



**Building a Research Infrastructure and Synergies
for Highest Scientific Impact on ESS**

H2020-INFRADEV-1-2015-1

Grant Agreement Number: 676548



**Deliverable D6.4: Three New ESS Member Countries
(Full Member, Observer, Associated Country)**



1 Project Deliverable Information Sheet

BrightnESS Project	Project Ref. No. 676548	
	Project Title: BrightnESS - Building a Research Infrastructure and Synergies for Highest Scientific Impact on ESS	
	Project Website: https://brightness.esss.se/	
	Deliverable No.: 6.4	
	Deliverable Type: Other	
	Dissemination Level: Public	Contractual Delivery Date: 30 August 2018
		Actual Delivery Date: 23 August 2018
	EC Project Officer: Mina Koleva	

2 Document Control Sheet

Document	Title: 20180823_BrightnESS_D6.4_v6_ACJ	
	Version: 1.0	
	Available at: https://brightness.esss.se	
	Files: 1	
Authorship	Written by	Lenka Petkova (ESS) Ute Gunsenheimer (ESS)
	Reviewers	John Womersley (ESS)
	Approved by	BrightnESS Steering Board



3 List of Abbreviations and Acronyms

AFC	Administration and Finance Committee
ANSTO	Australian Nuclear Science and Technology Organisation
BARC	Bhabha Atomic Research Centre
BELSPO	Belgian Federal Science Policy Office
CERN	European Organisation for Nuclear Research
CFI	Canada Foundation for Innovation
CINS	Canadian Institute for Neutron Scattering
CNS2016	6th Conference on Neutron Scattering
CREMLIN	Russian and European Measures for Large-Scale Research Infrastructures
CSNS	China Spallation Neutron Source
ERA	European Research Area
ESRF	European Synchrotron Research Facility
ESS	European Spallation Source
GSO	Group of Senior Officials
HZB	Helmholtz-Zentrum Berlin
IHEP	Institute of High Energy Physics
ILL	Institut Laue-Langevin
ILO	Industrial Liaison Office
IMP	Institute of Modern Physics
ISSPUL	Institute of Solid State Physics of the University of Latvia
IST	Instituto Superior Técnico
IZM	Latvian Ministry of Education and Science
J-PARC	Japan Proton Accelerator Research Complex
MoC	Memorandum of Collaboration
MoU	Memorandum of Understanding
MYRRHA	Multipurpose Hybrid Research Reactor for High-tech Applications
NWO	Netherlands Organisation for Scientific Research
PSI	Paul Scherrer Institute
PI	Principal investigator
RPI	Portuguese Research Reactor
SCK•CEN	Belgian Nuclear Research Centre
TÜBİTAK	Scientific and Technological Research Council of Turkey



4 List of Pictures

Picture 1: Journalists from Spanish media outlets at the ESS construction site, June 2017	11
Picture 2: ESS Science Seminar in Brussels, September 2017	12
Picture 3: Netherlands Organisation for Scientific Research (NWO) in a meeting at ESS, December 2016.....	13
Picture 4: ESS Science Workshop in Riga, May 2017	14
Picture 5: ESS Partner Day in Lisbon, November 2015	15
Picture 6: ESS Partner and Industry Day in Ankara, October 2015.....	15
Picture 7: ESS participates in the Brazil-Sweden Excellence Seminar in Brasilia, May 2016.....	16
Picture 8: Canadian scientific delegation visits ESS, November 2017	17
Picture 9: MoU signing between IMP of the Chinese Academy of Sciences and ESS, May 2016.....	17
Picture 10: Delegation from India on the Horizon deck at ESS, May 2018.....	18
Picture 11: Toshiji Kanaya, Director of the J-PARC Materials and Life Science Division during a visit to ESS, January 2018.....	18
Picture 12: CREMLIN project meeting held at ESS, October 2017.....	19
Picture 13: Scientific delegation from South Africa visits ESS, July 2017	19



Table of Contents

1	Project Deliverable Information Sheet	2
2	Document Control Sheet.....	2
3	List of Abbreviations and Acronyms	3
4	List of Pictures	4
5	Executive Summary	6
6	Background	7
6.1	Objectives/Criteria	7
6.2	Target Countries.....	7
7	New Members Policy	9
8	Activities by Country	11
8.1	Founding Observers Turned into Founding Members.....	11
8.1.1	United Kingdom	11
8.1.2	Spain	11
8.2	Observers	12
8.2.1	Belgium.....	12
8.2.2	The Netherlands.....	13
8.3	MoU Countries	13
8.3.1	Iceland.....	13
8.3.2	Latvia	14
8.3.3	Lithuania.....	14
8.4	ERA	15
8.4.1	Portugal	15
8.4.2	Turkey.....	15
8.5	Global	16
8.5.1	Australia	16
8.5.2	Brazil	16
8.5.3	Canada.....	16
8.5.4	China.....	17
8.5.5	India.....	18
8.5.6	Japan	18
8.5.7	Russia	18
8.5.8	South Africa	19
9	Conclusion	19
10	Annex: New Members Policy	20



5 Executive Summary

The European Spallation Source (ESS) is a partnership of 15 countries committed to the goal of building and operating the world's leading facility for research using neutrons. The Organisation has been actively approaching new countries to explore membership potential and to anchor ESS as a truly international facility. With the help of BrightnESS, ESS has been raising awareness and organising networking activities to create opportunities for new partner involvement. These efforts resulted in the admission of two new Member Countries, and in establishing and strengthening trustful relations with around a dozen of other countries from Europe and beyond. The United Kingdom became a Founding Member in June 2016. The country was the first Founding Observer to upgrade its status after ESS had become an ERIC, and served as a good example for other Founding Observers to pursue full membership. Spain followed in April 2018. Countries which have become Founding Members by April 2018 joined the ESS partnership on the same conditions as Founding Members which became a part of the ERIC in 2015. Thanks to the support provided by BrightnESS, 50% of Founding Observers have now changed their status and become Founding Members, which is a major achievement. Another success facilitated by activities carried out within the framework of BrightnESS was the request by the two remaining Founding Observers, that is Belgium and Netherlands, to prolong their observer status in order to allow for additional time to advance domestic discussions about full membership in ESS. Both countries will have to engage in negotiations with ESS as the deadline to join ESS on the same terms as Founding Members from 2015 passed in April 2018.

Enlargement activities are, by nature, centred around stakeholder relations and thus require a meticulous, long-term follow-up beyond the lifetime of the project. They are also highly dependent on the political developments in each of the targeted countries and are affected by national policy and budgetary decisions. For these reasons, the highly ambitious goal of three new Member, Observer or Associated countries set at the beginning of the project could not fully materialise. However, the solid foundation laid down with the help of BrightnESS for future interactions with countries on all continents will continue to reap benefits in the long run.

In addition to this, BrightnESS also supported ESS in developing a goal-oriented process for identifying potential new Members guided by New Members Strategy and New Members Policy. The policy introduced a new collaboration category of Associates, which allows ESS to seek members from countries outside the European Research Area and collaborate with them on member-like terms. The policy strengthens the position of ESS as a truly international facility and ensures long-term sustainability of BrightnESS enlargement activities by providing a structured framework for future discussions with potential partners.

This report gives a brief overview of the New Members Policy and summarises enlargement activities carried out by ESS between September 2015 and August 2018 with the aim to identify, attract and ultimately bring on board new Member Countries.



6 Background

The European Spallation Source is the story of a new facility built on an established vision. Daily progress on the construction site and in the development of the technical components make it clear that ESS, after 20 years, is a reality. European nations are together building a neutron source of unparalleled power and scientific performance. With an “Expression of Interest” campaign launched in 2013, ESS successfully secured Partner Countries’ political and financial support for Europe’s next generation neutron source. In July 2014, the Host Countries, Sweden and Denmark, publicly declared that sufficient funding had been committed to begin the construction of ESS. Since then, the Organisation has been actively approaching new countries to explore membership potential and anchor ESS as a truly international facility. Additional members will help to strengthen the overall collaboration by providing a stronger intellectual, political and financial base. For this reason, ESS has been pursuing activities intended to identify, attract and ultimately bring on board new Member Countries.

6.1 Objectives/Criteria

In December 2014, the ESS Steering Committee discussed and took note of a White Paper titled “Plans and Strategies for New Members”. The document was prepared by ESS management and described generally the need to organise activities in the context of the facility’s construction to enlarge membership. The European Spallation Source ERIC Council, the successor of the ESS Steering Committee, has been regularly updated about the progress of enlargement activities in and beyond Europe, and has actively contributed to the relevant documents, procedures and strategies developed thereafter. After a dedicated workshop organised in 2016, the Council discussed and took note of the following objectives presented by management for enlarging the ESS membership base:

- Maximise contributions to construction;
- Maximise contributions to operations for new partners;
- Increase membership not only for material support, but also for political support;
- Consider “quality” that new Members bring as an important criterion, especially the potential to contribute scientifically;
- Seek partners outside of Europe.

The above-mentioned objectives form the key pillars underpinning all enlargement activities of ESS and guide the Organisation in making strategic decisions about which countries to engage first according to membership criteria. Membership in ESS provides added value to Member Countries and ESS alike. It contributes to the exchange of scientific know-how, supports the enlargement of user communities on national level, and contributes to capacity building in countries with emerging users. At the same time, the scientific and technical excellence that new Members bring adds capability to the facility by enabling access to a broader base of human and technical resources.

6.2 Target Countries

When the BrightnESS project kicked-off on 1 September 2015, ESS had:

- **11 Founding Members:** Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Norway, Poland, Sweden and Switzerland, and
- **4 Founding Observers:** Belgium, the Netherlands, Spain and the United Kingdom.

The launching of BrightnESS happened in parallel with the transition of ESS to an ERIC. The European Commission formally confirmed the establishment of ESS as an ERIC in mid-August, and the decision took effect as of 31 August 2015. The ESS was originally established as a Swedish limited liability corporation owned by the Swedish and Danish governments. The company completed the transfer of assets, obligations and personnel to European Spallation Source ERIC by 1 October 2015, and was closed down.

The key priority for enlargement activities of ESS before and after the transition to an ERIC has been to turn Observers into Members. A successful transition into Members will provide a foundation for the process and demonstrate the necessary steps to be taken for turning Observers or Potential Members into full Members. In parallel, the Organisation is undertaking activities aiming to prompt countries, that have signed from 2009 onwards a Memorandum of Understanding (MoU) with ESS, into becoming Observers and later Members. The European Spallation Source also continuously engages countries in the European Research Area (ERA), and seeks partners outside Europe. Figure 1 below gives a brief overview of the current member base of ESS and its enlargement circles. At the end of the BrightnESS project in August 2018, ESS had 13 Founding Members and 2 Founding Observers. The United Kingdom and Spain sealed their commitment to the project by becoming Founding Members. Chapter 8 gives more detail about the story of these two countries and activities carried out in all other states targeted by ESS.

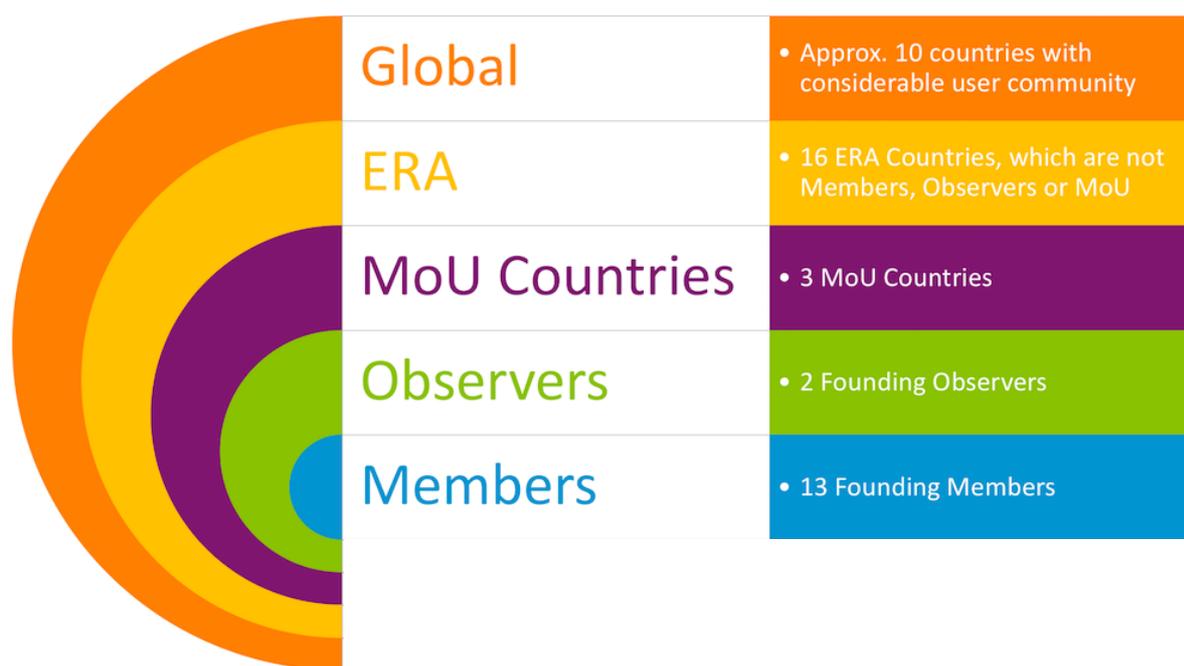


Figure 1: Current member base and enlargement circles of ESS

The political will and interest of countries to get involved in the ESS project is directly linked and dependant on the existence of national neutron user communities, which have a crucial role in harnessing the benefits of membership for their own country. In Spring 2016, within the framework of BrightnESS, ESS started to systematically collect consolidated information about the technical capacity of 15 neutron sources in Europe in order to identify scientific trends in the European neutron scattering community. The primary objective of the activity was to provide ESS with data which could help the Organisation to make informed decisions about enlargement activities, shape relevant policies and develop tailored outreach strategies.



The key conclusion that emerged from the BrightnESS survey was that the neutron scattering community in Europe is stable and comprises 5777 unique users (double counting unaccounted for). Nevertheless, it is of crucial importance that the community is maintained at its current size or even better that it is enlarged. According to data collected in the survey, the total number of principal investigators (PIs) who carried out research at European neutron sources in a single calendar year is 3559. Out of them, approx. 88% conducted research at the so-called large-scale facilities which host between 450-1600 users per year.

Figure 2 below shows the distribution of PIs per country according to the affiliation of their home institute. There are 15 countries with more than 20 PIs. All of them except for Russia, Portugal and Austria are already either Founding Members or Founding Observers of the European Spallation Source ERIC. There are only five countries with more than 100 PIs and all of them are already anchored in the ESS partnership: Germany (1055), United Kingdom (705), France (524), Switzerland (179), and Italy (118). The sum of PIs from all Founding Member and Founding Observer Countries is 2993, which represents 84% of all PIs who have led research experiments at neutron sources in Europe. If we deduct the number of non-European PIs from the total number of PIs in Figure 2, the proportion of PIs from countries which are represented at ESS raises further to 94%. This indicates that the membership base of ESS is rather large in relation to PIs and already covers a significant proportion in Europe.



Figure 2: Number of principal investigators per country

7 New Members Policy

In February 2017, the Council deliberated on proposals from Director General’s Discussion Paper exploring possibilities for non-European countries to establish collaboration with ESS on member-like terms. Afterwards, two key documents were prepared with the help of the BrightnESS team to guide the Organisation: New Members Policy for the Council to adopt, and New Members Strategy to take note of. The policy was adopted by the Council of the European Spallation Source ERIC in December 2017. It outlines in detail the conditions and processes for the enlargement of the ESS member base and also establishes a new formal structure for collaboration with countries outside the ERA, which may have legal or other barriers to joining the ERIC. The policy is consistent with relevant articles of the European Spallation Source ERIC Statutes (see Figure 3 for details).

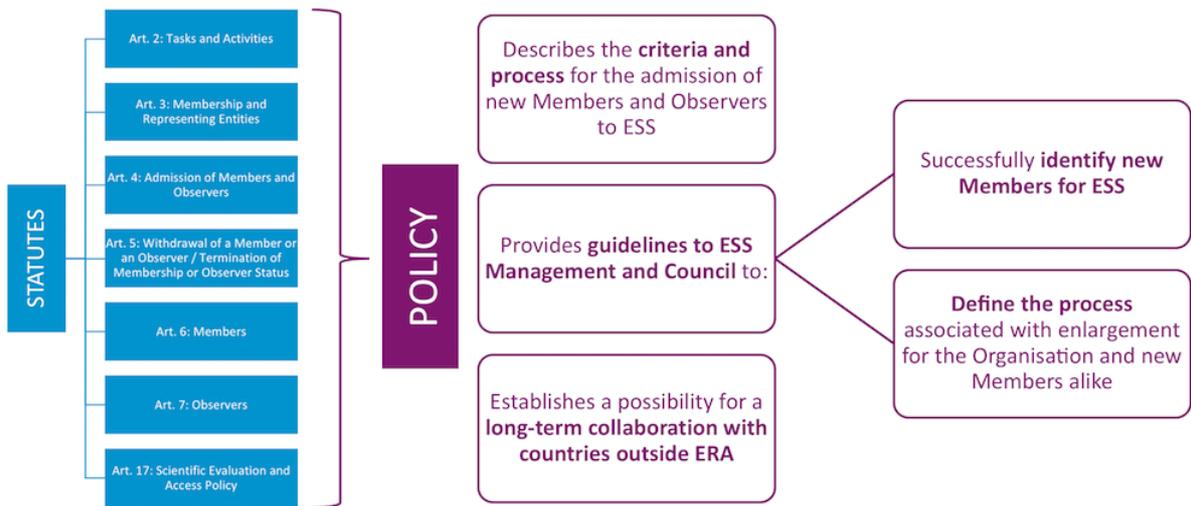


Figure 3: New Members Policy and relevant articles of the Statutes

Participation in the meetings of the Group of Senior Officials (GSO) on Global Research Infrastructures between 2015-2017 encouraged ESS to seek partnerships outside Europe and anchor the Organisation as a truly global research infrastructure. The policy takes into consideration the experience ESS gained while engaging countries outside ERA such as Canada or South Africa. It recognises that such countries may have legal or other barriers to join the European Spallation Source ERIC as Members. With this in mind, the policy introduced a new collaboration category – Associates – that allows non-ERA countries to partner with ESS on member-like terms by signing an Associate Agreement. As a general rule, this category is limited to non-ERA countries. A country that has signed an Associate Agreement with ESS may join in all proceedings and may participate in the construction and operations of ESS. The signing of an Associate Agreement requires political and financial commitment just like full membership. Figure 4 below gives an overview of principles of membership in ESS and obligations of both Members and Associates.



Figure 4: Principles of membership

8 Activities by Country

During the three years of the BrightnESS project, the ESS has been raising awareness and organising networking activities to create opportunities for new partner involvement, funding and collaboration. This chapter summarises the contacts established and activities carried out in 17 different countries in and outside Europe.

8.1 Founding Observers Turned into Founding Members

With the help of BrightnESS activities, ESS enlarged its member base by two new Founding Members. The United Kingdom and Spain, who were Founding Observers at the beginning of the project in September 2015, changed their status in 2016 and 2018 respectively. The story of each of the two countries is presented below.

8.1.1 United Kingdom

The transition of the United Kingdom from a Founding Observer to a Founding Member of the European Spallation Source ERIC was a major achievement. The country was the first Founding Observer to upgrade its status after ESS had become an ERIC, and served as a good example for other Founding Observers to pursue full membership. The decision was made at the 6th meeting of the Council held on 9-10 June 2016 in Malmö, Sweden, and raised the number of Founding Members of European Spallation Source ERIC to twelve. Shortly after the Council meeting, the decision was also approved by the European Commission. When the United Kingdom joined ESS as a Founding Observer, it was clear that the intention of the country was to move to a full membership as soon the national decision-making process is finalised. As one of the largest communities in Europe (see figure 2 for details), the British neutron users will benefit from their country's membership in ESS. The United Kingdom is an important Member that will bring invaluable technical and scientific experience and expertise. Strong collaboration between the UK's well-established user community and the growing ESS user community is anticipated to strengthen knowledge in particular within scientific instrumentation and experimentation with neutrons. The cooperation extends into technological development of many ESS source sub-systems and components.

8.1.2 Spain

Spain became a full member of the European Spallation Source ERIC in April 2017, transitioning from a Founding Observer to a Founding Member. The decision was made by the Council after a written voting procedure, confirming Spain as the 13th Founding Member. This allows Spain to participate in the governance and to directly contribute to the financing of ESS. As a Founding Observer, Spain has always had the interest to upgrade to full membership. The transition was closely linked to domestic negotiations as the participation of Spain in ESS is financed partly by the national government and partly by the Basque County. As soon as the two sides reached an agreement, Spain proceeded with its transition to a Founding Member. The country has a long history of collaboration with ESS, and is an important partner in the construction of the facility. ESS-Bilbao leads the development of



Picture 1: Journalists from Spanish media outlets at the ESS construction site, June 2017

major ESS technical deliverables including the Target Wheel System. The target wheel is of fundamental importance for the functioning of the future facility as it is essentially the heart of ESS. The relations between ESS and Spain had been affected by the domestic political situation, which included a 10-month impasse at the beginning of BrightnESS when Spain was without government. As a result, BrightnESS focused on public affairs activities targeting stakeholders in Spain with the aim to support the national decision-making process regarding membership in ESS. Visits to ESS for journalists and reporters from well-known Spanish media outlets were organised in June 2017 and July 2018 respectively. Stories about ESS and Spain’s involvement in one of the largest science and technology infrastructure projects being built in Europe helped to promote the benefits of membership among decision-makers and raised awareness and publicity for ESS and Spanish engineers and scientists among the general public.

8.2 Observers

The status of an Observer is transitional and intended to allow candidate countries to join Council meetings and have access to ESS for the purpose of increasing understanding of the Organisation. This increased understanding is meant to enable candidate countries to have the necessary information to decide when and how to join ESS. Observer status does not require a financial commitment and Observers do not have the right to vote. Both Belgium and the Netherlands have the status of an Observer at the end of BrightnESS in August 2018 and have informed ESS about their intention to prolong their Observer status. Below is an overview of activities carried out in both countries.

8.2.1 Belgium

Belgium linked its membership in European Spallation Source ERIC to Sweden’s participation in the MYRRHA project (Multipurpose Hybrid Research Reactor for High-tech Applications) in Belgium. For this reason, activities organized with the support of BrightnESS focused mainly on creating opportunities for the involved parties to discuss future collaboration between the two projects. A project symposium attended by representatives of the Belgian and Swedish governments, and research projects in the two countries was organised in Stockholm in May 2016 on the initiative of the Belgian Ambassador to Sweden, H.E. Francine Chainaye. The restart celebration of the BR2 reactor in Mol, Belgium in October 2016 allowed the ESS staff to engage with stakeholders in Belgium, including representatives of the MYRRHA



Picture 2: ESS Science Seminar in Brussels, September 2017

project and the Board of the Belgian Nuclear Research Centre (SCK•CEN). SCK•CEN visited ESS earlier during the year, in March 2016, to identify synergies and work towards a Belgian membership in ESS. In addition, a tripartite meeting between ESS, the MYRRHA project and the Oskarshamn Task Force took place in Mol, Belgium in January 2017. Organised in close collaboration with the Belgian Federal Science Policy Office (BELSPO) and the Belgian Nuclear Research Centre (SCK-CEN), the ESS Science Seminar in Brussels on 14 September 2017 attracted more than 35 scientists, academics, researchers, and policy makers, who engaged in vivid dialogue with the ESS delegation. The seminar comprised a full-day program hosted at the historical building of the Palace of Academies. The event aimed to strengthen dialogue between ESS and Belgian researchers. Speakers from Belgian institutes and universities presented results of their latest research and the expertise of the community in these

particular areas. Their talks were complemented by presentations from instrument, neutron beam and shielding scientists at ESS, who familiarised the audience with future research possibilities unveiled by the novel ESS instrumentation. The event demonstrated that Belgian scientists have conducted excellent research and have strong competence in the scientific topics covered by ESS. To follow up on the momentum of the successful ESS Science Seminar in Brussels, the Swedish State Secretary Karin Röding sent a letter to her Belgian counterpart Zuhail Demir. The letter explained that the international character of ESS as well as the timeframe set for the construction of the facility make it difficult to directly link Belgian membership in ESS with Swedish participation in MYRRHA.

8.2.2 The Netherlands

In December 2015, a consortium of Dutch universities together with ESS prepared and submitted an application to the Dutch National Roadmap for Large-Scale Research Facilities. Networking activities with Dutch stakeholders culminated during the evaluation process and in November 2016 the Chairman of Committee, Hans van Duijn, visited ESS as the Committee was in the final stage of preparing the new Roadmap. Shortly before his visit, Delft University of Technology hosted Partners from the Netherlands to identify potential in-kind contributions to ESS, and ESS hosted a visit of a Dutch delegation in Lund, including a representative from the Dutch Ministry of Education, Culture and Science. The Dutch Permanent Committee for Large-Scale Scientific Infrastructures announced in December 2016 that ESS together with other 32 scientific facilities had been included on the Roadmap. Following the decision, in June 2017, a group of Dutch universities led by the Delft University of Technology submitted an application to the Netherlands Organisation for Scientific Research (NWO) to raise funds for Dutch membership in ESS. Due to the high number of eligible research infrastructures and the limited amount of funding, the Dutch authorities expect a substantial co-funding by the applying organisations. The partners in Netherlands are not ready to take over the commitment. The Dutch scientific community continues to raise awareness among decision makers in the country about the benefits of full membership in ESS and actively looks for opportunities to raise financial support for their cause.



Picture 3: Netherlands Organisation for Scientific Research (NWO) in a meeting at ESS, December 2016

Due to the high number of eligible research infrastructures and the limited amount of funding, the Dutch authorities expect a substantial co-funding by the applying organisations. The partners in Netherlands are not ready to take over the commitment. The Dutch scientific community continues to raise awareness among decision makers in the country about the benefits of full membership in ESS and actively looks for opportunities to raise financial support for their cause.

8.3 MoU Countries

Since 2009 onwards, several countries have signed a Memorandum of Understanding with ESS. The countries which have signed an MoU and are currently neither Observers nor Members include Iceland, Latvia, and Lithuania.

8.3.1 Iceland

A Joint Ministerial Workshop on Roadmap for Research Infrastructures, ESS, and Nordic Collaboration on Neutron Research was organized in Reykjavik in November 2014 between the Icelandic Ministry of Education, Science and Culture, and the Danish Agency for Science, Technology and Innovation. No further interactions with Icelandic stakeholders have taken place since then.

8.3.2 Latvia

Activities carried out within the framework of BrightnESS have helped ESS to strengthen dialogue with the scientific community in Latvia and establish high-level contacts and good working relations with representatives of the Ministry of Education and Science (IZM). In December 2015, ESS hosted a scientific delegation accompanied by IZM to explore possibilities for in-kind collaboration and ways of strengthening the Latvian neutron user community. A major outcome of the meeting the decision to organise an ESS Partner Day in Riga. The event took place in June 2016 and attracted more than 40 participants. Later that year, in November 2016, an IZM representative participated as a guest in the meeting of the ESS Administration & Finance Committee (AFC) in Lund. As an Advisory Committee to the European Spallation Source ERIC Council, AFC oversees all major administrative and financial



Picture 4: ESS Science Workshop in Riga, May 2017

functions of the organisation and gives advice and recommendations for decisions to the Council. Alongside the AFC meeting, a delegation of Latvian scientists held bilateral meetings with the ESS Science Directorate and the In-Kind Group. Later in January 2017, a delegation from IMZ and the Institute of Solid State Physics of the University of Latvia (ISSPUL) took part in a study visit to Institut Laue-Langevin (ILL) and European Synchrotron Research Facility (ESRF) to learn about scientific possibilities in neutron and X-ray research, and the variety of aspects of international collaboration related to large-scale facilities. During the visit, they had the opportunity to meet ESS representative and discuss neutron research in science fields, which are of interest to Latvia. The last major activity related to Latvia was the ESS Science Workshop held in Riga on 23 May 2017. The event was organized in collaboration with ISSPUL and IZM and brought together approximately 30 Latvian researchers from various scientific fields. The workshop allowed the local neutron user community to meet the Scientific Division of ESS and discuss in person the new opportunities that ESS will enable as the most powerful neutron source. The program focused on life science, energy, engineering and nano-scaled materials, all of which are of special interest to Latvia. Latvian scientists from a number of institutions gave detailed talks about their most recent research activities and measurements carried out with the help of neutron techniques. The results they presented demonstrate that the community is very active, has strong scientific competence, and strives to build capacity among students especially. The level of activity in the field of neutron science in Latvia is an excellent starting point for stronger collaboration with ESS. The national decision-making process about Latvia's involvement in ESS is on-going. The European Spallation Source competes with CERN for limited research funding.

8.3.3 Lithuania

The collaboration between ESS and Lithuania was established through an EU-funded project at the Lund University. Shortly before the BrightnESS project started, ESS hosted a delegation from Lithuania led by the Minister of Education and Science. The discussions during the meeting confirmed the interest of Lithuania in joining the ESS partnership. However, domestic political developments that followed slowed the process down. After the new Minister of Education and Science was appointed in October 2016, ESS in collaboration with ESS Host Country Denmark started to re-establish its contacts in Lithuania. A representative from the Danish Ministry of Higher Education and Science participated in an Interreg-funded workshop about researcher's mobility in the Baltic Sea Region held in Vilnius in February 2017 and informed the audience about future research possibilities at ESS. Later

in May 2017, the Lithuanian government made a decision not to pursue membership in ESS because financial funds for the foreseen contribution to the construction of the facility were not secured. The Lithuanian Ministry of Education and Science communicated this decision in a letter addressed to the Danish Chief Negotiator for ESS.

8.4 ERA

There are 16 countries in the European Research Area, which are not MoU, Observer, or Member countries of ESS: Austria, Bulgaria, Croatia, Cyprus, Finland, Greece, Ireland, Luxembourg, Malta, Portugal, Romania, Slovakia, Slovenia, Montenegro, Serbia, and Turkey. Out of them, Portugal has the highest number of PIs (see figure 2), so it was prioritised for further interactions. While Turkey has a limited number of PIs who conduct research at neutron sources in Europe (see figure 2), the country expressed interested in establishing closer ties with ESS and discussing opportunities for involvement. The section below details interactions between ESS and Portugal and Turkey carried out during the duration of BrightnESS.

8.4.1 Portugal

For the first time an ESS Partner Day took place in Lisbon, Portugal on 11 November 2015 to explore collaboration opportunities with Portuguese institutes and industry. The event was hosted in collaboration with the Instituto Superior Técnico (IST) and the Fundação para a Ciência e a Tecnologia and ESS, and brought together approximately 35 participants. ESS presented details of the Machine including the Target and the Accelerator, in addition to the Science at ESS, the Instruments and the opportunities for future users. These presentations were complemented by presentations from the Portuguese community including the Portuguese expertise in Accelerator areas such as instrumentation for Accelerator experiments, quality control in large research projects and high availability control and data acquisition systems for large-scale experiments, in addition to radiation protection. As a follow-up on the successful ESS Partner Day, an IST representative participated as a guest at the ESS Industrial Liaison Office (ILO) meeting in March 2016, and ESS hosted a delegation from Oeste CIM in Lund in May 2016. The Portuguese Research Reactor (RPI) operated by IST closed down in 2017. This event might encourage future discussions about collaboration opportunities between ESS and the national scientific community of Portugal.



Picture 5: ESS Partner Day in Lisbon, November 2015

8.4.2 Turkey

The fragile political situation in Turkey has influenced the progress in relations with ESS. The first ESS Partner and Industry Day in Turkey was held in Ankara in October 2015 and attracted



Picture 6: ESS Partner and Industry Day in Ankara, October 2015

approximately 60 participants from academia, institutes and industry alike. Early in 2016, the Scientific and Technological Research Council of Turkey (TÜBİTAK) prepared application documents for ESS, which are currently pending approval by relevant decision making bodies in the country. The Turkish ILO for CERN participated in the ESS ILO meetings in March and September 2016 as a guest. During his visit in March, the ILO was accompanied by representatives of TOBB University of Economics and Technology based in Ankara. The delegation discussion collaboration opportunities between Turkey and ESS. The coup attempt in July 2016 and developments that unfolded afterwards had slowed all relevant decisions.

8.5 Global

As the world’s most powerful linear neutron source, ESS will serve a wide international community. The Organisation currently has only Member and Observer Countries from Europe, but it actively pursues contacts on the global scale. This section describes interactions of ESS with countries in North and South America, Australia, Africa, and Asia.

8.5.1 Australia

The European Spallation Source has had regular contact with the Australian government through the meetings of the GSO group. The Australian Nuclear Science and Technology Organisation (ANSTO) has a number of agreements with international partners including ILL, Helmholtz-Zentrum Berlin (HZB), European Organisation for Nuclear Research (CERN), Japan Proton Accelerator Research Complex (J-PARC), Paul Scherrer Institute (PSI) etc. The agreements aim to facilitate staff exchange, cooperative projects, and access for Australian researchers to large-scale facilities, among other.

8.5.2 Brazil

The ESS Director for Science, Andreas Schreyer, discussed new possibilities for scientific cooperation between ESS and Brazil during the “Brazil-Sweden Excellence Seminar” organized in Brasilia on 16-20 May 2016. The important role of the seminar was underlined by the participation of a high-level delegation from one of the ESS host countries – Sweden, which comprised of the Swedish Minister of Higher Education and Research, Helene Hellmark Knutsson, representatives of funding agencies and leading figures from the Swedish academic and scientific communities. The seminar unveiled the strong interest of Brazilian scientists in establishing close ties with neutron research centres in Europe. In addition, ESS hosted José Roque da Silva, Director of the Brazilian Synchrotron Light Laboratory (LNLS), on its premises in Lund on 20 June 2016 and further discussed capacity building, including exchange of scientists, between Brazil and ESS.



Picture 7: ESS participates in the Brazil-Sweden Excellence Seminar in Brasilia, May 2016

8.5.3 Canada

The Canadian user neutron user community is facing a crossroad as their primary national source closed down in March 2018. The community is now in a position to evaluate future options. Engagement with the Canadian neutron science community began when an ESS delegation attended the 2016 annual meeting of Canadian Institute for Neutron Scattering (CINS), the pan-Canadian, bottom-up organisation of neutron scientists. During the meeting, the ESS Management briefed the

Canadian neutron users about ESS and discussed concrete collaboration opportunities. While in Ottawa, ESS also held informational meetings with representatives of Innovation, Science and Economic Development Canada, and Canada Foundation for Innovation (CFI). In December 2016, ESS hosted the Canadian Ambassador to Sweden to discuss future science at ESS. A high-level roundtable discussion on Canadian and Swedish collaboration across science, industry and research infrastructures followed in February 2017. The discussion was held as part of a state visit by the Governor General of Canada, included the King of Sweden and the science and research ministers of both Sweden and Canada, and highlighted the broad impact that research infrastructures have on the two nations. The efforts culminated in November 2017 when a



Picture 8: Canadian scientific delegation visits ESS, November 2017

high-level delegation of seven Canadian neutron scientists, joined by Canada’s ambassador to Sweden, travelled to Lund and Copenhagen for three days of meetings and exchanges concerning opportunities for cooperation between ESS and Canada. The scientists met with representatives of the Swedish and Danish ministries for science and research as well as the Swedish Research Council; neutron scientists from ESS partner institutes in Sweden and Denmark; a broad group of ESS staff scientists and management; the chair of the ESS Scientific Advisory Committee; and both the ESS Council chair and vice-chair. Dr. John Root, Director of the Canadian Neutron Beam Centre and Executive Director of the Sylvia Fedoruk Centre for Nuclear Innovation, summarized the visit in the following way: “Before coming to Lund, we knew only about our urgent need to establish a new framework for stewardship of Canada’s program for materials research with neutron beams. In Lund, we met a community who opened several doors for us to refine our own vision for this stewardship. We can imagine participating in this visionary international endeavour, both now, in building it, and in the future, through access to the world-class facility.”

8.5.4 China

The ESS hosted Prof. Guoqing Xiao and Prof. Lei Yang of the Chinese Academy of Sciences in December 2015. Following their visit, ESS Technical Director Roland Garoby travelled to China and signed Memoranda of Understanding with two institutes at the Chinese Academy of Sciences, i.e. the Institute of High Energy Physics (IHEP), and the Institute of Modern Physics (IMP). Within the framework of these agreements, China and ESS intend to strengthen collaboration in research and development, and increase the mobility of researchers. The seminar in Lund in May 2016, during which Mr. Guoping Wang of the China Spallation Neutron Source (CSNS) presented status-update on the CSNS project design and instruments, attracted great interest from the ESS Accelerator Division.



Picture 9: MoU signing between IMP of the Chinese Academy of Sciences and ESS, May 2016

8.5.5 India

In November 2016, ESS participated in the 6th Conference on Neutron Scattering (CNS2016) at the Bhabha Atomic Research Centre (BARC) in Mumbai, which brought together more than 100 international and Indian scientists. The audience had the possibility to learn about future science at ESS. Collaboration opportunities between India and ESS were further explored during a visit of the Swedish Minister of Higher Education and Research to New Delhi in January 2017. In May 2018, ESS hosted a delegation from India at the construction site in Lund. The delegation included representatives from the Ministry for Science and Technology, Embassy of India in Stockholm. They had the opportunity to learn more about scientific benefits of ESS and user access to the facility.



Picture 10: Delegation from India on the Horizon deck at ESS, May 2018

8.5.6 Japan

The ESS and Japan's world-leading spallation source, J-PARC, have been working together since 2012. The collaboration was formally renewed in July 2017 with the signing of a Memorandum of Collaboration (MoC). Cooperation under the Arrangement also includes a range of technical areas but also exchange of staff, exchange of materials, instruments, components and software, and the exchange of information and data. Furthermore, the cooperation also covers collaboration on activities such as workshops and seminars as well as other meetings. The two facilities organised a bilateral workshop in Tokai in June 2016 to strengthen cooperation between Japanese scientists and ESS. In January the following year, ESS hosted Naohito Saito, the Director of J-PARC to plan another joint workshop, which took place in January 2018 at ESS. Participants exchanged knowledge across the technologies of the accelerator, target, and neutron instruments as well as the safe operation of the respective facilities. Both organisations also benefit from a broader Swedish-Japanese project MIRAI that aims to connect universities and academics from both countries through research, education and innovation. The project also strives to attract junior researchers who are in the early stage of their careers in order to maximise the future use of large-scale research facilities such as ESS and J-PARC in both countries.



Picture 11: Toshiji Kanaya, Director of the J-PARC Materials and Life Science Division during a visit to ESS, January 2018

8.5.7 Russia

The European Spallation Source has established contacts with research institutes in Russia through the Horizon 2020 framework and the EU-funded project CREMLIN (Russian and European Measures for Large-Scale Research Infrastructures) that aims to enhance scientific cooperation and the establishment of enduring networks between European and Russian research infrastructures. Within

the framework of the project, in June 2016 ESS hosted a workshop on internationalisation, which is a key strategic issue in the process of building, operating and scientifically exploiting large-scale research infrastructures. The topics explored during the workshop were of high relevance for the overall objective of the GSO and ESS. The European Spallation Source is also actively involved a German-Swedish-Russian initiative to promote materials science among young scientists through annual RACIRI Summer Schools. The summer school of 2017 was hosted in Ronneby and Lund in Sweden. In addition, ESS together with the CREMLIN project Partners organised an Innovation Workshop in fall 2017.



Picture 12: CREMLIN project meeting held at ESS, October 2017

8.5.8 South Africa

Engagement between ESS and South Africa has progressed steadily since 2015, when ESS began working through GSO to guide its expansion beyond Europe. The Organisation reached out to the national scientific community during the 62nd Annual Conference of the South African Institute of Physics organized in Stellenbosch in July 2017, when the ESS Director for Science Andreas Schreyer gave a plenary talk about ESS. The talk attracted around 250 participants and initiated good discussions with the audience. In parallel with the conference, a meeting with South African stakeholders was organized to explore collaboration opportunities with ESS. The discussions between ESS and South Africa culminated during a visit of a high-level scientific delegation in July 2018. More than two dozen members of ESS staff, management and governance participated in the meetings, which covered a broad range of scientific, technical and organisational activities both at ESS and at South Africa's research infrastructures. The exchange explored areas of mutual interest, including materials science, technology development and Big Data. The outcomes of the visit will be used to develop an Expression of Interest/Letter of Intent with ESS, which will be valid for 1-2 years and which will formalize South African engagement with ESS. Both sides agreed to touch base after the summer in order to advance discussions further.



Picture 13: Scientific delegation from South Africa visits ESS, July 2017

9 Conclusion

BrightnESS played an instrumental role in establishing and strengthening trustful relations with potential future ESS Member States, Observers and Associates. Thanks to the enlargement activities carried out over the 3-year project period, ESS enlarged its member base by two new countries and made substantial progress in relations with around a dozen of other from Europe and beyond. More specifically, the United Kingdom and Spain became Founding Members in 2016 and 2018 respectively. Belgium and the Netherlands both submitted a request to prolong their observer statuses while the



discussions with all involved stakeholders about membership in ESS continue at their national fronts. The Organisation will continue to benefit from the solid foundation laid down during BrightnESS for many years to come. The long-term sustainability of the actions undertaken during the lifetime of the project will also be ensured by the fact that ESS now has a New Members Policy, which will provide structured guidance and support future discussions with potential partners.

10 Annex: New Members Policy

(Document starts on the next page)

New Members Policy

1 Terms and Definitions

- 1.1 "Council" refers to the Council of the European Spallation Source ERIC.
- 1.2 "Country" refers both to a member state of the EU and to any other country inside or outside Europe.
- 1.3 "European Research Area (ERA)" refers to the member states of the European Union and those non-EU countries that are associated to the EU framework programmes (such as Norway, Switzerland, etc.)
- 1.4 "Organisation" refers to the European Spallation Source ERIC.
- 1.5 "Statutes" refer to the Statutes of the European Spallation Source ERIC.
- 1.6 "Member" refers to full Members of the European Spallation Source ERIC.
- 1.7 "Associate" refers to countries or intergovernmental organisations having signed an Associate Agreement with the European Spallation Source ERIC.

2 Purpose of the New Members Policy

- 2.1 The New Members Policy describes the criteria and process for the admission of new Members and Observers to ESS, consistent with the Statutes, esp. "Article 2: Tasks and Activities", "Article 3: Membership and Representing Entities", "Article 4: Admission of Members and Observers", "Article 5: Withdrawal of a Member or an Observer / Termination of Membership or Observer Status", "Article 6: Members", and "Article 7: Observers, and Article 17: Scientific Evaluation and Access Policy".
- 2.2 The New Members Policy also establishes a possibility for a long-term collaboration with countries outside the European Research Area (ERA) and with intergovernmental organisations, which may have legal or other barriers to joining the European Research Infrastructure Consortium (ERIC).
- 2.3 Moreover, the Policy provides guidelines to ESS Management and Council to successfully identify new Members for ESS, and to define the process associated with enlargement for the Organisation and new Members alike.

3 Objectives of Enlargement

- 3.1 In order to anchor ESS as a truly international research facility, which is built and operated by the broadest possible scientific community, ESS engages in discussions with countries beyond the current membership base. Membership in ESS provides added value to Member countries and ESS alike. It contributes to the exchange of scientific know-how, supports the enlargement of user communities on national level, and contributes to capacity building in countries with emerging users. The scientific and technical excellence that new Members bring adds capability to the facility by enabling access to a broader base of human and

technical resources. The short-term needs for construction and the medium-term needs for financing operations, combined with the long-term goal of maximising the scientific excellence and value of the ESS facility creates mutual opportunities for ESS and potential new Members.

- 3.2 Council discussed and took note in 2016 and in 2017 of the following objectives presented by management for enlarging the ESS membership base:
- Consider “quality” that new Members bring as an important criterion, especially the potential to contribute scientifically;
 - Maximise contributions to construction;
 - Maximise contributions to operations from new partners;
 - Increase membership not only for material support, but also for political support;
 - Seek partners outside of Europe.

4 Eligibility

- 4.1 In accordance with Article 3.1 of the Statutes, any member state of the European Union, any country associated to the EU framework programmes, any other country, or intergovernmental organisation may become a Member or Observer of the European Spallation Source ERIC.

5 Collaboration Categories

- 5.1 Countries and intergovernmental organisations interested in establishing formal collaboration with the Organisation shall seek membership in the European Spallation Source ERIC. Members shall have the right to attend and vote in meetings of Council as defined by Article 6.1(b) of Statutes. Members shall also have effective access to ESS for their scientific community under the conditions specified in “Article 17: Scientific Evaluation and Access Policy” of Statutes. Rights and obligations of Members are specified in “Article 6: Members” of Statutes.
- 5.2 Where countries outside the ERA and intergovernmental organisations may have legal or other barriers to join the European Spallation Source ERIC as Members, an Associate Agreement shall be offered as a suitable alternative. The signing of an Associate Agreement with ESS requires political and financial commitment and, as a general rule, should be limited to non-ERA countries. A country that has signed an Associate Agreement with ESS shall join in all proceedings and participate in the construction and operations of ESS as defined in the Associate Agreement that is approved by Council.
- 5.3 Associates shall have effective access to ESS for their scientific community under conditions as defined in the Associate Agreement that is approved by Council.
- 5.4 Associates shall have privileges and obligations as defined in the Associate Agreement, consistent with the ESS Statutes.

- 5.5 Prior to joining as a Member, a candidate country or intergovernmental organisation may first join as an Observer. The Observer status is regulated in the ESS Statutes, Art. 3 to 5 and 7. The status of an Observer is time-limited, transitional and intended to allow candidate countries to join Council meetings and have access to ESS for the purpose of increasing understanding of the Organisation. This increased understanding is meant to enable candidate countries to have the necessary information to decide when and how to join ESS. Candidate countries applying for Observer status shall indicate future level of commitment and a clear timeframe for making a decision to join. Observer status does not require financial commitment. As per Article 7.1(a) of Statutes, Observers do not have the right to vote in Council meetings.
- 5.6 Interested countries and named representatives of other entities may be invited to a limited number of Council meetings as guests on an ad-hoc basis. Council shall decide on the admission of new guests.

6 Principles of Membership

- 6.1 Collaboration between the Organisation and Members, is guided by the Statutes. Collaboration between the Organisation and Associates will be guided by the respective Associate Agreement according to Article 14 of Statutes.
- 6.2 Members and Associates shall support the Organisation in achieving its mission and vision, and contribute to the tasks and activities of the Organisation defined in Article 2 of Statutes, including making contributions to top-level research, technological development, innovation, and societal challenges.
- 6.3 Members shall have rights and fulfil obligations referred in “Article 6: Members” of Statutes.
- 6.4 New Members and Associates shall make a special contribution towards the capital expenditure of the Organisation already incurred and defined in Article 4.1(f) of Statutes as defined in the Associate Agreement.
- 6.5 Members and Associates shall make ordinary contributions to future capital investment, current operating costs, and decommissioning costs as defined in Article 4.1(f) of Statutes. New Members and Associates are normally expected to make a contribution of at least 1% of the adjusted construction budget of ESS (1843M€₂₀₁₃).

7 Admission Procedure

- 7.1 ESS management is responsible for conducting exploratory discussions with entities interested in collaborating with ESS in accordance with the New Members Policy.
- 7.2 Countries and intergovernmental organisations seeking to establish a formal collaboration with ESS shall express their interest in writing to the ESS Council Chair in the form of a letter from an appropriately authorised person.

- 7.3 Negotiations between the Organisation and an interested entity shall formally start after the Chair has notified Council and after Council has set up a dedicated negotiating delegation and equipped the delegation with a formal negotiating mandate. The Administrative and Finance Committee, and Chairs Committee shall be duly informed about the progress of negotiations and provide feedback when necessary. At the end of the negotiations process, the sides shall agree on a draft agreement and present it to Council.
- 7.4 The Administrative and Finance Committee, and Chairs Committee shall assess the draft agreement outlining the details of collaboration with future Members and Associates, and make a recommendation to Council.
- 7.5 The admission of new Members and Observers shall require unanimous approval of Council as defined in Article 4.1(a) and Article 9.9(d) of Statutes.
- 7.6 The signing of an Associate Agreement between the Organisation shall be approved by unanimous vote, following the same procedure as for the admission of new Members.
- 7.7 The procedure for admission of new Members and Observers is set out in Annex I titled “Memo: Procedure for the Accession of New Members”.

8 Withdrawal

- 8.1 Withdrawal from membership and Observer status shall be guided by Article 5 of Statutes: “Withdrawal of a Member or an Observer / Termination of Membership or Observer Status”, and the Associate Agreement in the case of Associates.

9 Review and History

- 9.1 This Policy shall be reviewed by Council every five years; earliest review is possible two years after its entry into force.

10 References

- [1] *Statutes of the European Spallation Source ERIC*
- [2] *Vision and Mission for the European Spallation Source ERIC*

Annex

Memo

Procedure for the Accession of New Members

BACKGROUND

This memo sets out the procedure to be followed for the accession of new Members of the Organisation.

PROCEDURE

In accordance with Article 4 of the Statutes, the procedure for the accession of new Members of the Organisation shall include the following steps:

1. The new member should submit a written application addressed to the Chair of the Council [See proposed template attached as Schedule 1]. This written application must include:
 - i. A description of how the applicant will contribute to the tasks and activities within the Organisation¹ and;
 - ii. How the applicant will fulfil the obligations under the Statutes, in particular in respect of payment of contributions and appointment of a representing entity.²
2. The Chair of the Council notifies the Council in writing.
3. While explorative discussions with interested countries or institutions belong to the management responsibilities, accession negotiations are placed under the Council guidance. Therefore, the Council appoints a negotiating delegation, which receives a formal negotiating mandate.
4. The conditions for accession should be subject to an agreement between the applicant and the Organisation, negotiated on the side of the Organisation by the appointed Council's negotiating delegation.

¹ These are further described in Article 2 of the Statutes.

² See Article 6 of the Statutes for further details.

5. The agreement has to be approved by the Council before it is signed by the Organisation [template agreement attached as Schedule 2].³
6. Council to approve the admission of the applicant as a Member by a unanimous vote.
7. Provided the steps above are completed prior to April 2018, the applicant will be able to become a Member of the ERIC under the same conditions as the Founding Members.

DOCUMENTS TO BE SUBMITTED TO COUNCIL

1. Resolution on new membership.
2. Consolidated version of the Statutes, with amendments to Annexes 6 and 7.
3. Membership agreement between the applicant and the Organisation (if applicable).
4. A 'no objection' confirmation from the European Commission.

STEPS TO BE TAKEN FOLLOWING APPROVAL

1. Issue letter of confirmation to the relevant ministry of the new member, signed by the Chair of Council.
2. Publish consolidated version of the Statutes on the Organisation's website.
3. Issue relevant amendments to the allocation of voting rights.

³ The Chair may decide to waive the requirement for an agreement in writing if the conditions for membership have been agreed separately.

[Schedule 1: Letter of application template]

[insert date]

Council Chairperson
[include her / his name]
European Spallation Source ERIC
[include her / his address]

Dear Chairperson,

The undersigned wishes to formally express the interest of [country] in participating as a [Member] / [Observer] in the Council of the European Spallation Source ERIC (“ESS ERIC”), in accordance with Article [4(1)] or [4(2)] of the ESS ERIC Statutes.

[Include a brief description of the relevant scientific community and the expertise and experience brought by the signatories of this letter explaining how they will contribute to the ESS ERIC and its activities described in Articles 2 of the Statutes]

[For a Membership application: Include a brief description of your contribution in accordance with Article 6 of the Statutes]

Our proposed representing entity / entities is / are: [name(s)].

Our proposed delegates to the Council is / are: [name(s)].

Considering the above-mentioned, we believe that [country] will bring additional technical, scientific and technological expertise to advance our common goals at the ESS ERIC, and we formally request the status of [a Member] [an Observer].

For the Government of [country]

.....
Name

.....
Title

Feedback provided by AFC

- Take out reference to definition of “Associate” (Art. 1.7) because the definition is vague.
 - Comment from Management: Ambiguity on purpose. Definition taken out.
- “Science” and “international scientific collaboration” should appear more prominently in the list in Art. 3.2
 - Comment from Management: Moved up the respective criterion.
- Art. 3.2, “maximize contributions to operations from new partners”
 - Comment from Management: Changed to “from”.
- Art. 5 has too much ambiguity
 - Comment from Management: Changed from “may” to “shall” (several instances)
- Art. 5.2, “should be limited to non-ERA countries”: Proposal to change to “non-EU countries”.
 - Comment from Management: Not taken into account.
- Financial commitments from Observers: Could help Council to make informed decision.
 - Comment from Management: Added: “Candidate countries applying for Observer status shall indicate future level of commitment and a clear timeframe for making a decision to join.” If a firm financial commitment is preferred, Council can consider adding this to the Policy at the meeting.
- Proposal to ask not for normally at least 1% of construction but for at least 1% of construction plus initial operations.
 - Comment from Management: Not taken into account.
- Proposal to add an Art. 7.1 “ESS management is responsible for conducting exploratory discussions with entities interested in collaborating with ESS in accordance with the New Members Policy.”
 - Comment from Management: Added.
- Proposal to change art 7.2 (now 7.3). Too much ambiguity.
 - Comment from Management: New wording added. Ambiguity taken out.
- Proposal to change Art. 7.3 (now 7.4). Too much ambiguity.
 - Comment from Management: Ambiguity taken out.
- Proposal to change Art. 7.5 (now 7.6) to unanimous vote.
 - Comment from Management: Unanimous vote added.
- Proposal to change the procedure for the Accession of New Members.
 - Comment from Management: Taken into account.
- Proposal to change the letter of application (template) by deleting reference to Council delegates.
 - Comment from Management: Not taken into account.

Also, the term “intergovernmental organisation” was added in several instances.