



Norwegian Ministry
of Education and Research

Strategy

Strategy for Norway's participation in Horizon Europe and the European Research Area





Contents

1.	Preface	4
2.	Introduction	6
3.	The objectives of Norway's participation in European cooperation on research and innovation	8
4.	Focus areas	9
4.1	Mobilisation in order to increase participation in Horizon Europe	10
4.1.1	The national support system	10
4.1.2	Arenas for competitive research funding that support participation	11
4.1.3	Financial incentive schemes	12
4.1.4	Interaction between sectors	12
4.1.5	Expectations of the actors	13
4.2	Interaction between national and European policy instruments and programmes	14
4.2.1	National and European co-funding	14
4.2.2	Synergies between Horizon Europe and other EU programmes	14
4.2.3	Links to the EEA and Norway Grants for research and innovation	16
4.3	European and global cooperation	18
4.3.1	Good interaction between European and bilateral cooperation	18
4.3.2	Collaboration on policy development for global cooperation	18
4.4	Development of policy and framework conditions	20
4.5	Positioning and contribution	21
4.5.1	Early positions and good exploitation of different participation channels	21
4.5.2	Rights through the EEA Agreement	22
4.6	Dissemination and use of results	24
5.	Monitoring and evaluation of Norwegian participation	26
6.	Appendix I: The European Research Area (ERA) and Horizon Europe	28
6.1	The European Research Area	28
6.2	Horizon Europe	29
6.3	Participation in Horizon 2020 and the potential for participation in Horizon Europe	31
7.	Appendix II: EU programmes in which Norway participates	34

1. Preface

Skills, research and innovation are pivotal to Norway's future, for securing Norwegian competitiveness and jobs, and for helping to solve global challenges.

Norway has skilled researchers who engage in world-leading research, but the best research and innovation environments and the most ground-breaking ideas are developed through international cooperation.

The EEA Agreement provides Norwegian environments with the opportunity to participate in the world's biggest research and innovation programme, Horizon Europe, on an equal footing with environments in the EU Member States. This opportunity gives enterprises, research environments and the public sector valuable access to networks, infrastructures, markets, capital and cutting-edge knowledge. This represents considerable added value that would not be attainable through participation in national programmes.

The results benefit Norway as a whole in the form of higher-quality research, more innovative environments, better public services and a more competitive business sector. Participation links the business sector, research and educational institutions, regions and municipalities, and non-profit organisations to Europe.

The major societal challenges are a key element in Horizon Europe. The ambition is to find solutions to challenges such as cancer, adaption to climate change, healthy oceans, climate-neutral and smart cities, as well as soil health and food. The EU is also continuing its focus on excellence and ground-breaking and curiosity-driven research initiatives.

Cooperation with the EU will also strengthen the framework conditions for Norwegian research and innovation. Participation furthermore provides an opportunity to influence European policy and to coordinate practice in areas such as researcher recruitment and career development, infrastructure and open science.

The Government has high ambitions for our participation in the European Research Area (ERA) and Horizon Europe. This strategy sets out the Government's overriding objectives and level of ambition. Norway needs strong participation to develop as a knowledge nation and strengthen our business sector. The institutions that conduct research, the agencies and the authorities must now rise to

the challenge and exploit the many opportunities presented by Horizon Europe and the ERA. It is important that we work together to achieve the objectives of the cooperation. The Government thus encourages universities, university colleges, institutes, health trusts, the business sector and the public sector to find ways to join the cooperation.



A handwritten signature in black ink that reads "Erna Solberg".

Erna Solberg
Prime Minister



A handwritten signature in black ink that reads "Henrik Asheim".

Henrik Asheim
*Minister of Research and
Higher Education*

2. Introduction

The EU is investing heavily in research and innovation, and strengthening its work on coordinating research and innovation in the European Research Area (ERA). Horizon Europe is the world's biggest open research and innovation programme. The EU wishes to be a global leader in excellent research, innovation and entrepreneurship.

Funding research and innovation is an investment in the future. The EU conducts world-leading research and has a strong business sector, but could do more to ensure that society uses the results. Europe is facing major social and economic challenges. The COVID-19 pandemic has highlighted the need for preparedness and cooperation. At the same time, the EU has set ambitious goals for making the economy more competitive, climate neutral and inclusive, for a green and digital transition, for health, and to follow up the UN's Sustainable Development Goals (SDGs). Cooperation on research and innovation will generate the knowledge and preparedness Europe needs to meet long-term challenges, handle acute crises and create a sustainable society.

Norway and the EU are close partners. The development of Norwegian research and innovation policy is closely linked to developments in the EU. The mutual economic dependency between Norway and the EU is considerable; we face many of the same challenges and we share the same vision of a sustainable society and a competitive business sector. Norway's participation in Horizon Europe and the ERA gives us access to a collaboration where we can contribute to a competitive and sustainable Europe

and promote high quality research and innovative environments, together with international partners.

Since 1994, Norway has fully participated in European cooperation on research and innovation based on the EEA Agreement. Norway's close links to this cooperation through the EEA Agreement gives us the opportunity to play a part in developing European policy in areas that we consider important, and Norwegian actors can participate in Horizon Europe on an equal footing with actors in EU Member States.

Norway plays an active part in the work on the ERA and has enjoyed considerable success in recent years in the research and innovation programme Horizon 2020. In the coming years, the Government would like Norway to take even greater advantage of the opportunities provided by European cooperation on research and innovation. The Government is therefore presenting this strategy for Norway's participation in the ERA and Horizon Europe for the period 2021–2027. Together with the Long-term Plan for Research and Higher Education, it will form a basis for strengthening Norwegian research and innovation.

The strategy is based on input from and dialogue with organisations that conduct research, agencies and subordinate agencies, the public sector, social partners and others participating or with an interest in the European cooperation. Their input indicates a great deal of support for participation. The strategy is aimed at organisations that conduct research such as universities and university colleges, institutes, health trusts, the business sector and the public sector (the actors),



the institutions that are part of the national support system for participants, such as the Research Council of Norway (the Research Council), Innovation Norway, the Norwegian Space Agency, Enova, Investinor and the Directorate for Higher Education and Skills (the support system), and the authorities.

The strategy's delimitations

Norway will participate in many EU programmes,¹ several of which will fund research and innovation activities. This strategy only refers to Horizon Europe and the synergies between Horizon Europe and the other programmes Norway participates in.²

The Government would like Norwegian actors across sectors to take advantage of the breadth of Horizon Europe and the cooperation under ERA, in line with its strategic and academic priorities. This strategy does not therefore set out academic or specific policy instrument priorities for Norwegian actors' participation, leaving this up to the individual actors.

1 Appendix II provides an overview of the EU programmes Norway participates in.

2 The Ministry of Defence has presented its own strategy on Norway's participation in the European Defence Fund (EDF).

3. The objectives of Norway's participation in European cooperation on research and innovation

The Government has four objectives for Norway's participation in European cooperation on research and innovation in the period 2021–2027.

1. Participation shall raise the quality of Norwegian research and generate more outstanding and innovative environments.
2. Participation shall increase value creation, strengthen Norway's competitiveness and capacity for innovation and contribute to transition in the private and public sector.
3. Participation shall enable us to handle major societal challenges, help us achieve the Sustainable Development Goals and contribute to the sustainable development of society.
4. Participation shall contribute to the development of research and innovation policy and to new patterns of collaboration across national borders, sectors and fields.

Norway and the EU share the same visions for developing European cooperation on research and innovation. Participation in European cooperation on research and innovation is an important element of Norway's research and innovation policy and its overall cooperation with the EU. The objectives of Norway's participation in European cooperation on research

and innovation are in line with the EU's objectives for Horizon Europe and the ERA.³

There is a link between the volume of project participation in the framework programmes and the effect of participation on society and on research and innovation. Based on assessments of the potential for participation, the Government's ambition is for Norwegian actors to receive 2.8 per cent of the competition-based funding in Horizon Europe.

The actors must have a long-term and goal-oriented perspective to succeed in the European competition, and to participate in the collaboration that best supports their own objectives. The Government encourages universities, university colleges, institutes, health trusts, the business sector and the public sector to develop their own objectives and strategies for their participation.

³ The objectives of Horizon Europe are set out in Article 3 of Regulation (EU) 2021/695 of the European Parliament and of the Council establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination (2021–2027). The objectives of the ERA are set out in the report by the European Commission 'A new ERA for Research and Innovation' (COM/2020/628 final).

4. Focus areas

The actors' efforts are vital if Norway is to achieve its objectives for participation in European cooperation on research and innovation. The authorities and agencies will take steps to enable Norway to take advantage of the opportunities the cooperation presents. The Government will emphasise the following focus areas in the period up until 2027:

- mobilisation in order to increase participation in Horizon Europe
- interaction between national and European instruments and programmes
- European and global cooperation
- development of policy and framework conditions
- positioning and contribution
- dissemination and use of results

Some of the focus areas further develop the excellent work done by Norwegian actors, agencies and authorities to ensure good Norwegian participation in the ERA and Horizon 2020 during the period 2014–2020. Other focus areas reflect the need for new or renewed efforts where developments in the European cooperation result in new requirements. The focus areas will largely cover the overall efforts needed at the national level to achieve the objectives of participation. The Government will facilitate cooperation between authorities, agencies and the actors in connection with following up the focus areas.



4.1 Mobilisation in order to increase participation in Horizon Europe



The Government wants Norway to have a high participation rate in Horizon Europe and to participate across all instruments. This will require great effort on the part of actors that have participated actively in Horizon 2020, as well as mobilisation of actors with less experience and ensuring that good national support services are in place. If we are to achieve our ambition of a 2.8 per cent share of contributions, Norwegian participation must increase by almost 30 per cent compared with Horizon 2020.⁴

4.1.1 The national support system

Norway has established a national support system that plays an important role in mobilising and supporting participation in Horizon Europe. The purpose of the support system is to spread information, increase knowledge about Horizon Europe, identify relevant applicants, provide guidance and advice to applicants and project participants, and offer financial incentive schemes. The support system will also advise the ministries.

The Research Council and Innovation Norway are the main actors in the support system, but the Directorate for Higher Education and Skills, the Norwegian Space Agency, Enova and Investinor also have co-responsibility in some areas. Their combined expertise covers the full breadth of Horizon Europe. It is important that the support system coordinates its efforts in an expedient way and that users perceive their services as seamless.

Increased national efforts, a more complex programme, new instruments and a greater focus on using knowledge and exploiting synergies between programmes mean higher demands of the support system. The focus of Horizon Europe means that

resources and work methods will have to be organised in new ways in certain areas, and that the Research Council and Innovation Norway will have to focus more on linking up different sectors and actors, and on reaching out to broader groups of participants and users.

If we are to achieve Norway's objectives, the support system must focus its efforts where mobilisation has the greatest effect, while also reaching a wide range of potential applicants. Our experience from Horizon 2020 shows that actors that have participated in previous framework programmes have a great potential to participate in the next one. It is often the actors with the greatest capacity that participate in and coordinate large collaborative projects. However, more actors should also engage with the programme. New instruments, such as EIC Accelerator, offer opportunities for new and less experienced participants from the business sector. Networks such as European Cooperation in Science and Technology (COST) also provide a unique opportunity for new actors to become involved in European cooperation on research and innovation.

The support system's cooperation with the public sector, particularly with municipalities and county authorities, should be strengthened. They are part of the extended mobilisation system, while they are also participants in projects, users of results and a link to civil society. County authorities and municipalities can play a stronger role in mobilisation at the regional level, while the social partners can help to mobilise the business sector and the public sector. The Government expects the support system to further develop its cooperation with actors from the public sector, the social partners and other relevant actors.

⁴ To increase the share of contributions from 2.49 per cent in Horizon 2020 (as of April 2021) to a level of 2.8 per cent in Horizon Europe, the Ministry of Education and Research estimates that Norway's participation must increase by around 28 per cent.



Actions

- The support system shall mobilise across the board and facilitate increased participation across Horizon Europe.
- The support system shall develop seamless services that the actors find easy to understand.
- The support system shall develop action plans for mobilising and adjusting the focus of its work as necessary.
- The Committee for Gender Balance and Diversity in Research (Kif), the Research Council and Innovation Norway shall help to increase the proportion of women among Norwegian applicants and the proportion of research and innovation projects with a gender perspective.
- Kif, the Research Council and Innovation Norway shall, together, help Norwegian participants to meet the requirement for Gender Equality Plans in Horizon Europe.

4.1.2 Arenas for competitive research funding that support participation

Both national arenas for competitive research funding and participation in the framework programme help to meet national and sector policy needs for knowledge and innovation. More stringent public spending in the coming years will require the Government to prioritise between different research objectives. For this reason, national arenas for competitive research funding should also be organised so that they are well aligned with the European arenas. National arenas for competitive research funding can mobilise leading environments in areas where Norway has particular advantages, and they can develop capacity and expertise in areas in which Norway does not currently have leading environments, and thereby also qualify more environments for participation.

The Research Council and Innovation Norway shall continue their efforts to link up national and European instruments, and, by doing so, show potential participants the opportunities that Horizon Europe presents. In particular, the Research Council and Innovation Norway shall consider new areas, areas in which Norway currently has a low participation rate and areas where there is a potential for increasing participation. Where this is natural, national instruments should be designed to reflect the European Commission's rules and requirements with a view to lowering the threshold for participation in Horizon Europe.

Actions

- The Research Council and Innovation Norway shall, when relevant, organise and further develop their national competition arenas so that they have a mobilisation and qualification effect on participation in European cooperation on research and innovation.
- The agencies shall continuously assess the need to adapt national instruments with a view to increasing participation in Horizon Europe.

4.1.3 Financial incentive schemes

The Government wishes to offer good financial incentives that support participation in Horizon Europe. Applying for funding from the framework programme requires more resources than applying for national funding. Over the course of Horizon 2020, the Government has considerably increased the level of the financial incentives to increase participation in the framework programme. The largest incentive schemes are STIM-EU and Project Establishment Support (PES). The STIM-EU scheme provides results-based funding that aims to encourage more institutes to participate in the framework programme and to contribute to covering their share of indirect costs. Institutes with coordinator responsibility that collaborate with the business and/or public sector are also rewarded. PES awards funding to applicants from enterprises, health trusts, institutes and higher education institutions in connection with project development, positioning and competence-raising to enable them to develop more and better applications.

The EU will retain the main features of the Horizon 2020 funding model in Horizon Europe. In order to support the institute sector's and Norway's overall participation, the Government wishes to continue the STIM-EU scheme, with the possibility of altering it during the course of the programme period. Given the stringent public spending constraints expected in the coming years, it will be necessary to adjust the focus of and allocations to PES. Adjustments will be made in close dialogue between the ministries, the Research Council and Innovation Norway.

Actions

- The Ministry of Education and Research, in close dialogue with the ministries, the Research Council and Innovation Norway, shall assess amendments to the financial incentive schemes during the course of the programme period 2021–2027.

4.1.4 Interaction between sectors

Horizon Europe emphasises the social and economic effects of research and innovation, and that the cooperation should generate concrete results and solutions. Calls for proposals are often based on challenges that require interdisciplinary cooperation. This means that the actors have to collaborate in new constellations. The Government encourages all actors to take advantage of the opportunities for increased collaboration across sectors that Horizon Europe provides.

The missions illustrate the need for interdisciplinary cooperation and collaboration across sectors, where systemic changes will be achieved by the actors coming together to define challenges, find solutions and put them into practice. They also aim to trigger broad engagement by civil society and funding from the business sector, public sector and authorities. Norway may have an advantage here, since we have experience of actor-driven strategic research and innovation processes, such as the 21-processes.

The business sector, and small and medium-sized enterprises in particular, is assigned a major role and has many opportunities in Horizon Europe. The Government expects the Research Council and Innovation Norway to enable more actors to cooperate with small and medium-sized enterprises in Horizon Europe. They should also inform the actors about the available opportunities, e.g. by sharing good examples of collaborative projects involving small and medium-sized enterprises.

The public sector will have a clearer role in Horizon Europe and be in a position to contribute to solutions, for example by introducing regulations and ensuring that procurements support research and innovation solutions. County authorities and municipalities should

therefore strengthen cooperation across sectors in their regions, by collaborating with the business sector and organisations that conduct research, and by engaging civil society.

The institute sector should continue to be a driving force for increasing participation by the business and public sectors. Cooperation between Universities Norway, the Association of Norwegian Research Institutes and the Research Council can help to strengthen interaction between the institute sector and the higher education sector. The support system will facilitate cooperation across sectors. National instruments, such as centre schemes and innovation clusters, can be organised to mobilise increased participation in the European cooperation. The support system will also draw on its offices abroad and international networks to promote cross-sectoral international cooperation.

Actions

- **The Research Council and Innovation Norway shall further develop arenas where the business sector, institutions that conduct research, and users and service developers can discuss common initiatives and collaboration.**

4.1.5 Expectations of the actors

The actors that conduct research play an important role in mobilising, supporting and guiding their environments, both on their own and in collaboration with the agencies. The institutions and enterprises must take a strategic and long-term approach if they are to succeed in the European competition. The Government encourages universities, university colleges, institutes, health trusts, the business sector and public sector to develop their own objectives and strategies for their participation. The Government expects the institutions to continue to further develop their own support systems in line with the development of the European cooperation, such as increased synergies between Horizon Europe and other EU programmes, and increased interaction between national and European sources of funding.

Experience shows that applications from new actors will have a lower success rate than applications from more experienced applicants. However, developing applications helps to increase expertise and build networks. The actors should build on their success in areas where they have done well, while, at the same time, developing plans for how they can increase their success rate in new areas or areas in which they have not done as well. This should be seen in the context of the actors' own strategic priorities. All the actors should familiarise themselves with the changes in Horizon Europe to ensure that their project proposals match calls as accurately as possible.

The Government encourages all the actors to take steps to enable employees to enlist as experts and participate in the evaluation of applications to the European Commission. The evaluators gain valuable insight into how applications to Horizon Europe should be written and also an opportunity to expand their networks in Europe.

The exchange of experience between institutions and networks helps to generate expertise. The Norwegian Network for Administration and Research Management (NARMA) and the EU networks are examples of important arenas for learning and collaboration.

Actions

- **The ministries shall follow up the results in the HE sector and relevant institutes in the steering dialogue.**

4.2 Interaction between national and European policy instruments and programmes



Major initiatives across countries, sectors and policy areas are required to achieve the EU's ambitious objectives for the green and digital transition and sustainable competitiveness, and to meet the major challenges of society and the SDGs. The EU is therefore placing greater emphasis on coordinating European and national priorities and on combining funding from the framework programme with national and private sources of funding. The EU also envisages greater synergies between different EU programmes. This focus area addresses how the authorities, agencies and the actors themselves can take advantage of the links between national and European instruments and programmes.

4.2.1 National and European co-funding

The EU is placing greater emphasis on combining funding from the framework programme with national and private sources of funding. This will enable Norway to increase its focus on areas that are important to Norwegian research and innovation, society and economy, but where we lack adequate capacity and funding on our own. Co-funding with EU and European partners may therefore be positive when we need to prioritise more between different national research purposes.

In many cases, national funding can have a greater impact by being used together with European funding and funding from other countries. The Research Council and Innovation Norway already have a great degree of freedom to use funding from national programmes and instruments in joint activities and calls with European partners where this benefits and provides greater opportunities for Norwegian actors. In the coming years, the ministries and agencies shall continuously assess how national instruments can be linked even more strategically to European research and innovation activities.

The Government will focus particular attention

on partnerships and missions. Active Norwegian participation in the design and leadership of partnerships with Norwegian co-funding may prove a successful strategy for Norwegian interests. Existing national instruments and activities can support Norwegian participation in the missions and, by doing so, contribute to common solutions to global challenges. The responsible ministries, the Research Council and Innovation Norway should have a special focus on securing funding for partnerships and missions in areas of major national importance and on securing good links with national actions in the mission areas.

Actions

- **The relevant ministries, the Research Council and Innovation Norway shall assess how Norway should follow up missions with national actions and activities.**
- **The Research Council and Innovation Norway shall take steps to enable Norwegian actors to play a strategic role in partnerships and missions in areas of major significance to Norway.**

4.2.2 Synergies between Horizon Europe and other EU programmes

Horizon Europe will work in synergy with other EU programmes. Norway must therefore take advantage of the links between Horizon Europe and other EU programmes to ensure that our participation has the greatest possible effect.

The different EU programmes Norway participates in represent a broad range of opportunities for Norwegian research and innovation environments.

Some programmes build on research and innovation results from Horizon Europe by funding projects that use knowledge, technology and solutions in public administration, the market or in society. In other instances, participation in other EU programmes can serve as an arena for learning, competence development and capacity building, which can subsequently lead to participation in Horizon Europe projects.

Two new programmes, the Digital Europe Programme and the European Defence Fund, have considerable R&D components in the digitalisation and defence sectors. These programmes offer project funding in areas where Norwegian actors already collaborate with European partners. Norway participates in several programmes that address major societal challenges and strengthen European enterprises' competitiveness: The EU Space Programme, which along with Horizon Europe strengthens the competitiveness of the space industry, and which is e.g. instrumental in environmental monitoring; COSME, which along with Horizon Europe promotes growth in small and medium-sized enterprises; and InvestEU, which strengthens access to capital for research and innovation. Norway also participates in the EU health programme EU4Health, which funds, among other things, the development of health technology and innovation. EU4Health will help to secure preparedness to health threats in future by identifying research needs and spreading and implementing the results from Horizon Europe in the Member States and associated countries.

The Government encourages Norwegian actors to consider how they can best take advantage of their overall participation in Horizon Europe and other EU programmes. Norwegian research and innovation actors can exploit the synergies between different programmes to achieve their own goals and to help achieve national goals. It is important that Norwegian research and innovation environments, including the management of the organisations, look at the overall portfolio of programmes in which Norway participates and are aware of the synergies between Horizon Europe and other EU programmes. The actors can thus themselves take steps to enable the environments to combine funding from different programmes. The actors can also benefit greatly from taking advantage of networks and consortiums they have built up across EU programmes.

The Government expects universities and university

colleges to exploit the synergies between Horizon Europe and Erasmus+. For universities and university colleges, this can increase opportunities to achieve institutional goals, promote career and recruitment work, and support research-based education and the quality and relevance of their programmes. Instruments such as the European Universities Initiative and staff mobility under Erasmus+, as well as missions, the European Institute for Innovation and Technology and Marie Skłodowska-Curie Actions under Horizon Europe are intended to promote synergies between these programmes.

The responsible ministry and support system for each individual EU programme is responsible for facilitating Norwegian participation in the respective programmes. The Research Council and Innovation Norway, in collaboration with agencies responsible for other programmes in which Norway participates, will help to ensure that the actors receive information and guidance on how they can take advantage of synergies. This will enable the actors to exploit the potential inherent in the links between Horizon Europe and other EU programmes. Information and guidance work will make requirements of the National Contact Points,⁵ which, in addition to their Horizon Europe expertise, will require knowledge of other programmes and the ability to refer applicants to other programmes' support systems.

Stronger cross-sectoral cooperation and a more coordinated approach from the Norwegian public administration are needed to take advantage of the synergies between Horizon Europe and other programmes. This applies both to the design and promotion of Norwegian positions and in the coordination of the support systems that assist the actors. The ministry that has the main responsibility for each individual programme has overriding responsibility for this coordination. The ministries and agencies also need arenas for coordinating and exchanging experience on synergies, issues that apply to multiple programmes and prioritising capacity and resources, in order to best facilitate Norwegian participation.

⁵ The EU organises the National Contact Point (NCP) scheme, which is tasked with providing guidance and support for participation in the framework programme. In Norway, this work is attended to by the Research Council, Innovation Norway and the Norwegian Space Agency.

Actions

- The Research Council and Innovation Norway shall, in collaboration with relevant agencies and ministries, take steps to collate the information available about EU programmes with synergies with Horizon Europe.
- The Research Council and the Directorate for Higher Education and Skills shall take steps to enable universities and university colleges to take advantage of the links between Horizon Europe and Erasmus+.
- The ministries shall establish joint arenas for collaborating on and coordinating participation in EU programmes and exploiting synergies between EU programmes.
- The Research Council and Innovation Norway shall, in collaboration with relevant organisations, establish arenas for sharing experience with actors in the support system for the other programmes in which Norway participates.

Actions

- The Research Council and Innovation Norway shall provide guidance to applicants on the potential links between the EEA and Norway Grants and Horizon Europe.
- The Ministry of Education and Research and the Ministry of Trade, Industry and Fisheries shall, in collaboration with the Research Council and Innovation Norway, strengthen the thematic links between the EEA and Norway Grants, Horizon Europe and the Long-term Plan for Research and Higher Education.

4.2.3 Links to the EEA and Norway Grants for research and innovation

The EEA and Norway Grants help to reduce social and economic differences in Europe and strengthen links and cooperation between Norway and 15 European countries.⁶ A considerable part of the funding goes to research and innovation activities. The funding aims to generate high quality research and innovation collaborations between environments in Norway and the recipient countries. In Norway, the Research Council and Innovation Norway are responsible for contributing to developing the programmes and providing advice to Norwegian actors. The Government expects Norwegian actors to use the EEA and Norway Grants as an opportunity to build networks, expertise and capacity, with a view to collaboration in Horizon Europe. The Government will work to ensure that the EEA and Norway Grants for research and innovation are organised in a manner that supports Horizon Europe, are attractive to Norwegian partners and enable applicants to take advantage of the links to Horizon Europe.

⁶ Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

Stronger links between education, research and innovation

The European Universities Initiative funds European university alliances that facilitate international mobility, good collaborative structures, institutional cooperation and the development of innovative and cross-disciplinary solutions to global challenges. The alliances are primarily funded through Erasmus+, but co-funding with the research and innovation programme will help to integrate education, research and innovation dimensions in the university alliances.

The University of Bergen (UiB) is part of the university alliance Arqus together with universities in Granada, Graz, Leipzig, Lyon, Padova and Vilnius. UiB leads an action line on Engaged European Citizens. Through Erasmus+, UiB, in cooperation with the other partners,

offers challenge-based courses where students engage in research and solve concrete challenges in their regions. A work package funded through Horizon 2020 is also included in the action line led by UiB, where the goal is to develop a toolbox for involving citizens in drawing up research and innovation agendas. The Arqus project works on developing research-based guidelines on the quality of education, on researcher education and career paths for doctoral candidates and on strengthening students' and researchers' innovation skills. Through the Research Council's FORSTERK programme, UiB has been awarded funding to collect, share and disseminate the results of the Arqus project.



4.3 European and global cooperation



For Norway, European cooperation on research and innovation is a platform for dialogue on politics and framework conditions for global cooperation. We must therefore enable the actors to see the different international cooperation arenas as complementary, and we must apply experiences from European cooperation on politics and framework conditions to international cooperation.

4.3.1 Good interaction between European and bilateral cooperation

A range of activities under both the ERA and Horizon Europe are open to participants from international organisations and countries that are not members of the EU or associated to the framework programme (third countries). This means that European cooperation on research and innovation can be used to strengthen cooperation between actors from countries outside the European Economic Area (EEA). EU research and innovation activities open for global cooperation to meet grand societal challenges, such as global health, and to contribute to the green and digital transition and achieve the UN SDGs. The European cooperation is an arena for collaborating with the world's leading researchers and research and innovation environments. Norway shall be a driving force for ensuring that calls and activities under the framework programme are as open as possible to cooperation with third countries.

The Government wants the different arenas for international research cooperation to complement each other and be seen as a whole. Environments that collaborate with Brazil, Canada, China, India, Japan, Russia, South Africa, South Korea and the USA, countries covered by the Panorama Strategy, should, in particular, exploit the opportunities for synergies between national and European programmes. The Research Council and Innovation Norway shall enable the actors to use Horizon Europe to promote bilateral cooperation with priority partner countries outside the

EEA. The Government also wishes to use the European arena to promote cooperation with international organisations, such as the World Health Organization, and international initiatives such as the Mission Innovation.

Targeted bilateral efforts at the government level towards individual countries, in line with national strategies, are also an expedient means of strengthening participation in European cooperation on research and innovation. This involves strategic efforts to strengthen the cooperation at government level, joint positions on European initiatives and a particular focus on the part of the agencies on mobilising collaboration with partners from these countries.

Actions

- **The Research Council and Innovation Norway shall provide guidance to actors on how they can take advantage of European research and innovation activities in cooperation with third countries, not least to strengthen cooperation with the Panorama countries.**

4.3.2 Collaboration on policy development for global cooperation

Through the European cooperation, Norway gains access to information and arenas for dialogue on policy, framework conditions and principles for cooperation with countries outside the EEA, in areas such as academic freedom, reciprocity and intellectual property rights. Norway shall actively contribute to the development of a common European policy that promotes global research and innovation cooperation, and to harmonising the framework conditions for and removing the structural obstacles to international

cooperation. In this context, the Norwegian authorities shall work within the ERA framework to promote academic values as a basis for international cooperation. The authorities shall also use the information and experience from other countries and common European guidelines as a basis for developing national policy and facilitating cooperation with countries outside the EEA.

Actions

- **The Ministry of Education and Research shall actively participate in European fora on international cooperation and use the knowledge and experience gained to develop Norwegian research and innovation policy.**



4.4 Development of policy and framework conditions



Participation in European cooperation on research and innovation contributes to the development of Norwegian research and innovation policy. Norway also contributes to European policy development by participating in the ERA cooperation and framework programmes. Cooperation, mutual learning and exchange of good practice form the basis for mutual adaptation and harmonisation where initiatives at the European and national level inspire and reinforce one another.

National and European policy should not be developed in isolation. We must address the links and synergies between them. Cooperation in areas such as careers and recruitment, infrastructure and open science have been important to developing Norwegian policy and to strengthening the framework conditions for Norwegian research and innovation. Norway can contribute to developing European policy and the European research and innovation system in areas in which Norway is well positioned and has experience, and can take advantage of sharing experience in areas where we have more to learn.

New priorities, policies and initiatives are developed continuously. It is important that Norway uses its opportunities to contribute, particularly in areas that touch on national priorities and policy. The EEA Agreement and participation in the framework programme give us the opportunity to participate in advisory working groups that develop policy and priorities.

The ministries and agencies that participate in working groups must ensure that their inputs are aligned with current national policies. Changes in policy and the consequences thereof must be broadly communicated to the public administration and ministries and to actors such as the HE sector, institutes, the public sector and the business sector, particularly if they have consequences for participation in Horizon Europe.

The EU monitors countries' follow-up of areas and actions prioritised under the ERA. This provides an important knowledge base for the development of Norwegian policy, where Norway can harmonise its

own policy with that of the EU and other European countries if relevant. The Government wishes to take more systematic advantage of the opportunities for learning.

The ERA priorities are relevant to many Norwegian research and innovation actors. A number of institutions are already actively contributing to European policy development in national and European arenas. The Government wishes to see more actors becoming involved in research and innovation policy issues that are relevant to them.

Actions

- **The Ministry of Education and Research and other relevant ministries shall take more systematic advantage of experience and learning from European policy developments in the development of Norwegian research and innovation policy.**
- **Relevant ministries and agencies shall actively participate in committees, expert groups and fora under the ERA.**
- **The Ministry of Education and Research shall participate in and follow up the results of the ERA monitoring activities.**
- **The Ministry of Education and Research shall follow up the links between the ERA and the European Education Area.**
- **The Ministry of Education and Research shall, in cooperation with other ministries and the agencies, make efforts to ensure that the ERA reaches and involves a broader range of users.**

4.5 Positioning and contribution



If our interests and priorities are to gain influence, Norway must be an active participant and contributor in the European cooperation. Norway has good opportunities for participating in the development of European initiatives, not least by pursuing early and clear Norwegian positions and by effectively taking advantage of different participation channels, but also by using and safeguarding our rights set out in the EEA Agreement.

4.5.1 Early positions and good exploitation of different participation channels

When European initiatives are at the proposal stage, Norway and Norwegian actors have the opportunity to contribute on an equal footing with actors in EU Member States. We must exploit these opportunities more expediently. The Government will form early and clear Norwegian positions on policy and regulations that are important to Norway, in line with the requirements set out in the Instructions for Official Studies and Reports. EU research and innovation initiatives affect many ministries, agencies and actors. It is important to share information and ensure that all affected actors are consulted. The Ministry of Education and Research has overriding responsibility for coordinating Norwegian positions.

Norway will take advantage of the channels at our disposal for cooperating with and communicating viewpoints to EU institutions and Member States. A range of representatives of the Norwegian authorities, agencies and various actors with interests in research and innovation cooperation are in Brussels, as are many actors in European networks and umbrella organisations. The cooperation between Norwegian actors in Brussels and between actors in Brussels and Norway has been strengthened in recent years. This cooperation promotes knowledge sharing and allows more people to make contributions. It is also an important means of collecting information about and influencing policy design and European initiatives. The

Government wishes to further build on and systematise this work, in order to take maximum advantage of our presence in Brussels and our participation in European networks. The Government expects stronger cooperation between different counsellors at the Mission of Norway to the EU so that we can take even greater advantage of Norway's engagement with the EU institutions. The Government also expects the agencies and the actors to contribute to shaping the European cooperation, both independently and through their European networks.

In the implementation of the framework programme, contributing to the design of strategic plans, work programmes and calls for proposals is an important way of attending to Norwegian interests. Participating in the coordination of policy and instruments is a key aspect of the work on the ERA, and Norway will use its participation in programme committees and the ERA groups to this end. Delegates from the responsible ministries, experts and National Contact Points will be instrumental in this respect. The national reference groups for Horizon Europe will provide expert input and help to address the breadth of the participants' interests. Norway can also contribute to developing and implementing European policy by taking part in various expert groups in the EU. This is a channel that we could use more expediently.

Through the EEA Agreement, Norway has good channels for dialogue with the Commission. Alliances with Member States and the European Parliament are also very important, both with respect to obtaining information about relevant processes and positions and to communicating Norway's points of view. Experience shows that the European Parliament is open to this and that it is possible to win understanding for Norwegian interests. This window of opportunity should be used more systematically. Strategic and long-term relations should also be built with individual countries, e.g. the Nordic countries. Norway should also work strategically with the states that hold the EU presidency, as they are instrumental in developing new

policy and new initiatives. Many Norwegian research institutions and business actors play an important role in communicating input to EU institutions and Member States, and the Government will facilitate collaboration and knowledge sharing with these actors.

National experts, i.e. employees seconded from the public administration to EU institutions for a limited period, help to safeguard Norwegian interests, open doors for dialogue and build competence in the European cooperation. It is particularly important to contribute to European policy development in areas of particular significance to Norway, in which Norway can offer sought-after expertise.

Actions

- The Ministry of Education and Research shall develop plans for contributing to important policy initiatives such as the strategic plan for Horizon Europe for the years 2025 to 2027, and the next framework programme from 2028 onwards.
- The Government shall consult the agencies, national reference groups and other relevant actors when national positions are drawn up.
- The Ministry of Education and Research shall, in cooperation with the Mission of Norway to the EU, prepare a plan for more strategic and systematic positioning and contribution work vis-à-vis the European Parliament and EU Member States.
- The Ministry shall, in cooperation with relevant ministries, work to increase the number of national research and innovation experts in the European Commission in areas of particular significance to Norway.
- The agencies shall use their channels and networks to promote Norwegian positions.
- The agencies shall take steps to enable Norwegian actors to contribute to shaping the European cooperation.

4.5.2 Rights through the EEA Agreement

Norway participates in Horizon Europe and the ERA through the EEA Agreement. The Agreement contains provisions on the conditions for the EEA EFTA States' participation in EU programmes. These ensure, among other things, access to the whole programme, the same rights as participants from the Member States in projects and the right to participate in committees.

Norway has nonetheless experienced instances where Norwegian actors' participation rights have not been safeguarded or where there has been doubt or a lack of clarity concerning the legal basis for EEA EFTA States' participation. This is often due to insufficient awareness of or compliance with the EEA Agreement. We must therefore endeavour to ensure that the EU institutions have sufficient knowledge of the conditions of the EEA EFTA States' participation. Norwegian actors should have sufficient knowledge of the Agreement to ensure that their rights are respected.

Actions

- The Ministry of Education and Research and the Mission of Norway to the EU shall, in cooperation with Iceland and the EFTA Secretariat, actively engage in informing EU institutions about EEA EFTA States' rights under the EEA Agreement.
- The Ministry of Education and Research shall, in cooperation with the Research Council and Innovation Norway, take steps to ensure that delegates, experts and the national support system have sufficient knowledge of the rights set out in the EEA Agreement.
- The Ministry of Education and Research shall, in cooperation with relevant ministries, the Mission of Norway to the EU, the EFTA Secretariat and Iceland, follow up inadequate compliance with the EEA Agreement.



Norwegian actors in Brussels

Many Norwegian actors with interests in the research and innovation cooperation have a presence in Brussels:

The Mission of Norway to the EU

The Norwegian Contact Office for Research, Innovation and Education (NorCore)

Research institutions:

The Norwegian University of Science and Technology, SINTEF and the University of Bergen, and the University of Oslo through The Guild

The Norwegian Academy of Science and Letters

Businesses:

Equinor, Statkraft, DNVGL and Energy Norway

Social partners:

The Norwegian Association of Local and Regional Authorities (KS), the Norwegian Confederation of Trade Unions (LO) and the Confederation of Norwegian Enterprise (NHO)

Norwegian regional offices:

The Northern Norway Region European Office, the Oslo Region European Office, the Stavanger Region European Office, the South Norway European Office, the Trøndelag Region European Office and the Western Norway Brussels Office

The Norwegian Parliament's Brussels Office

4.6 Dissemination and use of results



Horizon Europe requires that actors participating in projects make their results known, both during the project period and afterwards. Norway cannot achieve the objectives of its strategy without disseminating and using results. The actors participating in projects are particularly responsible in this respect.

Knowledge and results generated through the European cooperation can be disseminated and used in many ways: by being further developed through research and innovation, by academic and popular science dissemination, open science, teaching, policy development, administration and guidelines, further development of public services, commercialisation, co-creation and the involvement of civil society.

It is a general principle in both the EU and in Norway that policy and legislation should build on knowledge-based assessments. Targeted policy development and good legislation are therefore contingent on continuous access to up-to-date research. Knowledge from projects in the framework programmes provide a good decision-making basis for developing policy and regulations. This helps to ensure good administration and well-functioning services for civil society. Since Horizon Europe is interdisciplinary and intersectoral, the results will be relevant to several sector responsibility areas under the ministries. Good coordination and

cooperation between the ministries is thus necessary to ensure that results that fall under several ministries' areas of responsibility are disseminated and used expediently.

EU projects contribute to new research, innovation and commercialisation of results. The knowledge developed in projects may also be relevant to research and innovation actors not directly participating in the projects. Results from European health research may, for example, contribute to new research being developed by other actors or to the results being commercialised through e.g. spin-off companies. Through expedient dissemination and further use and development, this knowledge can thus help to generate new jobs or better health services and treatment for patients and civil society at large. Actors from different sectors participating in European projects will also help to ensure that research and innovation results become more relevant and are employed more quickly by society.

The Government encourages all the actors to use the results from Horizon Europe. Businesses can play a vital role in ensuring that knowledge and results from European cooperation on research and innovation are used and that they benefit society and the economy. The business sector's use of research and innovation results



is expected to lead to value creation, greater innovation capacity and better products, processes and services.

Public sector participation is vital to ensuring that knowledge and results are put into use quickly and in a targeted manner to develop policy, meet concrete challenges and solve tasks, improve public administration and develop better services. The public sector is expected to help ensure that the general public recognises the value of society's investments in research and innovation and that we employ new solutions more quickly. Horizon Europe places emphasis on involving citizens and will test different methods to achieve this, particularly with respect to missions.

The HE sector has a special responsibility to disseminate results and ensure that knowledge from the EU cooperation is used in education programmes and, by doing so, benefits the labour market. Horizon Europe has instruments that help different groups of actors to collaborate, such as funding for innovation ecosystems, and such instruments have been shown to increase the likelihood of results being used.

The European Commission's intention is that the research and development that takes place in Horizon Europe is further developed, put into practice and upscaled in several other EU programmes. It is important that Norway participates in other EU programmes where relevant, to ensure we can fully benefit from the further use of Horizon Europe results.

Actions

- The agencies should strengthen actions that contribute to the dissemination and use of results.
- The agencies should help to enable Norwegian actors to test different methods of citizen engagement in research and innovation activities.
- The Government shall promote open science and be a driving force thereto at the national and European level.

Collection, transport and recycling of plastic packaging

In the Horizon 2020 project PlastiCircle (2017–2021), SINTEF AS, together with 21 European organisations, has developed a new system for collecting, transporting, sorting and recycling plastic packaging. Recycled hard plastics and plastic wrap from households can be used for industrial purposes. The project has shown that recycled polymers can be used in a wide range of new products, and it has made, among other things, plastic wrap from 100 per cent recycled materials, panels for technical products and car components. The results show that legislation should encourage the use of recycled packaging, because recycled plastic can be used for many other purposes. The project compares the environmental impact of using lorries that run on diesel and electricity for collecting waste in the

cities Sarpsborg, Manchester, Geneva, Valencia, Basel and Frankfurt. Electric power has proven to be very suitable for waste collection lorries as they operate on local routes at a low speed, and start and stop many times.

The City of Oslo has participated in the project's advisory board, and is considering employing several of the solutions developed in the PlastiCircle project. The waste and recycling agency in the City has tested smart technology since 2017. Among other things, they have introduced the Oslo key for all Oslo residents, digital ID for reuse of materials and RFID waste containers. Cameras are used in the sorting facility for image recognition of the content of bags of waste.

5. Monitoring and evaluation of Norwegian participation

Monitoring

Objectives must be followed up by monitoring Norwegian participation and results in the ERA and Horizon Europe in order to determine whether efforts need to be changed to achieve the objectives of participation and the ambition of a 2.8 per cent share of contributions.

The most important indicators that the Ministry of Education and Research, the Research Council and Innovation Norway shall regularly follow up and assess in relation to different variables such as sub-programme, instrument, sector and gender, are:

- National and differentiated shares of contributions (e.g. pillar and sub-programme)
- Other national or differentiated statistics on participation from eCorda (e.g. the number of coordinated projects, success rates and grades)
- The ERA monitoring and indicator system, including the European Innovation Scoreboard indicators

The Ministry of Education and Research, the Research Council and Innovation Norway shall also monitor the European Commission's follow-up of the indicators discussed in Annex V to the Horizon Europe regulation regularly.

The strategy must be followed up and participation monitored at regular intervals throughout the strategy period. Monitoring must be supplemented with evaluations of Norway's participation and of the authorities' and agencies' follow-up, including mobilisation work.

Evaluation

Goal attainment and participation will be evaluated halfway through the strategy period. This will provide a good foundation for any major changes to efforts and actions. The evaluation will also serve as a knowledge base for a decision on continued participation in European cooperation on research and innovation from 2028. A broader set of indicators will be used in the midway evaluation. The effects of participation cannot always be quantified or measured. The measurement will therefore be supplemented with qualitative assessments.



6. Appendix I: The European Research Area (ERA) and Horizon Europe

The appendix describes the European Research Area (ERA) and Horizon Europe. It also describes Norway's participation in Horizon 2020 and the potential for further participation in Horizon Europe. This forms an important part of the background for the Government's high ambitions for Norwegian participation in the period 2021–2027.

6.1 The European Research Area

The EU established the ERA in 2000 to improve cooperation on and coordination of research and innovation in Europe, and to establish good research and innovation frameworks. The ambition was to create a common European research area by removing national barriers. Through the ERA, the countries and the European Commission have cooperated on actions to secure free movement of researchers, knowledge and innovation, critical mass in joint initiatives and more effective national systems. Over the course of 20 years, the ERA has established many common European instruments and actions that have been instrumental in the development of European and Norwegian research and innovation policy. Cooperation on infrastructure, programmes, open science, attractive career paths for researchers and researcher mobility has been successful. The cooperation in these areas, and in the areas of equality, non-discrimination and gender perspectives in research, will be given high priority in the ERA in the coming years.

Although the ERA cooperation has been successful in many areas, the objective of the countries investing 3 per cent of their GDP in research and innovation has not been achieved, and the countries still do not invest enough in research and innovation. The proportion funded by the business sector and the proportion of results used in society and business is lower than in the USA, Japan and China. The EU is now stepping up its efforts and relaunched the ERA in 2020. The new ERA

builds on common European values such as democracy and freedom of research. Research and innovation will play a key role in tackling societal challenges, rebuilding the economy following the COVID-19 pandemic and in implementing initiatives such as the green and digital transition and sustainable competitiveness in line with the UN SDGs. The EU wishes to see more binding cooperation on priorities, investments, reforms and policy, and closer coordination of national funding and EU funding. The ERA will maintain the objective of countries investing 3 per cent of their GDP in research and innovation, and the public authorities are encouraged to take greater responsibility for increasing the business sector's R&D efforts and for contributing to transition in line with the SDGs.

The EU intends to improve its use of research and innovation results. The ERA is therefore placing greater emphasis on industry and private sector participation. For example, research infrastructure will be further developed and used to a greater extent in cooperation with the business sector. The EU also envisages greater civil society and public sector involvement, which will build society's confidence in research and innovation.

The ERA cooperation must be in line with the EU's foreign policy priorities and help to achieve the SDGs. The EU's competitiveness and independence must be secured in important areas of technology, and the EU should play a greater global role.

The EU also wishes to reduce the inequalities between Member States and regions with respect to investments in research and innovation, scientific quality and the countries' ability to attract and retain talented individuals.

The EU is increasingly recognising the synergies between education, research and innovation. To achieve the ERA ambitions, the links between the ERA and the European Education Area must be used more

expediently. Universities and university colleges play a key role since education and research form part of their core activities. The ERA will emphasise a dedicated transition agenda for the universities in the coming years. The Horizon Europe and Erasmus+ programmes are important instruments for strengthening the links between education, research and innovation. The ERA priorities are also an important backdrop for the funding announced under Horizon Europe.

Norway has actively participated in the work on the ERA from the get-go. As well as collaborating on policy development, we have also participated in partnerships and programme collaboration, common European programmes and research infrastructures (the European Strategy Forum on Research Infrastructures ESFRI).

Norway is, for example, a partner in 18 European research infrastructures and hosts two: ECCSEL ERIC in Trondheim, which gives researchers direct access to world-class European facilities in carbon capture and storage, and CESSDA ERIC in Bergen, which gives social scientists access to high quality data. Many Norwegian universities and university colleges develop their personnel policy on the basis of ERA instruments, and many have signed initiatives such as the European Charter for Researchers and Code of Conduct for the recruitment of researchers (Charter and Code) and developed institutional action plans. Norwegian institutions also participate in EURAXESS, a portal for mobile researchers, which provides practical information about work and funding opportunities, recruitment and career development.

Priorities and actions in the new ERA will be further developed together with the participating countries, and it is important that Norway actively contributes to the forthcoming priorities.

6.2 Horizon Europe

Horizon Europe is one of the European Commission's most important instruments for achieving the ERA ambitions. With a budget exceeding EUR 95 billion, Horizon Europe, including contributions from Next Generation EU, is around 14 per cent larger than Horizon 2020. The programme is also more complex than Horizon 2020 and will help to remove barriers between different disciplines and support the




interaction between different actors. Great emphasis will be placed on the projects triggering societal impact, and on the results being used by the business and public sectors and benefiting civil society. Greater emphasis will also be placed on synergies between Horizon Europe and other EU programmes. Thirty-five per cent of the budget has been set aside to tackle climate challenges.

Partnership on carbon capture, use and storage

Carbon capture and storage is one of the most important actions for achieving international climate goals. Since 2016, the Research Council has coordinated ACT – Accelerating CCS Technologies, a major international partnership on carbon capture, use and storage. The partnership, an ERA-NET Cofund, is funded by Horizon 2020 and the Research Council, along with 12 other European countries and regions and the USA, Canada and India.

The transnational research collaboration enables the partnership to contribute expertise, knowledge and results that are relevant to different types of carbon capture and storage technologies which not only take place in laboratories, but also on a full scale. The partnership has announced almost EUR 110 million in funding for research and innovation projects, around EUR 12 million of which comes from Horizon 2020. To date (spring 2021), Norway participates in 16 projects.

Several of the projects have contributed results of importance to 'Longship', the major Government initiative in carbon capture and storage. The plan is to continue the partnership under the Clean Energy Transition Partnership (CETP) in Horizon Europe, and that it will make an important contribution to the European Green Deal.

Horizon Europe		
Total budget: EUR 95.5 billion euro		
 Excellent Science 26,1 %	 Global Challenges and European Industrial Competitiveness 56,3 %	 Innovative Europe 14 %
European Research Council (ERC)	Clusters 1. Health 2. Culture, Creativity and Inclusive Societies 3. Civil Security for Society 4. Digital, Industry & Space 5. Climate, Energy and Mobility 6. Food, Bioeconomy, Natural Resources, Agriculture & Environment	European Innovation Council (EIC)
Marie Skłodowska-Curie Actions (MSCA)		Innovation ecosystems
Research Infrastructures		European Institute of Innovation and Technology (EIT)
Widening participation and strengthening the European research area 3.6 %		
Widening participation and spreading excellence. Reforming and enhancing the European R&I system.		

Source: The Research Council and the Ministry of Education and Research

Horizon Europe is divided into three pillars and a horizontal part:

- Pillar 1: Excellent Science
- Pillar 2: Global Challenges and European Industrial Competitiveness
- Pillar 3: Innovative Europe
- Horizontal part: Widening Participation and Strengthening the European Research Area

Pillar 1 covers funding for ground-breaking and curiosity-driven research initiatives under the European Research Council (ERC), the mobility funding instruments under Marie Skłodowska-Curie Actions and funding for research infrastructure.

Pillar 2 covers six thematically broad clusters that fund collaborative projects that aim to help meet societal challenges and strengthen Europe's competitiveness. This pillar also funds partnerships. Partnerships are large common programmes in which the European Commission collaborates with countries and public sector and business actors, where they all contribute

funding. Each partnership develops a research and innovation agenda in an important area, so that challenges that each country would be hard pressed to tackle alone can be solved together. Pillar 2 also launches missions in five areas: ocean, cancer, sustainable and smart cities, adaption to climate change, and soil health and food.⁷ The missions are a ground-breaking instrument that will help to meet global challenges by 2030 and to achieve the political objectives set out in strategies such as the European Green Deal, the European Industrial Strategy and the Europe's Beating Cancer Plan. They aim to engage a broad cross section from academia, the public sector and the authorities, business, non-governmental organisations and civil society. The missions must be interdisciplinary and attract funding from different sectors. The missions and partnerships will secure binding engagement from countries and lay down the requirement that national investments in research and innovation must be seen in context with investments in joint European initiatives.

⁷ Which of the five missions are to be launched in full will be clarified over the course of summer 2021.

Horizon Europe places great emphasis on innovation across the pillars. Pillar 3 covers instruments that will facilitate all types of innovation by funding technological developments, demonstrations and knowledge transfer. The target group for pillar 3 is research institutions, start-up enterprises and small and medium-sized enterprises. Pillar 3 will help the business sector to compete at the global level and to generate sustainable jobs and value creation. The European Institute of Innovation and Technology (EIT), which brings research, education and business together, will be continued under this pillar. A new European Innovation Council (EIC) will also be established. The EIC will fund research and development in enabling technologies and radical innovation, and help start-up enterprises to commercialise ground-breaking ideas. Small and medium-sized enterprises will thus gain the opportunity to grow and compete globally. The background for this is that Europe has not sufficiently succeeded in bringing the results of research and innovation to market. Horizon Europe can reduce the risk for enterprises and the capital market. The European ecosystems for innovation are still fragmented. This pillar will therefore support cooperation between ecosystems and actors such as innovation agencies, clusters, incubators, accelerators and investors.

Horizon Europe also has a horizontal part, Widening Participation and Strengthening the European Research Area. The budget will in part support countries with moderate or weak performance in research and innovation, and, in part, help to achieve the ERA ambitions by supporting reforms and improvements to the European research and innovation system. Under this part, there will be calls in areas such as ethics, open science, responsible innovation and dissemination of relevance to Norwegian actors.

Horizon Europe will place greater emphasis on involving citizens and on research and innovation taking place in co-creative processes. Citizens will not merely be passive recipients of services and results, but make an active contribution. This will increase the programme's relevance and the public's understanding of the important role research and innovation play in society, and ensure that results are used.

Several of the priorities in Horizon Europe will be further developed during the programme period. An overarching strategic plan, which sets out overriding

objectives and which will be pivotal to the funding announced under all the pillars, has been drawn up for the period up until 2024. A new plan will be drawn up for the period 2025–2027, the last part of Horizon Europe.

The European Commission places emphasis on greater synergies and a clearer division of work between the different EU programmes in the period 2021–2027. Horizon Europe will, for example, deliver research, innovation and knowledge that supports the EU's political strategies. Other programmes will use the research, knowledge and innovation produced in Horizon Europe by further developing the results or testing or upscaling new solutions.

The link between Horizon Europe and the EU4Health programme amply illustrates the increased focus on synergies and interaction between programmes. Health is a high priority on the EU's political agenda, not least in light of the COVID-19 pandemic. EU4Health will contribute to the EU Health Union and its future preparedness. The programme will both identify research and innovation needs and help to spread and implement the results from Horizon Europe. The Directorate-General for Health and Food Safety and the Directorate-General for Research and Innovation will work closely together and coordinate various initiatives, such as the mission on cancer under Horizon Europe, Europe's Beating Cancer plan and EU4Health. Various political initiatives are often followed up by several Commission Directorate-Generals. This requires more coordination, but can also lead to more initiatives supporting the same objectives.

6.3 Participation in Horizon 2020 and the potential for participation in Horizon Europe

Norway has done very well in Horizon 2020 (2014–2020). Norwegian actors have gained access to funding, results, networks, markets, research infrastructures and world-class knowledge and research. The value of participation in the framework programme and access to results and networks is seven times the actual funding awarded to Norwegian participants under Horizon 2020.⁸

⁸ Norway's participation in the EU framework programmes for research and innovation, Economics Norway 06-2020.

Economics Norway has evaluated Norwegian participation in the seventh framework programme and Horizon 2020, and the potential for Norwegian participation in Horizon Europe. It concludes that Norway met the objectives of participation set out in the Government's strategy for research and innovation cooperation with the EU for the period 2014–2020. Participation helps to improve the quality of Norwegian research, increases innovation and competitive capacity, contributes to sustainable value creation and leads to better welfare and more sustainable development of society, as well as helping to develop Norway's research and innovation systems. Participation has a fundamental impact on the quality and competitiveness of Norwegian research and innovation and on policy development and coordination. Participation generates a great deal of added value such as access to international networks and markets, and research infrastructures that either do not exist in Norway or are bigger than Norwegian infrastructures. Economics Norway considers Horizon Europe to be thematically and strategically relevant to Norwegian actors and that the actors have both the capacity and potential to succeed in the competition.

The primary motivation for the Government and actors is the effects of Norway's participation in the framework programmes. The proportion of competition-based funding awarded to Norwegian actors (share of contributions) is, however, a good indicator of the volume of participation and it is also an indicator of the participants' competitiveness. The Government therefore aimed to achieve a 2 per cent overall share of contributions for Norway under Horizon 2020. This ambition was met by a good margin. In April 2021, when almost all the competition-based funding under Horizon 2020 had been awarded, the share of contributions was 2.49 per cent. In the last two years of Horizon 2020, from 2018 to 2020, we saw a strong increase in the share of contributions, averaging 2.92 per cent.⁹

As of April 2021, the overall funding from the EU to Norwegian recipients was EUR 1.56 billion, divided

between almost 1,900 projects. Norwegian actors have obtained most funding under the pillar 'Societal challenges' and the sub-programmes health, energy, food and climate, and substantial funding from the 'Excellent Science' pillar and the ERC and Marie Skłodowska-Curie Actions. Norwegian environments have also won large awards through the 'Industrial Leadership' pillar, and the ICT programme in particular.

The Norwegian actors come from the HE sector, institute sector, public enterprises, health trusts and the business sector.

⁹ The awards during the period 2018–2020 include two major projects for the CEPI vaccine alliance, which constitute 8.7 per cent of Norway's share of contributions since the programme started. The funding to CEPI is mainly distributed to actors outside Norway and the award therefore differs somewhat from other awards. Corrected for the awards made to CEPI, the share of contributions from 2018 to 2020 is 2.55 per cent, and 2.28 per cent from programme start-up in 2014.

Green public transport through zero-emission buses and express boats

The Stavanger Region became a lighthouse city in the Horizon 2020 project *Triangulum* in 2014. The region has developed solutions for a greener, more efficient and user-friendly society over the past few years. New technology and cooperation between private and public actors can reduce carbon emissions, create better transport and communication solutions and rationalise energy consumption. The region was the first in Norway to start using battery-operated buses in its scheduled services. After two years on the road, the buses have reduced global emissions by 127 tonnes of carbon and local emissions by 546 kg NOx.

The world's first fully-electric express boats are now being developed and produced through the project *Transport Advanced and Modular (TrAM)*. The boats will be demonstrated in operation in Rogaland by the end of 2022. The project's goal is to reduce investment costs and the delivery time for future zero-emission vessels for passenger traffic in sheltered waters. Rogaland County Authority is coordinating the project, which has five other Norwegian partners, including the Fjellstrand shipyard, which will build the boat. The project is worth almost NOK 110 million, where the Norwegian actors receive more than half of the funding. The project will also conduct studies and plan the operation of zero-emission express boats on other services in European waters.

Rogaland County Authority runs the public transport service *Kolombus*, which currently has ten vessels. The carbon emissions from these vessels are equivalent to the emissions from all of the 450 buses that operate *Kolombus'* services in Rogaland. Using zero-emission ferries and electric buses will therefore have a major impact on Rogaland's carbon emissions.

As of April 2021, 31 per cent of the funding has gone to universities and university colleges, 27 per cent to the business sector, 25 per cent to institutes, 3 per cent to public enterprises, 2 per cent to health trusts, 2 per cent to the Research Council and 10 per cent to other actors (e.g. CEPI). The largest individual actors with the highest level of participation measured by the number of contracts are SINTEF, the University of Oslo, the Norwegian University of Science and Technology, and the University of Bergen.

7. Appendix II: EU programmes in which Norway participates

Norway will participate in the following EU programmes in the period 2021–2027:

The EU Framework Programme for Research and Innovation, Horizon Europe

The EU programme for Education, Training, Youth and Sport, Erasmus+

The EU programme for Culture and the Audiovisual Sector, Creative Europe

The EU Space Programme

The EU Health Programme EU4Health

The Union Civil Protection Mechanism (UCPM)

The European Defence Fund (EDF)

The Digital Europe Programme (DIGITAL)

The EU Programme for Employment and Social Innovation (EaSI) under the European Social Fund Plus (ESF+)

Parts of the Internal Market Programme, including the Programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME)

The funding programme InvestEU



Published by:
Norwegian Ministry of Education and Research

To order publications:
The Norwegian Government Security and Service Organisation
www.publikasjoner.dep.no
Telephone: +47 22 24 00 00
Publications are also available at:
www.regjeringen.no

Publication code: F-4467 E
Illustration photo: Colourbox
Photo of Solberg: Torbjørn Kjosvold/The Norwegian Armed Forces
Photo of Asheim: The Ministry of Education and Research
Design and layout: Konsis
Printing: The Norwegian Government Security and Service Organisation
11/2021