



## **Announcements of regulations for funding international projects on the topic of green hydrogen [extracts]**

### **1 Aim and purpose of funding, legal basis**

#### 1.1 Aim and purpose of funding

This announcement is based on the Federal Government's Strategy for the Internationalization of Education, Science and Research. It serves to implement the Federal Government's High-Tech Strategy 2025 and strengthens the international dimension of the National Hydrogen Strategy also in the context of the funding programme "Innovation Union Europe – Germany's Commitment to the European Research Area".

Hydrogen technologies offer considerable industrial potential while at the same time playing a key role in achieving both German and European climate action goals. In order to ensure that green hydrogen from renewable energy can become a central component of our national decarbonization strategy, we need sustainable innovations throughout the entire hydrogen value chain, ranging from generation and storage to logistics and transport to use, for example in industry and heavy goods transport.

Research and innovation funding provided by the Federal Ministry of Education and Research is an important strategic element in implementing the National Hydrogen Strategy and in securing a leading role for German technology suppliers in this vital cutting-edge field.

This measure therefore aims to facilitate and promote effective long-term links between the German hydrogen research community and potential partners within and outside Europe in accordance with the objectives of the National Hydrogen Strategy.

Bilateral and multilateral cooperation will help create synergies that build on existing scientific and economic expertise and provide a basis for further cooperation in the coming years. Activities are eligible for funding which aim to establish research projects, networks and partnerships between Germany and one or several partner countries along the entire hydrogen value chain, ranging from generation to storage and transport to utilization and including overarching systemic issues.

In accordance with the objectives of the Federal Government's Strategy for the Internationalization of Education, Science and Research, projects that receive funding within the framework of this announcement will contribute to

- Encouraging international research cooperation
- Delivering research along the entire innovation and value chain
- Involving German stakeholders in international scientific debate



- Raising Germany's profile as a hub of research and innovation in international competition
- Establishing lasting international science and innovation networks
- Maintaining and improving Germany's scientific and industrial performance
- Closing gaps in research, development and innovation expertise in German science and industry

The purpose of funding is to support projects in accordance with the modules described in section 2 below; this announcement covers the entire methodological and thematic spectrum of promising solutions based on green hydrogen, in particular in the following fields of action:

- Basic research for a better understanding of fundamental causal relationships and processes, for example in the areas of electrochemistry, photocatalysis and storage technologies and media
- Materials and process research as well as components design, for example for pioneering catalysts, electrodes and membranes, including advanced processes for the automated identification, classification and verification of novel materials using high-throughput methods
- Issues of advanced (system) modelling, production and process design, particularly with regard to increasing cost-effectiveness
- System integration of green hydrogen in cross-sector energy systems and value chains
- Regulatory, economic and socioeconomic conditions of the national and international hydrogen economy, including issues relating to security and regulation requirements, environmental impact, suitable financing and investment models and instruments as well as energy policy and geostrategic considerations

The projects, including their fundamental aspects, must have clear practical relevance insofar as the findings generated will contribute to the further development of the national and international hydrogen economy.

The projects are expected to describe the specific potential for long-term and sustainable cooperation with the respective target country or countries.

In accordance with the objectives of the National Hydrogen Strategy, the projects will in particular support the development of technologies for green hydrogen, i.e. hydrogen produced from renewable sources.



## 2 Object of funding

On the basis of this announcement and depending on the envisaged constellation of cooperation, the BMBF plans to support measures under the modules listed below.

Further details concerning the individual partner countries and the related funding priorities and deadlines will be published in specific funding calls. The funding calls will not contain further information regarding state aid rules. The funding calls will be published at <https://www.bmbf.de/wasserstoff-international>.

- **Module A: International networking and exploratory measures including research components**

Under this module, funding will be provided for international projects (individual or collaborative projects) in accordance with the fields of action described in section 1.1 with the aim of identifying the potential for cooperation, preparing new partnerships or specific cooperation projects and expanding existing partnerships in order to ensure that cooperative ties are established between higher education and non-university research institutions in Germany and relevant research institutions and other research-performing institutions in at least one international partner country.

- **Module B: International pilot research projects (including optional industry involvement)**

Under this module, funding will be provided for international research projects (individual or collaborative projects) which primarily aim to advance R&D cooperation of German institutions with international partners in accordance with the fields of action described in section 1.1 while pursuing the above-described purpose of funding in order to intensify cooperation between higher education and non-university research institutions and, where appropriate, local authorities in Germany and at least one international partner. The research projects are expected to have clear practical relevance and deliver knowledge for the future hydrogen market which will lead to new technologies, products and/or services in specific areas of application in the hydrogen economy. Small and medium-sized enterprises (SMEs) and other research-performing institutions in Germany which fulfil the funding purpose and funding prerequisites may be involved in the projects. However, responsibility for the coordination of the projects will lie with the higher education or non-university research institutions.

- **Module C: International collaborative research projects with partners from science and industry (2+2)**



Under this module, funding will be provided for collaborative research projects (not for individual projects) involving one higher education/non-university research institution and one company respectively on both the German and the foreign side in an international cooperative effort to address one or several of the fields of action described in section 1.1 in accordance with the above-mentioned purpose of funding. The projects will intensify cooperation between higher education and non-university research institutions in Germany and the partner country with the involvement of stakeholders from industry, thereby providing a basis for sustainable international innovation networks. The involvement of small and medium-sized enterprises (SMEs) is particularly desirable. It is also possible for additional research-performing institutions in Germany and the partner country to participate.

The projects are expected to have great practical relevance and deliver findings and exploitable research results in the above-mentioned fields of application which lead to new technologies, products and/or services and indicate strategies for implementing the research results in politics, society and industry. Upon completion, the projects should attain a technology readiness level (TRL) of up to 6.

[https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016\\_2017/annexes/h2020-wp1617-annex-g-trl\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-g-trl_en.pdf).

In addition, the projects will make a contribution to:

- International networking in the stated thematic priority areas
- Preparation of follow-up activities (e.g. application for funding under specialist BMBF programmes, Horizon Europe)
- Promotion of young researchers

Projects proposed for funding under this module should document the potential for long-term sustainable cooperation with the partner country. The benefits in terms of the scientific and economic objectives should be well-balanced.

- **Module D: Internationalization of regional innovation clusters and networks**

Under this module, funding will be provided for the elaboration of internationalization schemes for regional innovation clusters or networks (individual or collaborative projects) which can be assigned to the topics of one or several of the fields of action described in section 1.1 and which are located in Germany. The funding will be used to draft a viable and sustainable internationalization scheme and to prepare projects for implementation (outside the scope of this funding measure). This includes identifying suitable international partners and innovation regions which can complement the applicants' own expertise and activities. The responsible cluster/network management organization will develop the internationalization scheme, involving the cluster or network players and the respective international cooperation partners. The intended



international cooperation partners should be management organizations which operate a network or cluster in the priority innovation regions. In cooperation with these international partners, a scheme will be developed which may lead to activities beyond the scope of this funding measure.

Projects proposed within the framework of this announcement should document the potential for long-term sustainable cooperation with the partner region. The benefits in terms of the scientific and economic objectives should be well-balanced. The involvement of SMEs is explicitly supported.

- **Module E: Scientific centres of excellence**

Funding will be provided for the establishment of sustainable cross-border institutional partnerships and centres of excellence in Germany and/or in the partner country which pool international expertise and attract top international researchers for joint work (in individual and collaborative projects) in the fields of action described in section 1.1. The centres are expected to develop long-term strategies, carry out related research projects to address current and future challenges, establish and develop the human and technical resources and contribute to permanently strengthening German research expertise in the field of hydrogen technology as well as Germany's position in international competition. German higher education and non-university research institutions as well as commercial companies in Germany are eligible for funding.

- **Module F: Technology collaborations between industry and science as part of EUREKA**

Funding will be provided for collaborative research projects (not for individual projects) which can be assigned to one or several of the fields of action described in section 1.1 in accordance with the above-mentioned funding purpose and in European and international cooperation with partners from one or several target countries. The object of funding can also be supplemented by current EUREKA calls within the thematic scope of this announcement, for example in relation to EUREKA clusters. The projects will strengthen technology cooperation between companies (particularly SMEs) and universities and non-university research institutions in Germany and the partner country/countries, thereby providing a basis for sustainable international collaborations. Participation by at least one SME from Germany is mandatory.

The projects are expected to have great practical relevance, to deliver findings and exploitable research results in the above-mentioned fields of application that lead to new technologies, products and/or services and to show how the research results will be implemented in society and industry. Upon completion, the projects should attain a technology readiness level (TRL) of up to 6.



- **Module G: Scientific support project**

A cross-cutting scientific support project (individual or collaborative project) will study the impact of the measures in the modules on the hydrogen sector in Germany as well as on activities in the partner countries. In this process, the support project will link the projects funded in the modules with one another in order to aggregate project experience and findings and to describe the impact at the level of projects and measures. The scientific support project will serve to communicate the overarching impact on the German hydrogen sector to the general public. Furthermore, the scientific support project will develop issues for follow-up research in light of the project results of the funded measures. This will enable conclusions to be reached regarding the modules and the attainment of objectives. Higher education and non-university research institutions as well as commercial companies in Germany are eligible for funding.

As a rule, funding can be provided for both individual and collaborative projects in Modules A, B, D, E and G.

Module C only allows proposals for collaborative projects involving at least two German partners and Module F only allows proposals for collaborative projects with partners from at least two EUREKA countries.

#### **4 Special prerequisites for funding**

In the case of Modules A, B, C, D and E, at least one international cooperation partner must be named whose intention to cooperate must be confirmed in a letter of intent (LoI) to be submitted together with the project outline.

Module C (2+2 projects) furthermore requires the participation of at least one German and one international higher education or research institution as well as one German and one foreign commercial company or industrial partner, which must be confirmed by a letter of intent (LoI) from the international partners.

Module F (EUREKA) furthermore requires participation by at least one SME from Germany. Partners from at least two EUREKA countries must be involved.



## 5 Type, scope and rates of funding

Grants can be provided to cover all expenditure/costs necessary for implementing the projects in accordance with the BMBF's regulations governing applications for expenditure/cost-based grants (AZA/AZK). Possible types of expenditure and costs are described for the different modules in the following:

- Module A: International networking and exploratory measures including research components
  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources and funds for equipment (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.
  - c. Funding for travel and stays by German and foreign researchers and experts
  - d. Travel expenses for international events  
In special exceptional cases, funds can be granted for travel to international events, e.g. for participating in international, project-relevant conferences held in the home country or abroad.
  - e. Expenditure/costs for workshops
  
- Module B: International pilot research projects (including optional industry involvement)  
Applications can be made for the following:
  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources and funds for equipment (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.
  - c. Funding for travel and stays by German and foreign researchers and experts
  - d. Travel expenses for international events  
In special exceptional cases, funds can be granted for travel to international events, e.g. for participating in international, project-relevant conferences held in the home country or abroad.
  - e. Expenditure/costs for workshops
  - f. Patents  
Expenditure required for obtaining and validating patents and other industrial property rights during the project period is eligible for funding (see annex for state aid for companies/SMEs).



- Module C: International collaborative projects with partners from science and industry (2+2)

Applications can be made for the following:

  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources and funds for equipment (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.
  - c. Funding for travel and stays by German and foreign researchers and experts
  - d. Travel expenses for international events  
In special exceptional cases, funds can be granted for travel to international events, e.g. for participating in international, project-relevant conferences held in the home country or abroad.
  - e. Expenditure/costs for workshops
  - f. Patents  
Expenditure required for obtaining and validating patents and other industrial property rights during the project period is eligible for funding (see annex for state aid for companies/SMEs).
- Module D: Internationalization of regional innovation clusters and networks
  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.
  - c. Travel and stays by German and international researchers and experts
  - d. Costs/expenditure for workshops
- Module E: Scientific centres of excellence
  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources and funds for equipment (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.
  - c. Funding for travel and stays by German and foreign researchers and experts
  - d. Costs/expenditure for workshops
- Module F: Technology collaborations between industry and science as part of EUREKA
  - a. Financial resources to cover staff required for the project
  - b. Project-related non-cash resources and funds for equipment (see guidelines for applicants) as well as funding for contracts with third parties
  - c. Funding for travel and stays by German researchers and experts





The sending country will fund travel and stays by project researchers and experts from the partner country.

d. Travel expenses for international events

In special exceptional cases, funds can be granted for travel to international events, e.g. for participating in international, project-relevant conferences held in the home country or abroad. Conference fees will not be covered.

e. Patents

Expenditure required for obtaining and validating patents and other industrial property rights during the project period is eligible for funding (see annex for state aid for companies/SMEs).

- Module G: Scientific support project

- a. Financial resources to cover staff required for the project

- b. Project-related non-cash resources (see guidelines for applicants). Funding applications may also be submitted for contracts with third parties.

- c. Travel and stays by German and foreign researchers and experts

- d. Costs/expenditure for workshops

The following applies to all modules: Possible alternative measures must be planned for all envisaged activities which may be adversely affected by the coronavirus pandemic, such as travel and workshops, so as to ensure that the objectives of the project can still be achieved. For relevant guidance and support, please visit the COVID-19 websites hosted by the Federal Foreign Office, the Federal Ministry of Health, the BMBF and the Federal Government.

## 7 Procedure

The project outline will contain the following:

- Description of the objective of the project
- Information about the current state of research and technology at the applicant organization
- Assessment of potential for exploitation and application
- Estimated expenditure/costs (including involvement of third parties and anticipated funding requirement as well as flat-rate project grant where applicable)

The funding calls may specify further requirements for the project outlines.

The project outline should not exceed 10-12 pages (including attachments).

The general criteria for evaluating the submitted project outlines are listed below and may be further specified in the funding calls as appropriate:



1. Fulfilment of the formal prerequisites for funding
2. Compliance with the funding objectives of the announcement as stated in section 1 above and the object of funding stated in section 2 as well as the specific thematic requirements stated in the related funding call
3. Scientific criteria
  - a. Topicality and plausibility of the project approach
  - b. Quality, expertise and complementarity of the applicant(s) with regard to the objectives of the project, including active participation and involvement of companies and organizations
4. Impact of the project at a scientific, economic and societal level
5. Compatibility with preconditions for cooperation with the partner country (see BMBF funding calls specifying individual conditions for funding of this measure)

#### 7.2.2 Submission of formal proposals and decision-making procedure

In the second phase of the procedure, applicants whose project outlines have been given a positive evaluation will be invited to submit formal proposals. Funding applications for collaborative projects must be submitted in consultation with the proposed project coordinator.

Formal proposals must include:

1. A detailed (sub-)project description
2. A detailed work, time and resource plan
3. Detailed information about the financing of the project
4. Detailed description of the application of expected results
5. Utilization plan (Module F)

The general criteria for evaluating the submitted proposals are listed below and may be further specified in the funding calls as appropriate:

1. Fulfilment of the formal prerequisites for funding
2. Compliance with the funding objectives of the announcement as stated in section 1 above and the object of funding stated in section 2 as well as the specific thematic requirements stated in the related funding call
3. Scientific criteria
  - a. Scientific and technological quality, level of innovation and knowledge gain
  - b. Methodological quality, project structure, plausibility and feasibility of the project



- c. Quality, expertise and complementarity of the applicant(s) with regard to the objectives of the project, including active participation and involvement of companies and organizations
4. Impact of the project at a scientific, economic and societal level
5. Appropriateness of budgeted resources and financing
6. Compatibility with preconditions for cooperation with the partner country (see BMBF funding calls specifying individual conditions for funding of this measure)

The formal proposals must observe and fulfil any thematic or funding-related requirements and/or the recommendations from the evaluation process regarding the implementation of the project. It is mandatory for applicants to include a project description in German in their formal proposals.

A legal claim to funding cannot be derived from the submission of a formal proposal.