

## Call for Expression of Interest for participation in IPCEI Hydrogen

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### Introduction

Hydrogen is a potentially significant energy carrier and industrial input factor in the low-emission society. [The Norwegian hydrogen strategy](#) stated that hydrogen can contribute to the reduction of climate gas emissions, to value creation for Norwegian businesses and industry, and that Norway is well positioned to develop and use hydrogen solutions. Development of markets and value chains for hydrogen use and production are necessary steps towards realizing zero emissions in the transport and industrial sectors in particular and may be one of several solutions for the future energy system. For hydrogen to move from being a potential solution to being mature in the market, both technology and cost development must take place.

Development of hydrogen technology and markets is a priority in several countries in Europe. As a result, a so-called IPCEI (Important Project of Common European Interest) is being established to accelerate this development. Norway has joined the IPCEI initiative for hydrogen, and Enova manages the Norwegian participation. Norwegian participation in IPCEI for hydrogen means that owners of hydrogen projects in Norway can link their project to other projects and value chains in Norway and in the EU and benefit from possible knowledge transfer, market size and other economies of scale.

Enova is now conducting a call for expression of interest in Norway for participation in IPCEI Hydrogen. The deadline for expressing interest is February 1<sup>st</sup> 2021 at 12:00. It is mandatory to express interest now to be considered for participation.

### **IPCEI is a European collaborative effort to strengthen strategically important and future-oriented industry sectors**

In short, IPCEI is a mechanism for promoting investments in cross-border R&D and industrial projects of particular importance for European development and which can receive state aid as long as the conditions under the [IPCEI Guidelines](#) are met. IPCEIs are large innovation projects that often involve a great deal of risk, and which require a coordinated effort and cross-border investments from public authorities and industries in several member states in order to be realised. They are particularly aimed at new industrial areas that are not realised due to various barriers (market failures).

The European Commission seeks to encourage several so-called industry alliances where investors, industry and the public sector work together to finance large-scale projects with positive spill-over effects for the whole of Europe. The IPCEI mechanism is an important tool towards establishing such alliances. The EU's expert group for Important Projects of Common European Interest has identified six future-oriented industrial sectors that should be prioritised in the EU's upcoming industrial strategy. Hydrogen technology and -systems is one of these six.

The goal of a European IPCEI on hydrogen is to boost European technological leadership in hydrogen, to allow European companies to take the lead in the emerging markets for hydrogen, and to build a European framework for the emergence of hydrogen value chains. At the same time, the goal is a significant contribution to reducing greenhouse gas emissions and facilitating the integration of an increasing share of renewable energy in the individual countries and Europe as a whole, in line with the EU's and the individual countries' hydrogen strategies.

Although IPCEI projects are European projects, the process starts nationally, and national funds are used in each country. Each country intending to participate conducts a call for expression of national interest to participate in the IPCEI qualification process. This is done through an open process (often called Call of Interest (CoI) or Expression of Interest (EoI)), with selection criteria for which projects are allowed and which types of projects will be prioritised nationally. Then a so-called matchmaking is done to link nationally prioritised projects with European projects, where it is decided which projects qualify as IPCEI. Following this, a joint notification process is carried out to the EU Commission / ESA to obtain approval for necessary state aid.

## **Purpose of the Call for Expression of Interest**

As a first step in the process, in order to qualify specific Norwegian projects for participation in IPCEI Hydrogen, Enova is now conducting a call for expression of interest. The purpose of the call is to establish an overview of interested parties with relevant and sufficiently mature projects that can be included as Norway's contribution to a joint European IPCEI project for the development of the hydrogen value chain.

Expression of Interest is non-binding on the part of the interested parties, and Enova does not grant aid to projects through this call. As part of the further process, the highest-ranked projects after the evaluation process will be invited to so-called "matchmaking" to connect to IPCEI projects from other countries. In order to qualify for participation under the IPCEI mechanism, it is mandatory to register one's interest through this call.

All information submitted will be treated confidentially by Enova. However, projects that are invited to participate in the matchmaking process will need to share sufficient information to make it possible to link projects and initiatives with European ones. The interested parties will then have the opportunity to approve the information that must be shared.

## **Relevant projects**

Common to all IPCEI projects is that they must entail significant innovation beyond the "state of the art" in the relevant sector and the general development, and the projects must be of relevance for collaboration with other European projects under the IPCEI superstructure.

The Norwegian call for expression of interest also emphasises that the projects must *make a significant contribution to reducing greenhouse gas emissions*. The call thus requests projects that:

- Will make a significant contribution to the technology front in the hydrogen field
- Will develop and demonstrate technology that both cuts greenhouse gas emissions now and can provide significant further cuts in greenhouse gas emissions when the technology is implemented nationally and internationally.

Focus areas for the Norwegian call for expression of interest are climate-friendly and innovative hydrogen technologies in industry and in the transport sector.

### **Priority Thematic Areas**

Projects must fall within one or more of the three thematic areas:

- Use of hydrogen as an emission-free fuel in the transport sector
- Use of hydrogen to reduce CO<sub>2</sub> emissions in the industry sector
- Production of hydrogen

It is a prerequisite that the hydrogen is produced with zero or very low emissions (hereinafter referred to as clean hydrogen). Both hydrogen in compressed and liquid form, as well as other clean hydrogen carriers such as ammonia or LOHC, are eligible. Projects may also include the transport and storage of hydrogen, as well as hydrogen infrastructure, provided that this is related to one or more of the thematic areas above.

### **Delimitations**

Relevant projects for participation in the IPCEI on hydrogen must fall within the following delimitations:

- For projects where the primary purpose is to produce products/chemicals from hydrogen in combination with CO<sub>2</sub>, so-called CCU, only the part related to innovative hydrogen production is eligible
- Projects that primarily concern the roll-out / construction of infrastructure are not eligible

### **Qualification criteria**

The project must make a significant contribution towards a common European interest. Guidelines can be found in Chapter 3 «Eligibility criteria» in the [IPCEI Guidelines](#).

The project may entail:

- First Industrial Deployment (FID) of highly innovative technology
- Innovative investments that reduce greenhouse gas emissions (Environment, energy and transport projects, EET)
- Research and development of a very innovative nature, which clearly goes beyond the «state of the art» in the relevant sector

In order to emphasise the innovative nature of the projects, it is expected that the projects have a significant element of research and development related to the realisation of the FID/EET investment. It is a requirement that the research has a significant degree of innovation, including significant technological and financial risk. Projects comprising research and development only, i.e. without significant elements of FID or EET investments, are not eligible under the call.

For projects involving First Industrial Deployment (FID):

- Projects comprising of industrial deployment must allow for the development of a new product or service with high research and innovation content and/or the deployment of a fundamentally innovative production process. Regular upgrades without an innovative dimension of existing facilities and the development of newer versions of existing products do not qualify as IPCEI

For projects involving investments in climate and energy technology or transport projects (EET):

- Environmental, energy or transport projects must either be of great importance for the environmental, energy, including security of energy supply, or transport strategy of the Union or contribute significantly to the internal market, including, but not limited to those specific sectors

Please see also the [IPCEI Guidelines](#). Note specifically chapter 4.1 point (28) and footnote (22) in the Guidelines about the incentive effect: "The aid application must precede the starts of the works, which is either the start of construction works on the investment or the first firm commitment to order equipment or other commitment that makes the investment irreversible, whichever is the first in time. Buying of land and preparatory works such as obtaining permits and conducting preliminary feasibility studies are not considered as start of works."

## **Selection criteria**

All submitted projects will be evaluated and ranked according to the following criteria:

1. Relevance to Europe, EU / EEA countries' national energy and climate plans / strategies and EU and European hydrogen strategies
2. Degree of innovation, i.e. how significant the innovation is compared to the state of the art in the relevant sector. Co-financing from European schemes such as the ETS Innovation Fund will count positively in the assessment
3. Cost-effectiveness, i.e. high ambitions for reduced greenhouse gas emissions, relative to the necessary amount of state aid
4. Expected ripple and spill-over effects from the project, including realistic market potential for further implementation of the technology in Norway, Europe and globally
5. The interested parties' financial and technical ability to carry out the project, including competence within the various technological areas in the project

Projects will be scored on all criteria on a scale from 1 to 6, where 6 is the highest score. Projects that do not reach the threshold value of 3 for one or more of the criteria will be excluded from further evaluation.

The selection criteria will be given equal weight. In case of identical evaluation scores, projects with higher scores on criteria 1 and 2 will be given priority.

State aid for Norwegian IPCEI projects will be granted under Enova's existing mandate and financial limits. IPCEI projects thus compete for funding with other projects that involve new climate technologies. Projects that require higher amounts of state aid than Enova can prioritise within available financial limits may be rejected.

## **Selection process**

### **Who can express interest?**

Companies that are registered in the Norwegian Business Register (or which will be before any assessment of financing is carried out) and that want to participate in innovative projects on a European scale through various partnerships throughout the European economic value chain can express interest in this call. It is a prerequisite that the project for which interest is expressed must be carried out in Norway or on Norwegian territory. For projects that include the use of hydrogen as fuel in the maritime sector, ships must be registered under Norwegian flag.

The interested party can be a single company or a consortium. When a consortium stands behind the project, a single party must be the contracting party towards Enova.

Note that all requirements for receiving state aid must be met. This also applies to all participants in a possible consortium. See the IPCEI Guidelines, Chapter 2 (10) for more information. The document «1. Informasjon og generelle krav» also provides guidance on requirements in order to receive state aid. In the event of a conflict, the IPCEI Guidelines apply.

## How to express interest

Interested parties must submit an electronic application through Enova's electronic application portal by the deadline for expressing interest. The following must be attached:

- Project description according to the provided template, in English
- Net present value calculation of the project (according to the provided template), including an overview of eligible costs and an estimate of the need for public support (financing gap or "funding gap")

Templates for project description and net present value calculation are available on [www.enova.no/ipcei](http://www.enova.no/ipcei). Further specifications or relevant information can be added as attachments to the electronic application, if necessary.

Submitted material is not an application for aid. It is nevertheless necessary that sufficient information is submitted so that Enova can make an assessment of the project, the funding gap and the potential effect on greenhouse gas emissions and on European collaboration. In the call for expression of interest, the financing gap will be seen as an estimate of the need for state aid. Projects will be required to submit additional information and documentation if it is relevant to assess aid from Enova. However, interested parties are asked to describe the financing gap as accurately as possible, and to substantiate as much as possible with documentation. Projects that do not attach a net present value analysis will be rejected.

## Time Schedule

Submitted projects will be assessed against the qualification criteria in the call. Qualified projects will be ranked according to the above selection criteria. The highest-ranked projects can be invited to further participate in the process, and to join the "matchmaking" with the selected projects from the other countries in IPCEI Hydrogen. Assessment of aid from Enova will be done after the matchmaking process.

Subject to change, the preliminary schedule for the work with IPCEI Hydrogen is as follows:

- Opening of the electronic registration form in Enova's electronic application portal: no later than January 15<sup>th</sup> 2021
- Deadline for registering national interest: February 1<sup>st</sup> 2021, 12:00
- Match-making: February / March 2021
- Assessment of support for the individual projects: Q1 / Q2 2021
- Start-up notification process: Q2 2021
- Earliest start of projects: 2022

## Which costs are eligible in an IPCEI project?

Eligible costs can be found in the Annex section of the IPCEI Guidelines.

For the R&D and FID part of the project, this is similar to the calculation method shown in the document «2 Virkemiddel FoU-støtte». For investments that provide a direct environmental benefit, the additional cost of the innovative, environmentally friendly investment as compared with a similar, non-innovative investment (the counterfactual scenario) is used. This is similar to the calculation method shown in the document «2 Virkemiddel Investeringsstøtte». In the event of conflict, the Annex in the IPCEI guidelines applies.

Note that the aid must not subsidise the costs of a project that anyhow would incur and must not compensate for the normal business risk of an economic activity.

## Financing

Enova's management of the Norwegian IPCEI participation shall be in line with the framework, goals and priorities in Enova's four-year management agreement with the Norwegian Ministry of Climate and the Environment. There is no specific allocation of funds for financing IPCEI projects, and projects that qualify under IPCEI will thus compete for funding with other climate technology projects applying to Enova. Any decision on and scope of aid will be made at a later stage.

Any aid from Enova will be awarded per participant and per project. The maximum amount of aid per participant and per project will be determined on the basis of the identified funding gap compared to the eligible costs. If justified by the funding gap analysis, the aid intensity could reach up to 100 % of the eligible costs. The funding gap refers to the difference between the positive and negative cash flows over the lifetime of the investment, discounted to their current value on the basis of an appropriate discount factor reflecting the rate of return necessary for the beneficiary to carry out the project, notably in view of the risks involved. If the participant cannot justify and document the required rate of return, Enova will use the average rate of return of the relevant industry as a basis for the calculations. Aid will be provided as a grant, with or without repayment clauses. Aid may be lower than the maximum allowed.

This call for expression of interest is aimed at projects in the last phase of technology development and the phase of first-time market introduction. It is thus expected that projects must have significant own-financing from the participants.

Note that a grant may not be a price subsidy or operating grant in any case. It is i.e. not the purpose to subsidise the purchase price of pure hydrogen. IPCEI is not intended for providing continuous aid over an extended period of time.