Research Council^[3] (GRC), which involves research councils worldwide. The GRC endorsed an ‘Action Plan towards Open Access to Publications’ during its second annual meeting, in May 2013.^[4]

SE MOs and the other research organisations participating in the GRC share the same principles in terms of fostering the transition to OA:

- ▶ **Encouragement and support for publishing in OA journals.**
RPOs and RFOs can be instrumental in providing funding to support (a) OA outlets operated by the scientific community and (b) budgets covering publication charges claimed by OA journals.
- ▶ **Encouragement and support for open repositories.**
Repositories of high-quality standards are valuable infrastructures for the harvesting, long-term preservation and dissemination of scientific information.
- ▶ **Development of common and efficient technology tools to ensure interoperability between institutions operating and hosting repository infrastructures.**
Information dissemination tools continuously evolve, and therefore management processes need to be adapted accordingly.

These principles signal the support for the progressive transition from subscription-based to OA publishing of publicly-funded research.

“Open Access sparks innovation and facilitates interdisciplinary research, as well as scholarly exchange on a global scale”



6 1.2 The 2012 Science Europe Survey

Following the publication of an interim report by the SE Working Group on Open Access to Research Publications in 2011, the experts of the Working Group expressed genuine concerns that:

- ▶ researchers do not publish in OA journals due to insufficient access to funds to cover publication charges; and
- ▶ subscription-based scholarly journals remain the benchmark for publication.

Against this backdrop, in October 2012 SE launched an online survey^[5] with three broad aims:

1. to identify the policy guidelines that MOs have put in place;
2. to examine the processes which enable researchers to cover OA publication costs; and
3. to provide SE MOs with recommendations on how to support publications costs.

Potential respondents were officers dealing with OA or related matters in individual SE MOs. They were invited to complete a questionnaire which focused on the following three aspects related to OA publishing:

- ▶ Current policies to support OA publishing
- ▶ Mechanisms in place to cover OA publication costs (commonly referred to as article processing charges or APCs)
- ▶ Conditions under which APCs can be supported

A total of 37 individual SE MOs from 22 European countries responded to the survey. This equated to a response rate of 74%.

1.3 The 2014 Global Research Council Survey

In 2013, the GRC adopted an Action Plan towards Open Access to Publications,^[6] which aimed to help:

- ▶ raise awareness about OA in the research community;
- ▶ promote and support OA; and
- ▶ assess the implementation of OA.

In order to monitor progress in implementing the 14 actions contained in the Action Plan, the GRC conducted an online survey in 2014, to gather information on the state of OA implementation in GRC-participating organisations from around the world.

The GRC survey was distributed to 106 organisations in January 2014. The outcome was a sample of 64 valid responses from five different world regions: Africa, the Americas, Asia, the Middle East and Northern Africa (MENA), and Europe. From Europe, a total of 41 organisations were invited to participate in the survey and responses were received from 30, of which 27 were SE MOs at the time.

The data collected from the European organisations (mostly SE MOs) gave an overview of the main features of their policies as well as the issues they considered particularly challenging with regard to implementing these policies. In addition, the survey provided some evidence of how SE MOs were responding to the recommendations of the SE principles and of the GRC Action Plan, leading to a gradual alignment of some features of their OA policies.

1.4 Scope of the Survey Report

This report seeks to present the key results from both the SE survey of 2012 and the GRC survey of 2014 with a particular focus on the progress made and new initiatives developed in the two-year interval among SE MOs who responded to both surveys. It is expected that the results included in this report will help MOs to identify areas where more specific support is needed to achieve SE objectives.

It should be noted that not all organisations surveyed by SE in 2012 (37 SE MOs) responded to the GRC survey (27 SE MOs) and vice versa. As a result, the findings presented here take into account **only** the data from the 21 SE MOs which responded to both surveys.

1.5 Profile of Respondents

The following section provides an overview of the surveys' respondents corresponding to the intersecting set of organisations which took part in both surveys (Table A). The 21 responses taken into

account for this report come from 16 RFOs^[7] and 5 RPOs located in 18 European countries.

7

The 21 organisations whose responses to both surveys form the basis of this report are listed in Table A, and are referred to as 'the respondents' throughout the rest of this report.

Table A List of respondents (SE MOs who responded to both the 2012 and 2014 surveys)

Organisation	Acronym	RFO	RPO	Country
Academy of Finland	AKA	×		Finland
National Research Council	CNR		×	Italy
Spanish National Research Council	CSIC		×	Spain
Danish Council for Independent Research	DFF	×		Denmark
German Research Foundation	DFG	×		Germany
National Research Fund	FNR	×		Luxembourg
Fund for Scientific Research	F.R.S.-FNRS	×		Belgium
Swedish Research Council for Health, Working Life and Welfare	FORTE	×		Sweden
Austrian Science Fund	FWF	×		Austria
Research Foundation Flanders	FWO	×		Belgium
Czech Science Foundation	GACR	×		Czech Republic
Helmholtz Association	HGF		×	Germany
Health Research Board	HRB	×		Ireland
National Institute for Agricultural Research	INRA		×	France
Max Planck Society	MPG		×	Germany
National Science Centre	NCN	×		Poland
Netherlands Organisation for Scientific Research	NWO	×		The Netherlands
Hungarian Scientific Research Fund ^[8]	OTKA	×		Hungary
Research Council of Norway	RCN	×		Norway
Research Councils UK*	RCUK	×		United Kingdom
Swiss National Science Foundation	SNSF	×		Switzerland
TOTAL	21	16	5	18

* RCUK while providing a single response, actually represents seven independent research councils in the UK (AHRC, BBSRC, EPSRC, ESRC, MRC, NERC, and STFC), all of which are individual SE MOs. Several research councils have mixed RFO/RPO functions. However, for the purpose of this survey, RCUK response is considered as a single response from a RFO.

1.6 Limits of the Study

The compilation of the data for analysis from the 2012 SE survey and the 2014 GRC survey caused a number of methodological difficulties:

▶ Representation

The analysis of progress in implementation of OA required that results were available from both surveys. This was the case for 21 out of the 37 organisations which participated in the 2012 SE survey and 30 organisations in Europe which participated in the 2014 GRC survey. Therefore, this report does not purport to provide a full picture of OA policy developments in all SE MOs, nor does it seek to present data that are representative of all European countries. In addition, RFOs are somewhat over-represented in the responses compared to RPOs. Despite this limitation, the fact that both RFOs and RPOs contributed to the survey has enabled the identification of evidence-based institutional differences.

▶ Data analysis

A number of questions differed in their formulation between the two surveys, making it difficult to obtain perfect comparability. Some questions were asked only in one of the two surveys.

▶ Data actualisation

Finally, one must be aware that OA policy development is a fast-changing environment and the implementation of OA has further evolved since the two surveys were conducted. The data analysis reflects the respondent MOs' answers at the time of the surveys, up to 2014.

Therefore, to complement the analysis of the surveys' data, an annex to this report presents the state of play of OA policies among 24 SE MOs, up to 2016.

“The fact that both RFOs and RPOs contributed to the survey has enabled the identification of evidence-based institutional differences”





2 Open Access Policies and Guidelines

2.1 On the Definition of the Term ‘Open Access’

The majority of the respondents (81%) have signed the ‘Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities’,^[9] hereafter called ‘Berlin Declaration’.

Almost three-quarters of the respondents (71%), declared using an explicit definition of OA. When asked to provide criteria explicitly used to define OA, 75% of them referred to the following two criteria, listed in the ‘Berlin Declaration’:

- ▶ **To be listed as OA, publications must be freely available to the end-user. Their content can be copied, distributed, transmitted and displayed into derivative works by any user.**
- ▶ **A complete version of the work, including supplemental materials, is deposited in at least one accessible online repository using suitable technical standards.**

2.2 Open Access Statements and Declarations

Six respondents (29%) did not refer to an explicit definition of OA (AKA, CNR, FORTE, FWO, NCN, RCN).

However, these organisations have either signed the Berlin Declaration (FWO), approved the SE ‘Principles on the Transition to Open Access to Research Publications’ (all), or endorsed the OA mandate of the EU’s Horizon 2020 Framework Programme (AKA, CNR, RCN) requiring their researchers to publish their scientific results in OA.

Only a small number of responses explicitly mentioned support for other initiatives such as the San Francisco Declaration on Research Assessment (DORA)^[10] (FWF) and the Alhambra Declaration^[11] (CNR). It should be noted, however, that at the time of the surveys, DORA was a very recent development.

Participation in membership initiatives such as the Confederation of Open Access Repositories (COAR)^[12] and the Compact for Open Access Publishing Equity (COPE)^[13] were also mentioned.

2.3 General Policies on Open Access to Research Publications

Respondents were asked to describe the policies in place to support the implementation of OA. Overall:

- ▶ most organisations had existing OA policies in place (14);
- ▶ five organisations (three RFOs and two RPOs) reported in 2014 that they were preparing to introduce one; and
- ▶ one RFO reported not having an OA policy in place in 2014.

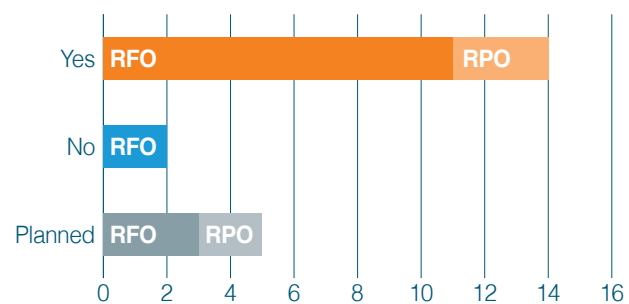


Figure 1 Responses to the question: “Does your organisation have any formal Open Access policies on Open Access to research publications?”

The majority of the existing policies came into force between 2006 and 2010 (see Figure 2) and five respondents (RCUK, SNSF, NWO, F.R.S.-FNRS, INRA) reported in 2014 that their policies had already been reviewed at least once since their introduction.



Figure 2 Responses to the question: “When was your OA policy first launched?”

Regarding the type of OA policies:

- ▶ Three respondents reported having an exclusive Green OA component in their policies (HRB, OTKA, DFF).
- ▶ Thirteen reported having policies that foresee both Gold and Green approaches to OA, with some of these indicating a preference for the 'Gold OA' approach.

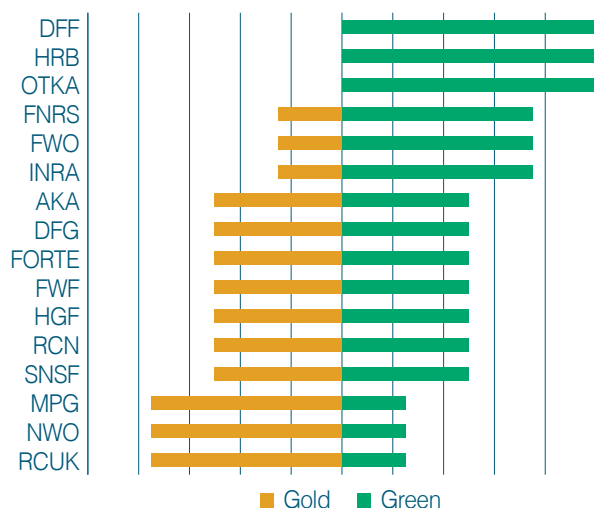


Figure 3 Classification of MOs according to Green vs Gold OA policies

Figure 3 shows the differences in the respondents' policies regarding their preference for a Gold or Green strategy. A set of weightings were attributed, reflecting the level of implementation and support for the Gold and Green approaches.^[14] Three types of organisation were identified according to their policy priorities:

- ▶ Organisations that exclusively supported the Green OA approach in publishing research (HRB, OTKA, DFF).
- ▶ Organisations that had a mixed approach towards OA without a preference, by supporting both strategies (AKA, DFG, SNSF, FORTE, HGF, FWF, RCN).
- ▶ Organisations that had expressed a preference for Gold (NWO, MPG, RCUK) or for Green (INRA, FWO, F.R.S.-FNRS).

According to the results of the 2014 GRC survey, a number of respondents had changed their policies since first reporting in the 2012 survey.

In particular, when asked to describe the policies in place in 2014, several organisations reported having introduced mandatory provisions to increase the effectiveness of their policies.

Despite the variety in terms of policies and practices, the revisions suggested a trend towards more compulsory clauses, be it by publishing in OA journals or by self-archiving in repositories.

2.4 Strategies Regarding Gold Open Access

OA delivered by journals (Gold OA) implies a payment to cover charges associated with the publication of the article in a journal. In transitioning to OA, funding issues were reported as important in the responses to both surveys, and special emphasis was placed on funding-related issues in the OA policies of most organisations.

For most respondents, covering the cost of APCs was the main financial mechanism under the author- or institution-pays business model. While the majority of organisations claimed to financially support the payment of APCs (Figure 4), only a few (FORTE, FWF, NWO) had established dedicated APC budgets from which authors can obtain funding to cover APCs.

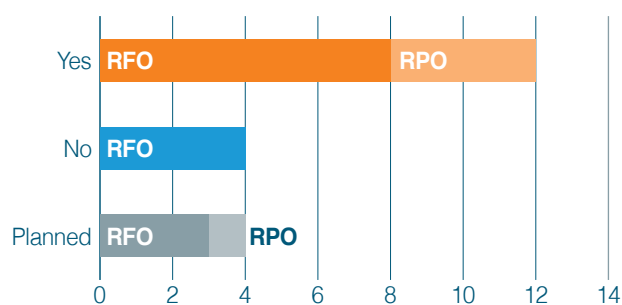


Figure 4 Responses to the question "Does your organisation have any policies and means to support researchers publishing research papers in Gold or hybrid Open Access journals (dedicated funds, block grants, etc.)?"

12 Although most of the respondents considered institutional funding as a powerful tool for promoting OA publishing, there were some concerns relating to the criteria that needed to be fulfilled when covering OA fees.^[15] The research publication ecosystem was still presenting structural rigidities tied to the lack of transparent pricing models and a number of real and perceived barriers to a full transition to OA.

Respondents considered a variety of approaches to alter the status quo, including:

- ▶ adopting funding measures in support of OA publishing providing clear visibility of the amount of the expenditure (FWF, RCUK);
- ▶ building sustainable prerequisites to the allocation of APCs;
- ▶ maximising the benefits of co-ordination across multiple funding sources (HGF);
- ▶ shifting subscription budgets into OA publication funds (MPG, FWF);
- ▶ identifying efficient strategies for partnerships with publishers; and
- ▶ offsetting mechanisms against payments for hybrid^[16] Open Access (FWF).

2.5 Strategies Regarding Green Open Access

Responses to questions related to repositories showed that the responding MOs considered these infrastructures as an essential component of their OA policies (Figure 5).

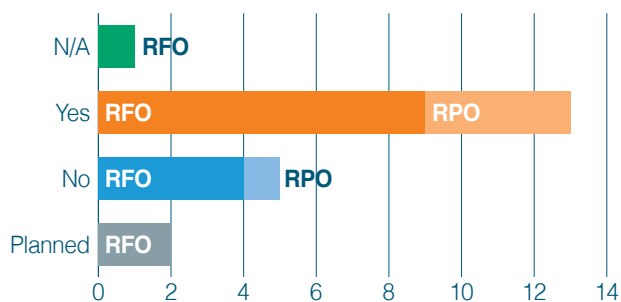


Figure 5 Responses to the question “Does your organisation have any measures to support self-archiving of research papers into Open Access repositories through policy efforts?”

Most OA policies with a Green approach included provisions for archiving, either in institutional repositories (repositories attached to an institution, typically a university or RPO – CSIC, HGF, INRA, MPG) or disciplinary repositories (centralised repositories that specialise in a particular scientific discipline or field – FWF, some research councils in the UK). A policy could also be indifferent as to the type of repository used, as long as the repository chosen provided free and unrestricted access (RCN).

A number of OA mandates required the deposition of the final peer-reviewed manuscript into a repository for scholarly publications (DFF, F.R.S.-FNRS, FWF, FWO, RCN, SNSF). Open Access to the publications had to be ensured, within acceptable maximum embargo periods (usually six to 12 months). When there were no mandates, self-archiving was often strongly recommended as a primary option for access and dissemination of scientific information (DFG, MPG).

Organisations were asked to give comments on any other measures to support self-archiving of research papers into open repositories. Several institutions reported the development of sustainable (national or international) repository networks to facilitate greater accessibility to the information (SNSF, HRB). In some cases, the support given to repository development projects was accompanied by specific funding (FWF, RCUK).

Actions in favour of repositories included the support and use of international infrastructures and services, such as Europe PubMed Central, arXiv, OAPEN or DOAJ (FWF, MPG, RCUK, NWO). Networking at national or international levels was motivated by the need to link the format of metadata and datasets to repositories. This would allow SE MOs to provide higher standards of accessibility and to manage more efficiently the workflows of their research information systems.





“The majority of the existing
Open Access policies came into force
between 2006 and 2010”

2.6 Other Activities in Conjunction with Open Access Scientific Communication

Organisations were asked to provide information on their instruments and strategies to meet the needs of the evolving scholarly publishing system.

Some organisations (FWF, NWO, SNSF) already included books, monographs or other digital scholarly communication formats in their OA mandates where a dedicated funding programme was operational. A growing number of initiatives were under way to address these issues and could become a starting point to explore new ways of supporting and promoting other electronic publication formats. These included, for example, crowdfunding to render monographs open access, funding for the curation of monographs edition series (MPG), and calls for proposals dedicated for OA monographs (DFG).

A majority of responding RPOs reported having put in place (three out of five) or planning to put in place (one out of five) measures to support new models of OA scientific communication as described above. A smaller proportion of the responding RFOs (seven out of 16) reported the same.

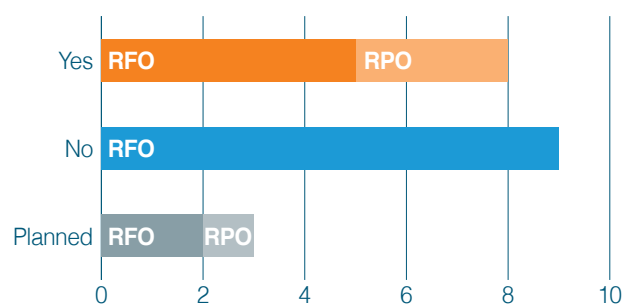


Figure 6 Responses to the question “Has your organisation put in place new models of OA scientific communication (for example, OA to data, OA books, etc.)?”

Since the topic of OA to data was relatively new at the time of the surveys, responses referring to measures to support access to, and sharing and re-use of, data were rather low. Only one-third of the respondents declared having in place policies and support (for example for infrastructures) for access to research data. The mechanisms in place ranged from permanent funding programmes (FWF, DFG) to support for data infrastructures (HGF).

2.7 Awareness-raising Activities, Training and Good Practices

About two-thirds of the respondents indicated that they were active in raising awareness of OA through activities and networking.

These respondents described and identified a series of activities, such as:

- ▶ Awareness-raising through multimedia information campaigns, workshops, conferences and other means (such as OA weeks or events) to advertise the benefits of OA to the players concerned: researchers, policy makers, universities, libraries, public authorities, publishers, data centres, funding agencies, research organisations.
- ▶ Collaborative projects in federating repositories (DFG) and supporting other OA services, such as those carried out by the network ‘Knowledge Exchange’.^[17]
- ▶ Strategies of networking with partner associations (SCOAP 3^[18]).
- ▶ Joining projects to provide further insights into developing and promoting national OA policies and aligning these policies (MedOANet,^[19] PASTEUR4OA^[20]).
- ▶ Innovative training programmes dedicated to early-career researchers, designed to stimulate change in publishing habits amongst the scientific communities (MPG). FWF is co-ordinator of the Open Access Network Austria (OANA).^[21]

Best practices were actively promoted by about half of the organisations (52% of respondents). This type of activity mainly consisted of providing a forum for discussion and a framework for the exchange of experiences via communication channels, including:

- ▶ Dedicated websites on open access success stories;
- ▶ Information portals;
- ▶ Collection of testimonials of researchers; and
- ▶ Publication of success stories in annual reports and newsletters.

3 Mechanisms to Pay for Open Access Publication Charges

3.1 Policies/Measures to Support Gold Open Access

In the 2012 survey, 62% of respondents reported that they provided financial support for OA publishing under the author- or institution-pays business model.

Roughly half of the respondents declared having a process or a budget in place to pay for APCs. Two organisations had dedicated budgets to fund APCs (FWF, NWO).

A similar model reported by another organisation (DFG) was based on a dedicated funding programme, while another approach consisted of providing block grants to universities who will then manage the OA budget (RCUK). APCs may also be part of a general publication budget used for covering other publishing-related charges (DFG, FWF). Three organisations indicated that the budget lies within the research budget (AKA, FNR, FWO) and two within the library acquisition budget (CSIC, MPG).

Whereas the overall number of organisations that claimed to support Gold publishing did not change between 2012 and 2014, policies and measures were refined over the two-year period. RFOs included APCs as eligible costs in the grants, set up dedicated funds for which researchers can apply, or dedicated a sum for OA publications that was given to grantees/research institutions. RPOs either established contracts with OA publishers providing discounts on APCs (CSIC, MPG) or operated OA publication funds (HGF).

Specific policy measures were varied:

- ▶ APCs are recognised as eligible, direct costs that can be covered by the research grant throughout the duration of a project (AKA, DFF, FNR, F.R.S.-FNRS, FWF, FWO, GACR, NCN, OTKA, SNSF).
- ▶ Grant-holders can apply for additional funds or a specific lump sum to cover both traditional and OA publication charges of peer-reviewed publications that result from supported projects. This includes covering APCs in OA journals as well as OA options in hybrid journals (FWF, DFG) and in one case can be used to cover APCs up to three years after conclusion of the project at the origin of publication (FWF).
- ▶ A separate funding scheme can be developed, allowing the research institutions to apply for support for their publication funds (RCN). For instance, the RCN covers up to 50% of the APC-expenses for the institutional publication funds in Norway.
- ▶ Grantees receive a fixed sum for OA publishing (FORTE).
- ▶ APCs are covered from central budgets and contracts with a number of Gold OA publishers to arrange central billing processes (MPG).
- ▶ Dedicated block grants are awarded to research institutions receiving grant funding and to the funder's own institutes (RCUK).
- ▶ Specific measures also exist to support open access to books, book chapters and monographs (SNSF, FWF).
- ▶ APC discounts on authors' invoices are obtained through institutional memberships to Gold OA publishers such as BioMed Central, SpringerOpen, and others (CSIC, FWF).

3.2 Conditions Attached to the Funding of APCs

Organisations that dedicate funds to support payment of APCs can attach a number of conditions to the provision of those funds. One-third of respondents reported having attached conditions to the payment of APCs and one institution planned to do so (FNR), as indicated in Figure 7.

The most common situation was that publication costs are eligible for those publications that directly result from funded projects. The types of publications that were considered eligible included peer-reviewed articles in journals, books, monographs and book chapters.

Another frequent condition was the requirement to deposit the publications in a subject (RCUK) or an institutional repository (CSIC, HGF, INRA), or in both (AKA, FWF).

Transparency was underlined as a key issue in funding APCs and many respondents reported a need for more price and cost transparency. The trend was to collect information about the funding spent on APCs and to share this information by making it public. New initiatives were started for that purpose.^[22]

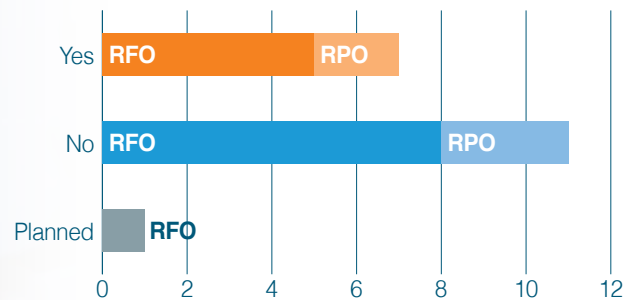


Figure 7 Responses to the question “Has your organisation defined specific criteria that need to be met when APCs are covered by your funds?”

While conditions attached to the funding of APCs already existed in 2012, they were further specified in the two-year interval since then.

These conditions, reported in greater detail in the 2014 survey, can be grouped in the following categories: general conditions, type of publication, quality insurance, licensing, and information management and technical aspects. These are summarised in Table B.

Table B Summary of the main conditions attached to the payment of APCs according to the 2014 survey

Category	Condition	Reported by
General conditions	One author funded or from the institute	Most MOs
	Funding acknowledgement	
	Repository depositing (institutional or disciplinary)	
Type of documents	Peer-reviewed publication (review article)	Most MOs
	Monographs, others	FWF, NWO, SNSF
Quality assurance	Quality-control that meets the specific discipline's standards	FNR, SNSF
	Journal listed in DOAJ	DFG, FWF
	Journal listed in Scopus and Web of Science	F.R.S.-FNRS, FWF
	Journal not listed in Beall's list	F.R.S.-FNRS
Licensing	License enabling broad re-use (no restriction)	FNR, FWF, MPG, RCUK
	Immediate and unrestricted access to the final published version of the paper	FWF, RCUK
Monitoring	Publications coming out of funded projects must be listed in the final project report	FWF
	All publication costs are monitored	FWF
Information management and costs control	Price cap for covering APCs	AKA, DFG, (FWF since 2015), SNSF
	No hybrid	F.R.S.-FNRS, MPG, NWO (since 2015)
	Follow-up of the costs for APCs/data analyses	MPG, FNR, FWF, SNSF
	Financial and economic benefits analysis	RCUK
	Deposit in an institutional/disciplinary repository	CSIC
	Data management issues taken into account	DFG, MPG, FWF
Data	Statement on how underlying materials, such as data can be accessed.	RCUK, FWF

3.2.1 General Conditions

A very common general condition was that at least one of the authors should be affiliated to the institution providing the support (in the case of RPOs) or be a grant recipient (in the case of RFOs).

In some cases researchers were committed to uploading their recent research outputs (last three years) in the repository after having benefited from the fund (CSIC).

In another case, lump sums for publication costs (DFG) enabled individual researchers to cover any kind of publication costs without conditions, whereas specific conditions applied to the funding available to universities; for example, the funds could not be used to cover APCs for hybrid OA.

In the case of block grants covering OA and other publishing costs (RCUK), the conditions applied to the receiving research organisations (universities). The terms of use of this block grant included a requirement that each institution establishes a publication fund, as well as sets up relevant workflow and processes to manage and allocate the funding available. In addition, each institution was required to collect relevant data, in order to report on how the funds have been used, and to provide details of the published outcomes of research funded by the research councils which were made available in OA (either through the Gold or Green route).

3.2.2 Type of Documents

Most conditions for APC funding in the reported policies focused on peer-reviewed journal articles. In the 2014 survey, some respondents indicated plans to assess whether other formats of publication (such as monographs) should be integrated in the policy (RCUK) or to consider alignment with the OAPEN^[23] library (NWO).

3.2.3 Quality Assurance

The organisations funded publication in OA journals only if there was a clear quality assurance mechanism in place (for example clear peer-review processes, transparent editorial process, clear licensing and pricing criteria). Publications had to meet the quality criteria of the specific discipline's standards, for example be listed in disciplinary bibliographic databases such as Web of Science or the Directory of Open Access Journals (DOAJ).

3.2.4 Licensing

A question which had drawn particular attention since 2012 was how productive re-use of openly accessible research information can be ensured. As an essential condition of several respondents, funding of APCs should allow immediate and broad access, no restriction in re-use and immediate deposition of the final published version in any repositories of the author's choice (FWF, FNR, RCUK). An additional condition usually attached was a suitable type of licence that allows all users to copy, distribute, transmit, or adapt the work and make commercial use of it under the condition of attributing the work in the manner specified by the author or licensor. The licence should ideally cover both content and metadata, and be clearly displayed on all relevant articles. Most respondents recommended a Creative Commons CC-BY licence for this purpose.



3.2.5 Monitoring and Costs Control

In the 2012 survey, respondents that monitored the amount of money spent on OA publishing during the last financial year reported spending an average of 0.05% of their mean annual research budget (ranging from €26,000 to €1.4 million) on APCs or other OA-related charges.

Between the 2012 and 2014 surveys, some respondents reported progress in the monitoring and data analysis of OA costs and an improved ability to assess the development of OA publishing (FWF, MPG, RCUK, SNSF).

For instance, FWF collected data about all Gold and hybrid OA articles where payments were either reimbursed to the authors or directly paid to the publishers by the FWF. In 2013, FWF reported spending €2.6 million for OA publication costs. That included €2.1 million for hybrid OA articles, €0.3 million for Gold OA articles and €0.2 million for OA monographs. This represented 1.3% of the FWF budget.

MPG monitored the level of APCs through the allocation of funds paid centrally.

Financial and economic analyses were commissioned by different organisations (MRC/RCUK, FWF, FNR).^[24]

In other instances, costs were conditional on a price cap by article (DFG, AKA, FWF since 2015, SNSF), were included in the budget allocated in the project funded (F.R.S.-FNRS, FWO, OTKA, NCN), or applicants for grants had the opportunity to apply for money in order to support OA publishing (GACR, DFG).

Concerning administrative issues, MPG had agreements with OA publishers to arrange central billing processes and NWO introduced an option in the administration system to indicate whether a publication is OA.

3.2.6. Data

Finally, some RFOs (RCUK, FWF) had conditions attached to data management and sharing, and required the inclusion of a statement explaining how and where the data supporting the publication could be accessed.



4 Monitoring Activities and Incentive Instruments

4.1 Monitoring the Progress of Open Access

Responses to both surveys reflected an explicit recognition for the necessity to monitor OA implementation and compliance with existing policies. However, one of the key challenges for institutions and funders was the difficulty of identifying articles that were produced by researchers whom they employed or funded, and therefore establishing the proportion of these articles that were published in OA.

Factors contributing to this included the fact that authors did not always acknowledge the source of funding behind their publications, or that institutions lacked mechanisms to capture this information.

Respondents did report setting up some mechanisms, ranging from a requirement for researchers to explicitly list OA outputs in final project reports and the exclusive use of OA publications in individual evaluations, to the establishment of OA indicators.

Monitoring the implementation of OA was more frequent among RPOs than RFOs; however almost 40% of RFOs planned to do so in the future (Figure 8).

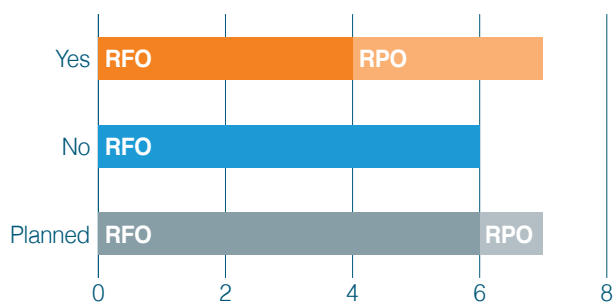


Figure 8 Responses to the question: “Has your organisation developed measures to monitor and review progress in implementing OA?”

In most organisations, monitoring was done at the level of research projects and/or annual reports (in the case of institutions). This was the case in Germany and in Austria where researchers were required to list their OA publications in final project reports and where institutions included publishing data in their annual reports. In Switzerland, the SNSF established an institutional monitoring of its OA policy in 2014. In one case in France (INRA),

a specific working group was set up to monitor policy implementation. Organisations in Belgium (F.R.S.-FNRS, FWO) relied on universities hosting the repositories for the uptake of research results.

4.2 Compliance with Open Access Mandates

The results of the surveys did not reveal that monitoring mechanisms were used more often or more effectively in countries where OA was mandatory. Monitoring mechanisms varied among respondents and were very much dependent on the national context and policy objectives.

However, OA mandates enabled the respondents to handle the monitoring of policies (quality, impact, costs, accountability) more efficiently.

A potential issue of concern for organisations that had mandatory OA was the range of services that needed to be in place in order for researchers to comply with requirements, such as self-archiving.

Another issue of concern was how to support researchers in coping with the increasingly complex environment of funding guidelines, monitoring and management tools, copyright and other legal issues, as well as incentive instruments that were in place.

4.3 Linking Open Access to Evaluation

In 2014, a number of respondents had established – or were planning to establish – links between compliance with OA mandates and evaluation.

This could take various forms, such as: requiring that OA publications are listed in the final project report (FWF); taking into account only the full version of electronic publications issued by institutional repositories in the evaluation and granting procedures (F.R.S.-FNRS and its associated funds); revising the OA policy to integrate evaluation (HRB, DFF); or requiring from every institute belonging to the organisation a report of its activities with regard to OA in the evaluation procedure; that was a description of efforts to promote unrestricted and long-term access to research findings (MPG).

4.4 Incentives, Rewards and New Metrics

The development of new metrics and indicators is essential for monitoring changes in scholarly communication, whether an article is published in a subscription-based journal or in an OA journal.

Only a few respondents reported innovative initiatives in this regard, probably due to the fact that the current framework of research activity indicators, although subject to criticism, remained the benchmark for monitoring and assessing the impact of research (Figure 9).

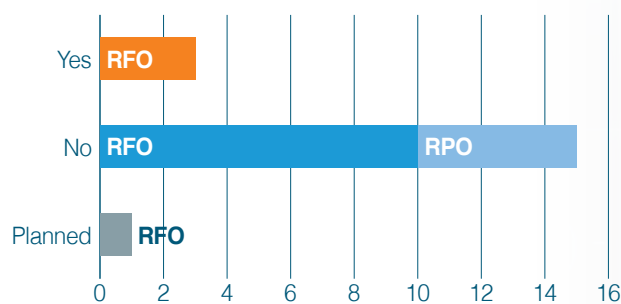


Figure 9 Responses to the question “Has your organisation developed activities to assess the quality and impact of research articles, including innovative metrics and from open repositories?”

In Germany, MPG was undertaking bibliometric studies and other impact metrics. In Austria, FWF joined SNSF (Switzerland) in a pilot study on the use of innovative metrics (altmetrics) for funding agencies.^[25] In Belgium, F.R.S.-FNRS adopted a policy to improve researchers’ compliance with the institutional policy on OA by linking the use of the repository to researchers’ assessment of research and career promotions.

It was identified that assessing the impact of research at article level would probably be insufficient, as many forms of research output started to emerge. With the volume of OA publications increasing, this issue is expected to become increasingly crucial for RFOs and RPOs.

5 Challenges

5.1 Challenges Regarding Gold Open Access

Acknowledging that barriers to the transition to OA were still not entirely removed, the respondents reported some key remaining challenges in relation to Gold OA:

▶ **Extending the policies to outputs other than journal articles.**

Any policy designed to change the status quo should consider extending the author-pays model to include other publication formats beyond journal articles. For instance, FWF and SNSF engaged with OAPEN to extend the Incentive Fund for OA Publications to various research outputs in Social Sciences and Humanities. SNSF planned provisions for covering the costs of publication of e-books, regardless of whether the research was funded by SNSF. In Austria, part of the budget for OA publication costs was dedicated to monographs, book chapters and other digital formats.

▶ **Covering charges for OA publications beyond the lifetime of the research grant.**

Some organisations have developed solutions to do this for specific periods of time, for example up to three years (FWF, RCUK).

▶ **The planning and provision for OA funds to cover large-scale research outputs require a far-ranging change of workflows for all SE MOs.**

Whenever the need for funding allocation is requested, SE MOs should consider the importance of cost-effective technical solutions for information, preservation and sustainability. In line with this, the operational processes and workflows have to be optimised at an early stage.

▶ **The development and maintenance of effective partnerships with publishers as necessary conditions for reducing transaction costs.**

▶ **Providing clear guidelines for researchers concerning the provision of research funding as well as the conditions for funding APCs.**

▶ **Monitoring the funding of APCs on a continuous basis and sharing the information.**



“The transition to OA is a global challenge, which brings the need for the exchange of good practices at European and international level”

5.2 Challenges Regarding Green Open Access

Both surveys revealed that the respondents considered repositories as valuable infrastructures for harvesting and accessing research information.

Several organisations raised important issues related to Green OA that were still to be addressed:

- ▶ The development of standards at the European level to ensure more effective interoperability between information management systems.
- ▶ The need to undertake innovative measures to improve interaction and communication between funders, RPOs, universities, data management centres, and publishers in facilitating deposit of publications.
- ▶ The rather limited level of financial support allocated to institutional repositories.
- ▶ Alignment of OA policies for the exchange of examples of best practices and new initiatives, which several organisations recognise the benefits of.
- ▶ The development of efficient mechanisms of monitoring and compliance.
A small number of organisations started to develop assessment and evaluation procedures when making promotion and research funding decisions (F.R.S.-FNRS).
- ▶ The development of quality control indicators. A promising initiative was the German Initiative for Network Information (DINI) which developed a self-evaluation certificate for repositories.
- ▶ The development of concerted actions regarding negotiations and agreements with publishers on issues such as licensing and acceptable embargoes.

5.3 Other Areas of Action in Implementing Open Access

5.3.1 Support for Open Access Journals

Among the respondents, ten organisations had policies in place to support OA journals, whether by direct or co-funding mechanisms, provided that the costs for APCs were sustainable. In most cases, these journals were listed in DOAJ.

In Austria, FWF had launched a programme to provide initial funding for innovative OA journals in social sciences and humanities. DFG in Germany formerly had a dedicated funding programme for 'scientific journals'.^[26] In the UK, the research councils allowed their grantees to use part of their block grant to support new OA journals. The RCN funding scheme for national social sciences and humanities journals in Norway required that journals receiving support must be Gold OA journals as of 2017.

5.3.2 Initiatives to Change Copyright Law

Together with other research organisations, DFG, HGF and MPG lobbied for a specific change in the German copyright law that facilitates self-archiving. Since January 2014, researchers in Germany were entitled to deposit, 12 months after original publication, their peer-reviewed working papers from journal articles into OA repositories – even if copyright was handed over to a publisher exclusively. However, there were some restrictions to the law which limited its usefulness in some ways; for instance, the law only applied to works resulting from publicly-funded research projects or resulting from extra-university research institutes.

The same applied in Austria where a new copyright law covered only serials but excluded all other publication formats.





5.3.3 Concerted Actions

RPOs and RFOs in Europe have been actively co-operating with partner organisations at national and international levels to foster OA: they are represented in a number of structures set up by the European Commission (as National Point of Reference, for instance), and participate in Science Europe, the Global Research Council, collaborative projects and other consortia or networks such as ESAC.^[27]

Several responses mentioned that there should be more focus on concerted action for the practical implementation of OA. The respondents suggested the following concerted actions:

- ▶ Agree on certain core principles, such as the maximum embargo period acceptable for each discipline, and the use of licenses which allow re-use. This would make policies easier to communicate. It would also allow the research community to offer a single common voice and to start to set out expectations in relation to the services provided by publishers, as well as to the funding models and infrastructure required (such as subject repositories), in order to enhance quality and make better use of public funds (RCUK).
- ▶ Agree on a common position that the funding of OA publication fees should be part of a transparent cost structure, incorporating a clear picture of publishers' service costs (MPG, FWO). Potential costs related to the proper functioning of OA are indeed a major concern, particularly whether or not there will be equal accessibility to all potential users (NCN). Enabling and increasing cost transparency could be achieved by collecting information and/or commissioning studies about cash flows in the publishing market and the money already spent on OA (SNSF).
- ▶ Enhance co-ordinated OA policies in line with EC initiatives, such as in the MedOANet project (F.R.S.-FNRS).
- ▶ Update policies on the basis of what is discussed, recommended and reported in SE and in other international bodies (FWO, FWF).
- ▶ Build an entire open citation and reference database of all research articles, books and journals as a next big step towards OA and its practical implementation (MPG).

Global co-operation is also required to answer the key question of how subscription journals could be transitioned into an OA mode. Since most of the prestigious journals are likely to be international, transition mechanisms need to be defined and implemented at the international level. Discussion is needed about the setting of arrangements with regard to the relation between payments of subscription fees and APCs (offsetting contracts).

Joint working could also include action to induce competition into the market for OA Gold publications to bear down on publishing costs.

5.4 Key Findings

5.4.1 Institutional Policies on Open Access

The respondents recognised the need to ensure the fundamental principles of OA by enacting institutional policies. A majority of RFO respondents (nearly 70%) and RPO respondents (60%) indicated they had an existing official OA policy in place.

The importance of improving the effectiveness of OA policies through a review process is a key element from a policy-making perspective, within the context of the changing landscape of publishing.

5.4.2 Support for OA Publishing

In their efforts to provide open access to research results, RFOs and RPOs have implemented different models for OA publishing. The main models are:

- ▶ **Gold OA payments by many funders.** A variety of funding schemes were in place: mechanisms to support the payment of APCs including block grants (RCUK), dedicated OA budget (NWO), and the granting of a lump sum in advance. In most cases, research grant funding may be allocated for publishing costs under suitable conditions.

▶ **OA payments for hybrid journals.**

This model was rejected by the majority of RFOs and RPOs to avoid payment for the same content twice, known as ‘double dipping’. In practice, the portfolio of hybrid journals is growing and avoiding payment for them is a challenge. However, some funders (FWF) have put in place a financial mechanism to ensure that the cost of scholarly publishing is contained. Offset systems aim to control publishing costs and to facilitate the transition to a full Gold OA.^[28]

▶ **Central budget for OA fees.**

An established model was to integrate OA publication costs into the central acquisition budget (MPG). In this model, agreements with publishers tend to reduce the costs of subscriptions and licenses and to provide an overall picture of the expenses and services which meet the requirements of the research institutions. There were still a number of uncertainties regarding the lack of transparency of pricing related to ‘big deals’, the market concentration by the big publishers, and the additional cost to publication system that the nature of ‘big deals’ can generate to some research organisations.

▶ **OA monographs funding.**

Some organisations (FWF, NWO) have introduced funding programmes to support OA publication model for monographs and book chapters. In the current model, the costs of publications are met by the funders only for the funded research (NWO), or stand-alone publications (FWF).

In attempting to support the transition towards OA, RPOs and RFOs would have to confront some points of concern, which are reflected in the requirements imposed by their policies:

▶ **The first point of concern is the long-term sustainability of the APC business model.**

With regard to publishing in OA journals, the transaction processing for APCs remains a subject of concern for most organisations. This includes the recurrent question of the scalability of processes that need to be optimised, such as cost control.

▶ **The second point of concern to be considered by RPOs and RFOs is the type of journals eligible for funding.**

According to a number of studies investigating scholars’ perception of OA journals,^[29] free access and the quality or prestige of the journal are two main drivers for publication choice. To respond to this need, a clear policy on OA publishing should apply a quality assurance prerequisite (for example, rigorous peer-review processes, transparent editorial board, and transparency in licensing and pricing options). Most respondents have established criteria for APC eligibility funding such as use of the Directory of Open Access Journals (DOAJ).

5.4.3 Monitoring and Compliance

Policies varied in the requirement for OA publications to be listed in grant or project reports, in the evaluation process and in monitoring deposition in repositories. Many RPOs and RFOs relied on repositories hosted and managed by universities or services provided by European portals such as OpenAIRE for the purposes of compliance reporting.

For the respondents, the management of research publication information necessitated standardisation, as the large volume of workflow was not amenable to manual processes.

In regard to possible measures related to non-compliance, the surveyed organisations were at the start of establishing instruments which would enable researchers from their institutions to meet the requirements of their policy. The surveys’ responses indicated that some respondents were planning to link OA publications to grant evaluation procedures as a way to address this issue. RPOs and RFOs would need to consider the development of additional indicators as a means for checking compliance with OA policies.

Difficulties encountered by a number of organisations related to a lack of information management systems which would enable publishers and organisations to share information on standard metadata exchange formats and facilitate systematic reporting process. This was identified as a remaining challenge for most SE MOs.

6 Concluding Remarks and Outlook

This survey report is intended to contribute to the further development and implementation of institutional OA policies, by providing an overview of issues that were identified by RPOs and RFOs when developing OA policies in the period 2012 to 2014.

6.1 Recent Developments and Current Directions

Since the time of the surveys, a number of initiatives and major developments have occurred, accelerating the transition towards Open Science and embracing Open Access to research publications, optimal re-use of research data and citizen science.

Launched at the 'Berlin 12' conference in December 2015, the OA2020 initiative^[30] aims to accelerate the transition by transforming subscription-based scientific journals to OA business models. OA2020 is based on a financial analysis published by the Max Planck Digital Library.^[31] According to the analysis, there should be enough money in the system to allow for a transition to OA at potentially neutral cost. The OA2020 initiative is outlined in an Expression of Interest statement that was endorsed by 53 parties at the end of June 2016, including SE MOs (SNSF, CSIC, NWO, MPG, Leibniz Association, FCT, DFG and FWF).^[32] An OA2020 roadmap has been proposed as a living document to complement the Expression of Interest.

Recent initiatives that aim at increasing institutional capacity to manage and control OA publishing costs and monitor compliance with OA policies include the ESAC initiative^[33] and the JISC Monitor^[34] programme.

At political level, Open Science was declared a key political priority for the EU during the Dutch Presidency of the Council of the EU in the first half of 2016. This resulted in significant political support for a transition to Open Access by European institutions and Member States.^[35]

6.2 Outlook

The transition to OA is a global challenge, which brings the need for the exchange of good practices at European and international level. Examples of such collaborations already exist, such as Knowledge Exchange, PASTEUR4OA, DARIAH,^[36] and MedOANet,

to name but a few; these provide an opportunity to discuss relevant issues related to OA.

The various policy approaches to promote OA vary according to the different interests and different priorities of the organisations. As indicated by the survey findings, OA policies that are mandatory are generally expected to be more effective.

The development of sustainable business models for OA publishing is crucial for its success. Whatever the chosen policy strategies, it is likely that a mixed model that includes different paths to OA will continue to prevail, with practical challenges in the future.

The role of RFOs and RPOs in this period of transition lies primarily in defining clear policies that can address all the separate but intertwined variables that determine the landscape of OA publishing, namely APC costs, subscription revenues, cash workflows, licensing, copyright issues and evaluation.

For this purpose, a very important aspect is the development of effective and sustainable information management systems within each organisation, which would enable the planning, monitoring and assessment of key indicators of progress in the implementation of OA policies as well as of global expenses of both subscriptions and APC expenditures.

The need to constantly adapt processes and mechanisms in consultation with various stakeholders should be carefully considered.

Building on complementary approaches gained by the MOs' different initiatives, as reported here, should help in shaping future directions and collaborations.

This report has focused on institutional OA policies among SE MOs and their development up to 2014. One key aspect deriving from the development of policies is the sustainable provision and funding of the infrastructure and services underlying the OA system of scholarly communication. Public research organisations – including RPOs, RFOs, universities and libraries – face the challenge of coming up with concerted approaches to support alternative publication models, infrastructures and services which ensure the long-term sustainability of public access to results of publicly-funded research. This will include pooling funds across borders.

Notes and references

- [1] 'The transition towards an Open Science system' – Council conclusions adopted on 27 May 2016, <http://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf>
- [2] 'Principles for the Transition to Open Access to Research Publications', <http://scieur.org/opennew>
- [3] The Global Research Council (GRC) is a permanent, but virtual, organisation, comprised of the heads of science and engineering research councils from around the world, dedicated to promoting the sharing of information and best practices for high-quality collaboration. More information: www.globalresearchcouncil.org
- [4] Global Research Council, 'Action Plan towards Open Access to Publications', 27–29 May 2013, Berlin, http://www.globalresearchcouncil.org/sites/default/files/pdfs/grc_action_plan_open_access%20FINAL.pdf
- [5] The members of the Task Group in charge of preparing the 2012 Survey were: Christoph Bruch (HGF), Patricia Clarke (HRB), Geraldine Clement-Stoneham (MRC/RCUK), Nathalie Duchange (INSERM), Fabian Jeker (SNSF), Jean-Claude Kita (F.R.S.-FNRS), Laurent Romary (INRIA), Anja Stöber (MPG, rapporteur). The survey was launched online, using the BOS platform. More information on BOS: <https://www.onlinesurveys.ac.uk/>
- [6] Global Research Council, 'Action Plan towards Open Access to Publications', 27–29 May 2013, Berlin, http://www.globalresearchcouncil.org/sites/default/files/pdfs/grc_action_plan_open_access%20FINAL.pdf
- [7] RCUK while providing a single response, actually represents seven independent research councils in the UK (AHRC, BBSRC, EPSRC, ESRC, MRC, NERC, and STFC), all of which are individual SE MOs. Several research councils have mixed RFO/RPO functions. For the purpose of this survey, RCUK response is considered as a single response from a RFO.
- [8] The Hungarian Scientific Research Fund (OTKA) no longer exists.
- [9] Berlin Declaration: <https://openaccess.mpg.de/Berlin-Declaration>
- [10] <http://www.ascb.org/dora/#>
- [11] http://www.openoasis.org/index.php?option=com_content&view=article&id=616:alhabra-declaration-on-open-access&catid=1:latest&Itemid=406
- [12] <https://coar-repositories.org/>
- [13] <http://www.oacompat.org/>
- [14] Four types of MO were singled out according to their policies in favour of Green or Gold OA or both:
- Organisations which recommend exclusively Green OA (weight: 100%)
 - Organisations which have a mixed approach towards OA and supported both roads equally (weight: 50% – 50%)
 - Organisations in favour of Green OA option and with limited measures in support of Gold (weight: 75% – 25%)
 - Organisations which consider the Gold model as the best approach with limited measures in support of Green (Weight: 75% – 25%)
- [15] In April 2015, Science Europe adopted common 'Principles on Open Access Publisher Services': <http://scieur.org/pr-oapprinciples>
- [16] Peter Suber defined hybrid journals as follows: "There are two kinds of OA journals, full and hybrid. Full OA journals provide OA to all their research articles. Hybrid OA journals provide OA to some and toll-access to others, when the choice is the author's rather than the editor's. Most hybrid OA journals charge a publication fee for the OA option." Suber P. (2012), 'Open Access', The MIT Press, p.140.
- [17] <http://www.knowledge-exchange.info/>
- [18] <https://scoap3.org/>
- [19] <http://www.medoanet.eu/>
- [20] <http://www.pasteur4oa.eu/>
- [21] <http://www.oana.at/en/home/>
- [22] See for instance the Open APC initiative in Germany: <https://openapc.github.io/about/> or the APC data collection in the UK done by JISC: <https://www.jisc-collections.ac.uk/Jisc-Monitor/APC-data-collection/>
- [23] <http://www.oapen.org/home>
- [24] 'Counting the costs of Open Access. The estimated cost to UK research organisations of achieving compliance with Open Access mandates in 2013/14', <http://www.researchconsulting.co.uk/wp-content/uploads/2014/11/Research-Consulting-Counting-the-Costs-of-OA-Final.pdf>; and 'Developing an Effective Market for Open Access Article Processing Charges', 2014, <https://wellcome.ac.uk/sites/default/files/developing-effective-market-for-open-access-article-processing-charges-mar14.pdf>
- [25] <http://dx.doi.org/10.5281/zenodo.28229>
- [26] This programme is now over and has been integrated into the programme 'Infrastructure for Electronic Publications and Science Communications'.

- [27] <http://esac-initiative.org>
- [28] This approach and other issues related to OA Business Models were clarified in the SE Briefing paper on 'Open Access Business Models and Current Trends in the Open Access Publishing System' (SE, April 2016), <http://scieur.org/briefing-oa>
- [29] SOAP Symposium, 13 January 2011, Berlin, <http://project-soap.eu/report-from-the-soap-symposium/>
- [30] <http://oa2020.org/>
- [31] <http://pubman.mpdl.mpg.de/pubman/faces/viewItemOverviewPage.jsp?itemId=escidoc:2148961>
- [32] <http://oa2020.org/mission/>
- [33] <http://esac-initiative.org/>
- [34] <https://jiscmonitor.jiscinvolve.org/wp/>
- [35] <http://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf>
- [36] <http://www.dariah.eu/>



Annex – State of Play of Science Europe Member Organisation's Open Access Policies 2016

To complement the findings from the 2012 and 2014 surveys, up-to-date data (up to July 2016) were collected from the Science Europe Member Organisations (SE MOs) regarding their Open Access (OA) policies. The updated information comes from a slightly larger set of organisations (24 MOs represented, rather than the 21 included in the survey report).

Country	Organisation	Organisation has an OA policy	OA policy includes a mandate	Embargo period (in months)	Repository prescribed or recommended by organisation	Approaches covered by policy: Green/Gold/both	Policy allows hybrid
Austria	FWF Austrian Science Fund	✓	✓	12	Any registered, Europe PMC for life sciences, FWF E-Book Library and OAPEN	Gold/Green	✓
Belgium	FWO Research Foundation Flanders	✓	✓	12	IR	–	✓
Belgium	F.R.S.-FNRS Fund for Scientific Research	✓	✓	6 STEM 12 SSH	IR	Green	✗
Czech Republic	GACR Czech Science Foundation	–	To come	–	–	–	–
Denmark	DFF The Danish Council for Independent Research	✓	✓	6 STEM 12 SSH	Any	Green	✗
Finland	AKA Academy of Finland	✓	✗	6 STEM 12 SSH	Any	Both	Not recommended
France	INRA National Institute for Agricultural Research	✓	✓	–	✓ IR	Green	✗
Germany	DFG German Research Foundation	✓ (any research grant)	✗ (any research grant)	6 STEM 12 SSH (any research grant)	Any (any research grant)	Gold only (Funding programme 'Open Access Publishing') Both (any research grant)	✗ (Funding programme 'Open Access Publishing') ✓ (any research grant)

✓ positive response (yes)

✗ negative response (no)

– information not available (N/A)

Payment of APC foreseen by organisation	Conditions for payment of APC	Organisation has a specific OA fund	Monitoring and compliance mechanisms in place	OA information available online*	Comments
✓	✓	✓	OA compliance is monitored by final reports. The compliance in 2015 was 83%.	YES (External Evaluation)	Costs for APCs can be requested 3 years after the end of a project. The additional funding for articles is limited up to €1,500 for Hybrid OA and €2,500 for Gold OA. OA books are funded by the programme 'Stand-Alone Publications'.
✓	–	✗	–	YES	Costs included in the budget allocated in the project.
✓	✓	✗	–	YES	Costs to be claimed up to a limit of €500 /article.
✓	–	✗	–	–	Costs included in the budget allocated in the project.
✗	✗	✗	Revising the policy to integrate evaluation	YES	Costs for APCs cannot be included in the budget allocated to the project.
✓	✓	✗	✓ OA compliance is monitored by final reports of the projects.	YES (General conditions and guidelines; Open Science)	<ul style="list-style-type: none"> • Costs included in the budget allocated in the project; • Price cap for APCs.
✗	✗	✗	–	–	
✓ (Funding programme 'Open Access Publishing') ✓ (any research grant: lump sum for publication costs; use of grant money possible to cover APC)	✓ (Funding programme 'Open Access Publishing') ✗ (any research grant)	✓ (Funding programme 'Open Access Publishing') ✗ (any research grant)	✓ (Funding programme 'Open Access Publishing') ✗ (any research grant)	YES (Funding programme 'Open Access Publishing' & Any research grant)	For funding programme 'Open Access Publishing': <ul style="list-style-type: none"> • Conditions only applicable for the dedicated funding programme; • APC must not exceed €2,000 to be covered; • monitoring and compliance by the grant receiving universities.

IR Institutional Repository
SSH Social Sciences and Humanities

STEM Science, Technology, Engineering and Mathematics
APC Article Processing Charge

* see page 36 for the links to the OA information

Country	Organisation	Organisation has an OA policy	OA policy includes a mandate	Embargo period (in months)	Repository prescribed or recommended by organisation	Approaches covered by policy: Green/Gold/both	Policy allows hybrid
Germany	HGF Helmholtz Association	✓	✓	6 STEM 12 SSH	✓ IR	–	✗
Germany	Leibniz Association	✓	✓ Yes, but only for the funding programme 'Leibniz Competition'	6 STEM 12 SSH	✓	Both	✗
Germany	MPG Max Planck Society	✓	✗	✗	✓ IR	Gold	✗ No double dipping, hybrid in the sense of offsetting only
Italy	CNR National Research Council	–	–	–	–	–	–
Italy	INFN National Institute for Nuclear Physics	✓ INFN has signed all main declarations (from the Berlin one onwards) and supports the principles of OA publishing and OA data	✗	✗	Any Institutional repository in preparation INFN National labs have their own public repository ; the oldest at LNF dates back to 1954	Both Mainly Green, but also founding partner of SCOAP3 initiative for GOLD OA	✗
Ireland	HRB Health Research Board	✓	✓	6 STEM 12 SSH	✓ Suitable interoperable repositories	–	–
Luxembourg	FNR National Research Fund	–	✗	–	–	–	–
Netherlands	NWO Netherlands Organisation for Scientific Research	✓	✓	0	Any	Both with preference for gold	✓
Norway	RCN Research Council of Norway	✓	✓	6 STEM 12 SSH	Any	Both	–

✓ positive response (yes)

✗ negative response (no)

– information not available (N/A)

Payment of APC foreseen by organisation	Conditions for payment of APC	Organisation has a specific OA fund	Monitoring and compliance mechanisms in place	OA information available online*	Comments
✓	✓	✗	–	YES	Agreements with Gold publishers.
✓	✓	✓	–	YES (but mainly on the websites of member institutes)	Leibniz Association has a general Open Access Policy plus a funding programme for projects of its institutes (funding programme 'Leibniz Competition'). Answers in the columns mainly refer to the funding programme.
✓	✓	Central budget, APCs paid out of central budget for electronic resources	✓ Annual monitoring of Max Planck OA shares in the Web of Science; reporting on APC spending via the OpenAPC initiative	YES	Central billing process; • Central agreement for APC coverage must be in place; • Requirement from every institute belonging to the organisation to report in the evaluation procedure about its activities in regard to OA.
–	–	–	–	–	Policy in preparation.
✗	–	✓ SCOAP3 membership	✗ A mechanism is in preparation	YES (Dedicated webpage in preparation, beta version)	INFN is founding member of SCOAP3 initiative for OA Publishing in High-Energy Physics. As National Coordinator, INFN organised and gathered, by means of the CRUI-CARE, CINECA and CIPE consortia in 2014, and of the CRUI-CARE consortium in 2015-2016, the partnership and fees collections of about fifty Universities and Research Institutes.
✓	–	✗	Planning to link OA Publication to grant evaluation	YES	APCs are part of research grants.
✓	Planned	✗	–	–	Policy in preparation.
✓	✓	✓	Option in the administration system to indicate whether a publication is in OA. Exploring external sources for better monitoring.	YES (Policy & Incentives)	NWO is engaging with OAPEN to extend the Incentive Fund for Open Access Publications to research outputs (including books) in social sciences and humanities.
✓	✓	✓	Working with Current research information system in Norway (CRISStin) to develop tools for efficient monitoring	YES	The RCN has a separate funding scheme allowing the research institutions to apply for support for their publication funds. The RCN covers up to 50% of the APC-expenses for the institutional publication funds in Norway.

Country	Organisation	Organisation has an OA policy	OA policy includes a mandate	Embargo period (in months)	Repository prescribed or recommended by organisation	Approaches covered by policy: Green/Gold/both	Policy allows hybrid
Poland	NCN National Science Centre	–	✘	–	–	–	–
Portugal	FCT Foundation for Science and Technology	✓	✓	6 STEM 12 SSH	✓ Any repository part of the RCAAP infrastructure	Green preferred, Gold accepted but not favoured	✓
Spain	CSIC Spanish National Research Council	✓	✘	Following Spanish-European Mandates	✓ IR	Green	✘
Sweden	FORTE Swedish Research Council for Health, Working Life and Welfare	✓	✓	6	No	Both	✓
Sweden	VR Swedish Research Council	✓	✓	6 STEM 12 SSH	Any	Both	✓
Switzerland	SNSF Swiss National Science Foundation	✓	✓	6 for articles, 24 for books	Any	Both	✘
United Kingdom	RCUK Research Councils UK	✓	✓	6 STEM 12 SSH	Depends on individual Research Councils	Both with a preference for gold	✓

✓ positive response (yes)

✘ negative response (no)

– information not available (N/A)

Payment of APC foreseen by organisation	Conditions for payment of APC	Organisation has a specific OA fund	Monitoring and compliance mechanisms in place	OA information available online*	Comments
✓	–	✗	–	Not in English	Costs included in the budget allocated in the project. Policy in preparation.
✓	✓	✗	✓ Through linking publication deposit in an OA repository to funded project evaluation procedures, by integrating RCAAP repository and FCT project evaluation systems	YES (Not in English)	Conditions for APC: <ul style="list-style-type: none"> • Immediate Open Access, no embargo allowed; • Permission must be given for the publication post-print to be deposited in repositories other than the publisher's own repository; • Creative Commons CC-BY license (or equivalent) must be attributed to the publication. No restriction to its access or re-use is allowed; • There will be a cap for the APC amount (temporarily postponed, cap value not yet determined).
✓	✓	✗	Annual report on OA peer review articles. Statistics module that gives data on percentage of OA content in the repository Compliance for Spanish Law	YES	APCs within library acquisition budget. Institutional memberships to Open Access publishers like BioMed Central, SpringerOpen, RSC, MDPI, and so on Policy under development.
✓	No specific	✗	✗	YES	OA costs allocated in grant budget. All grantees receive a fixed sum for OA publishing (around €3000).
✓	As from 2017, researchers will be required to use a CC Licence	✗	to be developed soon	YES	OA costs allocated in grant budget. In 2014, VR produced a proposal for national guidelines for both scientific publications/artistic works and research data. The proposal was submitted to the Government on 15 January 2015. Currently, the OA rules apply only to peer reviewed manuscripts in journals and conference reports, not to monographs and book chapters. VR plans to extend the requirement for open-access publishing to include books as well.
✓	✓	✗	✓ Monitoring since 2014: Monitoring October 2013- August 2015	YES	For articles and books out of SNSF-funded research, APC costs can be claimed from the agreed project funding up to a limit of CHF 3000 per publication. Independent publication grants cover upon request the costs of OA book publications of research results not generated within the scope of a project funded by the SNSF.
✓	✓	✓	✓	YES	Block grant awarded directly to research organisations.

Links to the Organisations' Webpages Describing the Open Access Policy or Open Access Repository

FWF – Austrian Science Fund

- Policy: <https://www.fwf.ac.at/en/research-funding/open-access-policy/>
- External Study: <http://www.pasteur4oa.eu/sites/pasteur4oa/files/resource/FWF-OA-Policy-Case-Study-7-Nov-2015-final.pdf>
- Guidelines: http://www.fwf.ac.at/fileadmin/files/Dokumente/Antragstellung/Einzelprojekte/p_endberichtsvorgaben.pdf
- Open Access Compliance Monitoring 2015: <https://doi.org/10.5281/zenodo.55249>
- FWF publication costs data: https://figshare.com/articles/Austrian_Science_Fund_FWF_Publication_Cost_Data_2015/3180166

FWO – Research Foundation Flanders

- <http://www.fwo.be/en/general-regulations/>

F.R.S.-FNRS – Fund for Scientific Research

- http://www.fnrs.be/docs/Reglement_OPEN_ACCESS_EN.pdf

DFF – The Danish Council for Independent Research

- <http://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/open-science/open-access-policy-for-public-research-councils-and-foundations>

AKA – Academy of Finland

- General conditions and guidelines: <http://www.aka.fi/en/funding/how-to-use-the-funding/general-conditions-and-guidelines-for-funding/>
- Open Science: <http://www.aka.fi/en/funding/responsible-research/open-science/>

HGF – Helmholtz Association

- http://www.helmholtz.de/en/science_and_society/helmholtz-association-commits-to-policy-1983/
- https://www.helmholtz.de/fileadmin/user_upload/2015-07-21_oa-policy-ivf_e.pdf

DFG – German Research Foundation

- Guidelines for the use of funds: http://www.dfg.de/formulare/2_012e/2_012e.pdf
- Guidelines Open Access Publishing: http://www.dfg.de/formulare/12_20/12_20_en.pdf

MPG – Max Planck Society

- <http://openaccess.mpg.de/policy>

INFN – National Institute for Nuclear Physics

- Open Access repository (beta version): <http://www.lnf.infn.it/sis/preprint/>

HRB – Health Research Board

- <http://www.hrb.ie/research-strategy-funding/policies-and-guidelines/policies/open-access/>

NWO – Netherlands Organisation for Scientific Research

- Policy: <http://www.nwo.nl/en/policies/open+science/open+access+publishing>
- Incentives: <http://www.nwo.nl/en/funding/our-funding-instruments/nwo/incentive-fund-open-access/incentive-fund-open-access---publications/incentive-fund-open-access---publications.html>

RCN – Research Council of Norway

- http://www.forskingsradet.no/en/Article/Open_access_to_publications/1254008525829

FCT – Foundation for Science and Technology

- http://www.fct.pt/documentos/PoliticaAcessoAberto_Publicacoes.pdf

CSIC – Spanish National Research Council

- <http://bibliotecas.csic.es/publicacion-en-acceso-abierto>

FORTE – Swedish Research Council for Health, Working Life and Welfare

- <http://forte.se/en/funding/how-it-works/open-access-and-swecris/>
- <http://forte.se/en/wp-content/uploads/sites/2/2015/11/open-access-policy-of-forte.pdf>

SNSF – Swiss National Science Foundation

- Policy: <http://www.snf.ch/en/theSNSF/research-policies/open-access/Pages/default.aspx>
- Monitoring report covering the period from October 2013 to August 2015: http://www.snf.ch/SiteCollectionDocuments/Monitoringbericht_Open_Access_2015_e.pdf
- Financial/economic analysis: http://www.snf.ch/SiteCollectionDocuments/Finanzflussanalyse_e.pdf
- OAPEN-CH Pilot project pilot project aiming at studying OA books publications: <http://www.snf.ch/en/funding/science-communication/oapen-ch/Pages/default.aspx>

RCUK – Research Councils UK

- <http://www.rcuk.ac.uk/research/openaccess/>

VR – Swedish Research Council

- <http://www.vr.se/inenglish/researchfunding/applyforgrants/conditionsforapplicationsandgrants/openaccess.106.5adac704126af4b4be280007766.html>



Science Europe is a non-profit organisation based in Brussels representing major Research Funding and Research Performing Organisations across Europe.

More information on its mission and activities is provided at www.scienceeurope.org.

To contact Science Europe, e-mail office@scienceeurope.org.



Science Europe
Rue de la Science 14
1040 Brussels
Belgium

Tel +32 (0)2 226 03 00
Fax +32 (0)2 226 03 01
office@scienceeurope.org
www.scienceeurope.org