



Fuel Cell and Hydrogen (FCH2)

Legal Framework	<p>Article 25 in the Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020).</p> <p>Joint Technology Initiatives (JTIs) are implemented through dedicated legal entities - Joint Undertakings (JU) - established under what was then the equivalent of the current Article 187 of the Treaty on the Functioning of the European Union (TFEU). The Fuel Cells and Hydrogen 2 (FCH2) JU is established by Council Regulation. It has its own legal entity.</p>
Structure	<p>PPPs are one of the key actions of Leadership in Enabling and Industrial Technologies, which is a specific objective of Priority II “Industrial Leadership” of Horizon 2020.</p> <p>PPPs are vehicles to implement technological roadmaps in particular areas and aim at leveraging private investment in Research and Innovation (R&I). They are implemented either through JTIs or through dedicated calls for proposals and topics (contractual PPPs). JTIs are implemented by the European Commission (EC) where the scope of the objectives pursued and the scale of the resources required justify it taking full account of the relevant impact assessments, and where other forms of partnerships would not fulfil the objectives or would not generate the necessary leverage. They are run as Joint Undertakings that organise their own research and innovation agenda and award funding for projects on the basis of open calls.</p>
Policy Context	<p>The EU has identified the need to improve its energy security, to balance its entire energy system and to reduce greenhouse gas emissions from its energy and transport sectors as a priority. Producing hydrogen using electricity generated from renewable sources, and using fuel cells that convert it back into electricity more efficiently than conventional technologies, can provide environmentally friendly solutions. But major technological and infrastructure barriers need to be overcome before fuel cells and hydrogen technologies can become mainstream. Europe must pool its private and public resources and expertise to exploit the untapped potential of these new technologies, which it does with the FCH2 JU.</p> <p>FCH2 is a new phase of the first Fuel Cells and Hydrogen Joint Undertaking (FCH JU) set up in 2008 to implement the FCH JTI. The FCH JU is the result of long-standing cooperation between representatives of industry, scientific community, public authorities, technology users and civil society in the context of the European Hydrogen and Fuel Cell Technology Platform. The platform was launched under the 6th Framework Programme for Research as a grouping of stakeholders, led by companies representing the entire supply chain for fuel cell and hydrogen energy technologies.</p>
Objective	<p>FCH 2 aims to:</p> <ul style="list-style-type: none"> • reduce the production cost of fuel cell systems to be used in transport applications, while increasing their lifetime to levels which can compete with conventional technologies, • increase the electrical efficiency and the durability of the different fuel cells used for power production to levels which can compete with conventional technologies, while reducing costs, • increase the energy efficiency of production of hydrogen mainly from

	<p>water electrolysis and renewable sources while reducing operating and capital costs, so that the combined system of the hydrogen production and the conversion using the fuel cell system can compete with the alternatives for electricity production available on the market;</p> <ul style="list-style-type: none"> • demonstrate on a large scale the feasibility of using hydrogen to support integration of renewable energy sources into the energy systems, including through its use as a competitive energy storage medium for electricity produced from renewable energy sources; • reduce the use of the EU defined 'Critical raw materials', for instance through low-platinum or platinum-free resources and through recycling or reducing or avoiding the use of rare earth elements better use of Europe's limited public research funds;
Management	<p>Managed by a dedicated JU. The JU establishes own strategic research agenda. The JU's governance comprises two executive and three advisory bodies. They are:</p> <ul style="list-style-type: none"> • the Governing Board (GB) comprising representatives of the EC, the Industry Grouping NEW-IG and the Research Grouping N.ERGHY- is the main decision-making body of the JTI. It takes strategic and funding decisions and supervises the implementation of its activities; • the Executive Director (ED) assisted by the Programme Office. The ED is the legal representative of the JU. He is appointed by the GB, from a list of candidates proposed by the EC, following an open and transparent selection procedure. Under the responsibility of the ED the Programme Office is responsible for the day-to-day management of JCH2 (e.g. organising calls for proposals, managing R&D agenda of JU) and the preparation of the (Multi) Annual Work-Programme; • the Scientific Committee is an independent advisory body to the GB. Its priorities are to advice on the R&D agenda and to evaluate the scientific achievements; • the States Representatives Group (SRG) consists of one representative of each Member State (MS) and of each country associated to Horizon 2020. It has an advisory role to the GB and the representatives act as an interface between the FCH2 JU and the relevant stakeholders within their respective countries. The SRG reviews information and provides opinions on programme progress in the FCH2 JU, compliance and respect of targets, coordination with national programmes and more; • the Stakeholder Forum has a formal advisory role to the GB and it is an important communication channel to ensure transparency and openness of the FCH2 JU's activities with its stakeholders. It is open to all public and private stakeholders, international interest groups from Member States, associated countries as well as from other countries.
Size of overall budget	<p>€1.3 billion. EC: €665 million, Industry: expected at least €665 million (will consist of both in-kind contributions in projects and complementary additional activities that promote the objectives of the initiative).</p>
Funding	<p>The FCH2 JU shall support indirect actions through open and competitive calls for proposals, and allocation of public funding within the limits of the budgets available.</p> <p>The Rules for Participation and Dissemination (RfP) of Horizon 2020 will apply. However, given a specific operational need of this initiative, a derogation from these rules is necessary.</p> <p>The reimbursement/funding rates differ with regard the different types of activities (derogation from normal Horizon 2020 RfP):</p> <ul style="list-style-type: none"> • Research and Innovation Actions: funding rate 100% • Innovation Actions: funding rate 70% (except for non-profit legal entities, where a rate of 100% applies) • Coordination and Support Actions: funding rate 100%
Eligible Countries/participants	<p>Any legal entity based in an EU MS or Associated Country (AC) and other not-industrialised third countries (see Annual Work Plan 2014, Annexes for the specific countries) can participate and will be funded in FCH2. Legal entities established in countries not listed in the Annex of the Work Plan will be eligible for funding <i>when such funding is explicitly foreseen</i> in the relevant call text. In addition, legal entities established in countries not</p>

	<p>listed above and international organisations will be eligible for funding:</p> <ul style="list-style-type: none"> • When funding for such participants is provided for under a bilateral scientific and technological agreement or any other arrangement between the EU and an international organisation or a third country; • When the EC deems participation of the entity essential for carrying out the action funded through Horizon 2020.
Beneficiaries	<ul style="list-style-type: none"> • large companies, European research and technology organisations, higher education research labs, and SMEs providing technology and services; • defined in the call for proposals and Annual Work Plan and its Annexes
Expected results	<ul style="list-style-type: none"> • reducing the cost of fuel cell systems for transport applications by a factor of 10; • increasing the electrical efficiency of fuel cells for power production by 10%; • demonstrating the viability of large scale hydrogen production with electricity generated from renewable energy sources; • a more stable and safer investment climate; • better coordination of research among stakeholders; • improved cross-fertilisation of knowledge; • leveraging private investments of at least the same amount as the EU funding; • Europe becomes more competitive and conquers new markets and creates new jobs.
Timeframe/Duration	2014-2024
Application procedure	<p>Proposal must be handed in by at least three legal entities. Each of the three shall be established in a different MS or AC. All three legal entities shall be independent of each other.</p> <ul style="list-style-type: none"> • Calls will be published on the Participant Portal.
Selection procedure	<p>Follow Horizon 2020 rules:</p> <ul style="list-style-type: none"> • Submitted in the electronic submission system before the deadline given in the call conditions; • the proposals must be in English and readable, accessible and printable; • a curriculum vitae or description of the profile of the persons who will be primarily responsible for carrying out the proposed research and/or innovation activities; • a list of up to five relevant publications, and/or products, services (including widely-used datasets or software), or other achievements relevant to the call content; • a list of up to five relevant previous projects or activities, connected to the subject of this proposal; • a description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work; • a description of any third parties that are not represented as project partners, but who will nonetheless be contributing towards the work (e.g. providing facilities, computing resources) <p>The projects will be selected through open and competitive calls for the proposals. The selection of the best proposals will be based on independent peer review and concluded by formal funding agreements.</p> <p>A small number of activities are implemented through calls for tender (i.e. public procurement).</p>
Offer/Activities supported	
Useful links	<p>http://www.fch-ju.eu/ http://www.new-ig.eu/ http://www.nerghy.eu/ http://ec.europa.eu/programmes/horizon2020/en/area/partnerships-industry-and-member-states</p>