

IPCEI Hydrogen

Webinar

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Agenda

Introduction

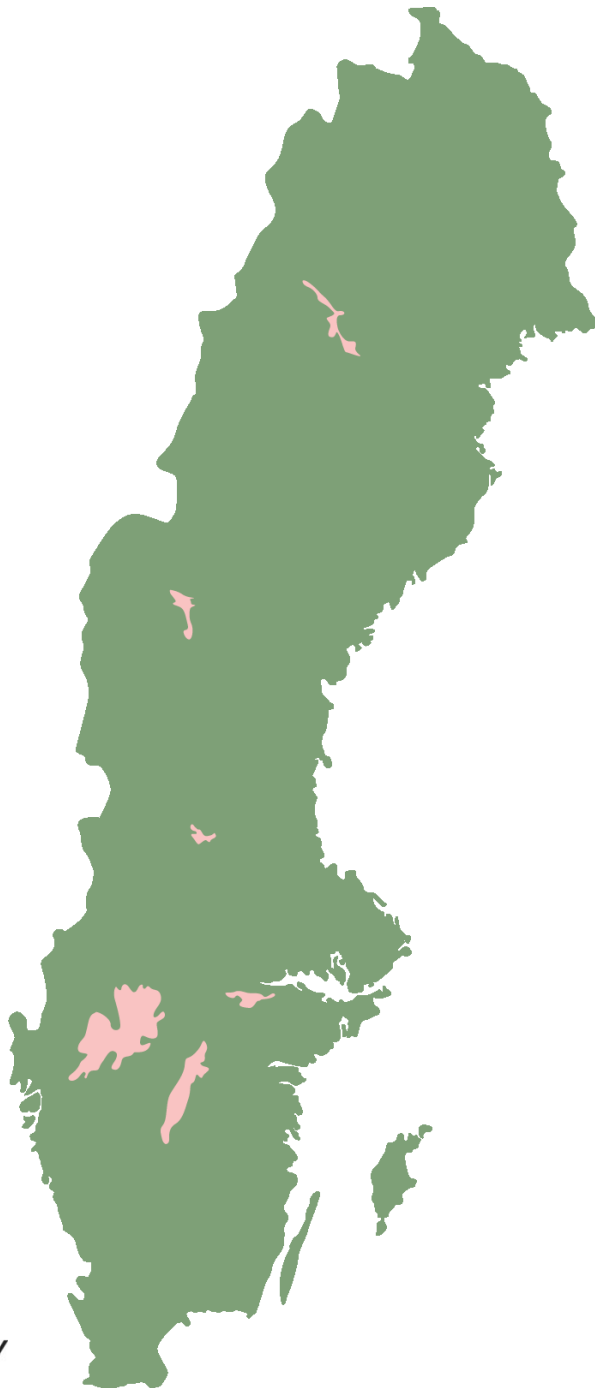
- Practicalities
- What is an IPCEI?

IPCEI Hydrogen in Sweden

- Timeline and process
- Call for Expression of Interest
- Relevant projects
- Qualification and selection criteria
- Who can express interest
- Eligible costs

Other funding opportunities for Hydrogen projects

Q&A



Practicalities

- To be made available on <http://www.energimyndigheten.se/forskning-och-innovation/forskning/omraden-for-forskning/internationella-insatser/ipcei-vatgas/>:
 - This presentation
 - Recording of the webinar
 - How to Express Interest – template for the First stage
 - Templates for the project description and budget – mandatory for the Second stage
- Questions can be submitted in the webinar chat or to anmalanIPCEIH2@energimyndigheten.se

Introduction

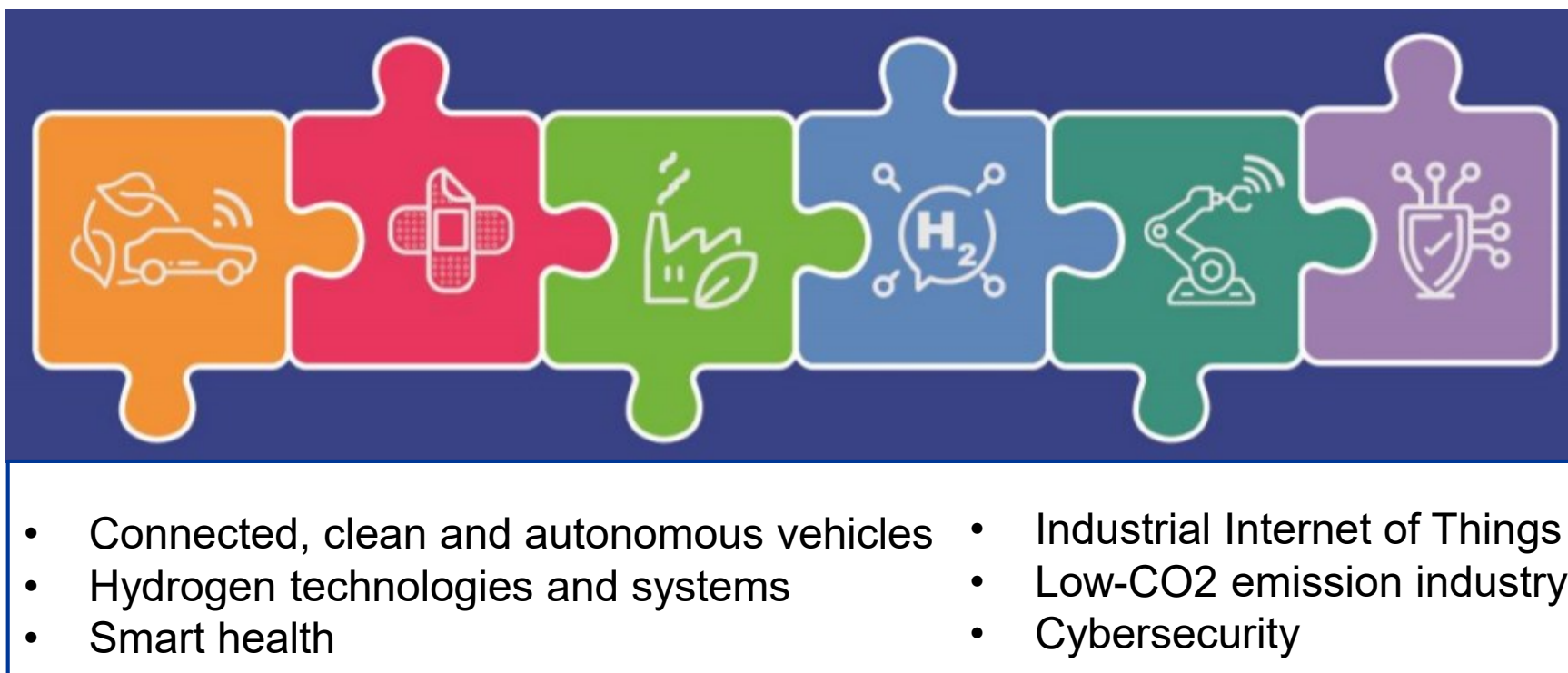
- Purpose of the call:

Establish an overview of interested parties with relevant and sufficiently mature projects that can be included as the Swedish contribution to a joint European IPCEI project for the development of the hydrogen value chain.

- Expression of Interest is non-binding for the interested parties, and the Swedish Energy Agency does not grant aid to projects through this call.
- It is mandatory to express interest to be considered for participation in IPCEI Hydrogen in Sweden.

IPCEI – Important Projects of Common European Interest

- IPCEIs are large innovation projects that 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 EU Commission (DG GROWTH) has set up a Strategic Forum for Important Projects of Common European Interest (IPCEI). They have identified six key strategic value chains. IPCEI is a highly relevant instrument for strengthening these value chains.



Previous IPCEIs - examples

IPCEI on Microelectronics

29 direct participants from 4 countries

Up to approx. € 1.75 bn. state aid

Large number of external partners

Leveraging € 6 bn. private investments

1 Energy efficient chips	2 Power semiconductors	3 Sensors	4 Advanced optical equipment	5 Compound materials
CEA-Leti	3-D Micromac	CEA-Leti	AMTC	AZUR Space Solar Power
Cologne Chip	AP&S International	CorTec	Carl Zeiss	CEA-Leti
Globalfoundries	CEA-Leti	Elmos Semiconductors		Integrated Compound Semiconductors
Racy/CS	Elmos Semiconductors	Fondazione Bruno Kessler		IQE
Soitec	Infineon	Infineon		Newport Wafer Fab
ST Microelectronics	MURATA	Robert Bosch		SPTS Technologies
X-FAB	Robert Bosch	ST Microelectronics		OSRAM
	<i>SEMIKRON</i>	TDK-Micronas		Sofradir
	ST Microelectronics	ULIS		Soitec
	X-FAB	X-FAB		ST Microelectronics

Name in "italic" = SME

Second IPCEI on Batteries

42 direct participants from 12 countries

Up to approx. € 2.9 bn. state aid

Large number of external partners

Leveraging € 9 bn. private investments

Raw and advanced materials	Battery cells	Battery systems	Recycling and sustainability
ACIS	Alumina Systems	ACIS	Borealis
Arkema	BMW	Alumina Systems	Enel X
Borealis	Cellforce Group	AVL	Engitec
Ferroglobe	ErlingKlinger	BMW	FIAMM
Fluorsid	FCA	Endurance	Fortum
Green Energy Storage	Green Energy Storage	Enel X	Hydrometal
Hydrometal	InoBat Auto	Energio Aqua	Italmatch Chemicals
Italmatch Chemicals	Manz	FCA	Keliber
Keliber	Midac	FIAMM	Liofit
Prayon	Northvolt	FPT Industrial	Little Electric Cars
SGL Carbon	SGL Carbon	Green Energy Storage	Midac
Solvay	Skeleton Technologies	InoBat Energy	SGL Carbon
Tokai Carbon Group	Sunlight Systems	Manz	Tesla
VARTA Micro Innovation	Tesla	Miba eMobility	Valmet Automotive
	VARTA Micro Innovation	Midac	ZTS VaV
		Rimac Automobili	
		Rosendahl Nextrom	
		Skeleton Technologies	
		Sunlight Systems	
		Tesla	
		Valmet Automotive	
		Vollabor	

23 European nations launch IPCEI Hydrogen

- The Kingdom of Belgium
- the Republic of Bulgaria
- the Czech Republic
- the Kingdom of Denmark
- the Federal Republic of Germany
- the Republic of Estonia
- the Hellenic Republic
- the Kingdom of Spain
- the French Republic
- the Republic of Croatia
- the Italian Republic
- the Grand Duchy of Luxembourg
- the Republic of Hungary
- the Kingdom of the Netherlands
- the Kingdom of Norway
- the Republic of Austria
- the Republic of Poland
- the Portuguese Republic
- Romania
- the Republic of Slovenia
- the Slovak Republic
- the Republic of Finland
- the Kingdom of Sweden



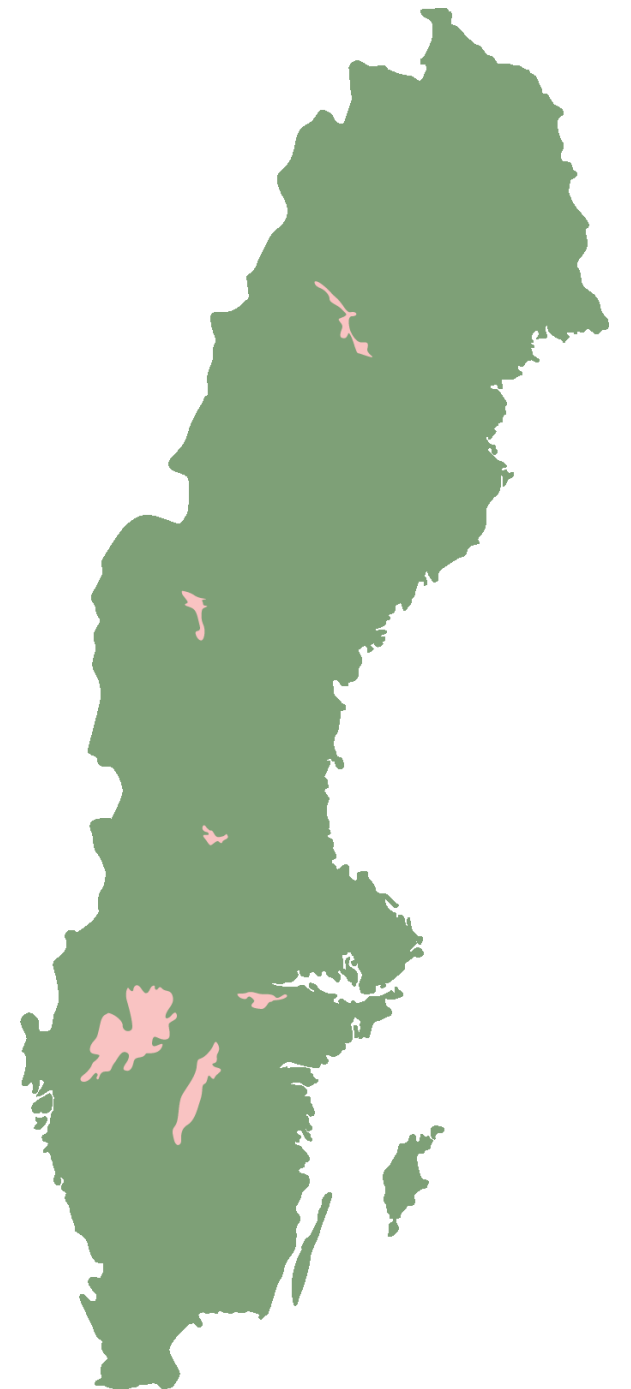
IPCEI Hydrogen - Sweden

The Swedish Energy Agency manages the Swedish participation:

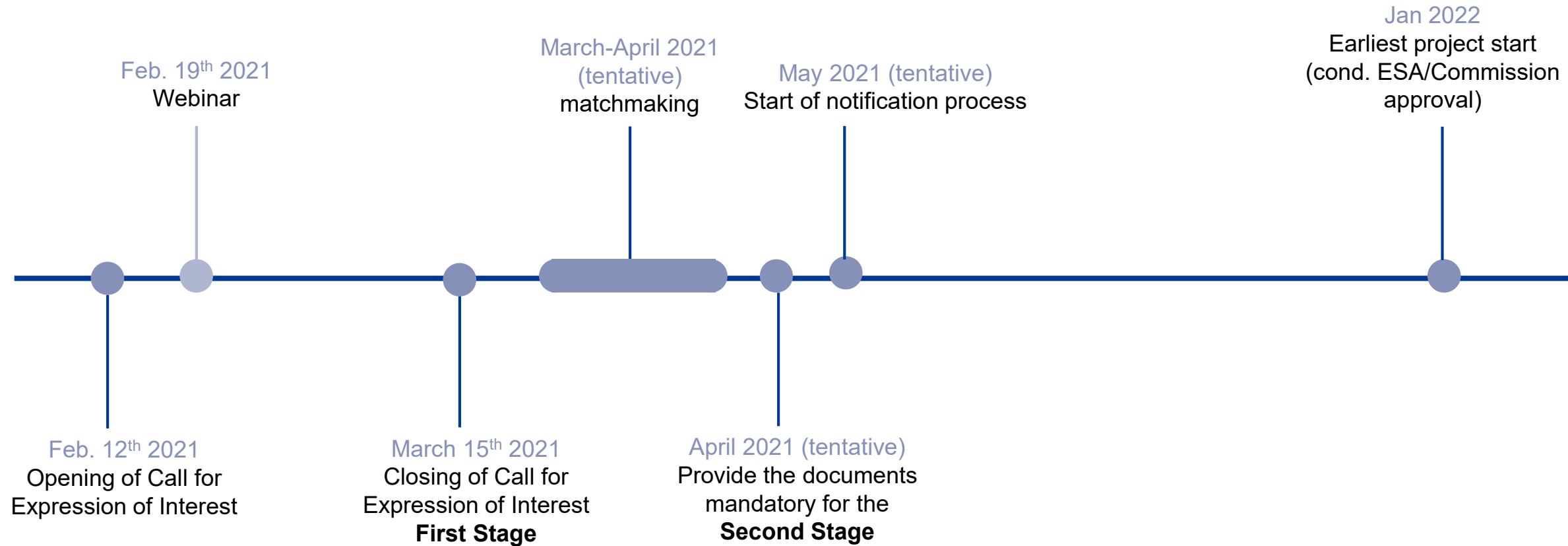
- Responsible for disseminating information and coordinating the application process
- Responsible for inviting companies planning projects in Sweden to register an Expression of Interest

For all IPCEI-projects in Sweden:

- Link Swedish projects to projects in the EU – where mutually beneficial
- Goal of a significant contribution to reducing greenhouse gas emissions



Timeline and process



Swedish Call for Expression of Interest

- Open from Feb. 12th 2021 to March 15th 2021 12:00, Stockholm Time
- Submission to the Swedish Energy Agency at [anmalanIPCEIH2@energimyndigh](mailto:anmalanIPCEIH2@energimyndigh.se)
- The expression of interest should follow the headlines and instructions on the we for the First Stage
[forsta-steget---intressesanmalan-ipcei-vatgas.pdf \(energimyndigheten.se\)](https://www.energimyndigheten.se/forsta-steget---intressesanmalan-ipcei-vatgas.pdf)
- All Call documents and submission form can be found at
<http://www.energimyndigheten.se/forskning-och-innovation/forskning/omraden-fo-forskning/internationella-insatser/ipcei-vatgas/>

The First Stage

- Company presentation
- Market description
- Project description
- Contribution to IPCEI hydrogen
- Financing

(20 page limit)

A commitment from company to provide the documents mandatory for the Second stage

A full description of the information to submit in the first stage is to be found on the Swedish Energy Agency's website

[forsta-steget---intressesanmalan-ipcei-vatgas.pdf](https://www.energimyndigheten.se/forsta-steget---intressesanmalan-ipcei-vatgas.pdf)
([energimyndigheten.se](https://www.energimyndigheten.se))

The Second Stage

Documents mandatory for the second stage:

- Detailed description of the proposed project
- Detailed description of costs and identified funding gap justifying state-aid

Templates are available at [Energimyndigheten.se](http://energimyndigheten.se)

<http://www.energimyndigheten.se/forskning-och-innovation/forskning/omraden-for-forskning/internationella-insatser/ipcei-vatgas/>

Relevant projects

Innovation

Significant innovation beyond the "state of the art" in the relevant field

Collaboration

The project must be clearly improved through cooperation with other European projects

Projects must make a **significant contribution to reducing greenhouse gas emissions**. Projects must:

- 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.

Relevant projects – Swedish Call of Interest

Example of project areas:

- hydrogen production and conversion (including chemicals)
- use of hydrogen in industry
- use of hydrogen for transport
- storage of hydrogen



Qualification criteria



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

Prerequisites:

- All projects must include a significant element of research and development related to the realisation of the FID/EET investment.
- Projects comprising research and development only, i.e. without significant elements of FID or EET investments, are not eligible

Guidelines for the analysis of the compatibility with the functioning of the EEA
Agreement of state aid to promote the execution of important projects of common
European interest¹

CONSOLIDATED VERSION*

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*Consolidated version including amendments introduced by Decision 090/20/COL (see paragraphs 10(a) and 50). The amendments are shown in italicized text.
This document is meant purely as a documentation tool and the Authority does not assume any liability for its contents. It is without prejudice to the official text as published in the Official Journal.

¹ These guidelines correspond to the European Commission's communication on criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest, published 20 June 2014 (OJ C 188, 20.6.2014, p. 4-12).

15 July 2020

Specific State Aid Guidelines for IPCEIs

Note e.g. [IPCEI consolidated Guidelines](#), ch. 3.2.3:

21: **R&D&I projects** must be of a *major innovative nature or constitute an important added value in terms of R&D&I in light of the state of the art in the sector concerned.*

22: 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.

23. **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.*

Generally: only activities related to development, demonstration and/or realization of the innovations are eligible.

Selection criteria

All submitted projects will be evaluated 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 Sweden, 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



Who can express interest?

Eligibility criteria

- Companies must be registered in the Swedish Companies Registration Office (or must be at the latest before any assessment of financing is carried out)
- The interested party can be a single company or a consortium
- The project must be carried out in Sweden or on Swedish territory

Eligible costs

Take part of the full text here:

[IPCEI consolidated Guidelines](#), p.10



ELIGIBLE COSTS

- (a) Feasibility studies, including preparatory technical studies, and the costs of obtaining the permissions necessary for the realisation of the project.
- (b) Costs of instruments and equipment (including installations and transport vehicles) to the extent and for the period used for the project. If such instruments and equipment are not used for their full life for the project, only the depreciation costs corresponding to the life of the project, as calculated on the basis of good accounting practice, are considered as eligible.
- (c) Costs of the acquisition (or construction) of buildings, infrastructure and land, to the extent and for the period used for the project. Where these costs are determined with regard to the commercial transfer value or the actually incurred capital costs, as opposed to the depreciation costs, the residual value of the land, building or infrastructure should be deducted from the funding gap, either *ex ante* or *ex post*.
- (d) Costs of other materials, supplies and similar products necessary for the project.
- (e) Costs for obtaining, validating and defending patents and other intangible assets. Costs of contractual research, knowledge and patents bought or licensed from outside sources at arm's length conditions, as well as costs of consultancy and equivalent services used exclusively for the project.
- (f) Personnel and administrative costs (including overheads) directly incurred for the R&D&I activities, including those R&D&I activities related to first industrial deployment³¹, or in the case of an infrastructure project, incurred during the construction of the infrastructure.
- (g) In case of aid to a project of first industrial deployment, the capital and operating expenditures (CAPEX and OPEX), as long as the industrial deployment follows on from an R&D&I activity³² and itself contains a very important R&D&I component which constitutes an integral and necessary element for the successful implementation of the project. The operating expenditures must be related to such component of the project.
- (h) Other costs may be accepted if justified, and where they are inextricably linked to the realisation of the project, to the exclusion of operating costs not covered by point (g).

³¹ First industrial deployment refers to the upscaling of pilot facilities, or to the first-in-kind equipment and facilities which cover the steps subsequent to the pilot line including the testing phase, but neither mass production nor commercial activities.

³² The first industrial deployment does not need to be carried out by the same entity that carried out the R&D&I activity, as long as the former acquires the rights to use the results from the previous R&D&I activity, and the R&D&I activity and the first industrial deployment are both covered by the project and

Other funding opportunities for hydrogen projects

- a few examples

- Industriklivet
- Programmet Pilot och demonstration



Industriklivet



Industriklivet

- Regeringsuppdrag, långsiktig satsning 2018-2040
- Tekniksprång måste göras, nettonollutsläpp 2045
- Tre områden
 - Industrins utsläpp av växthusgaser
 - Permanenta negativa utsläpp
 - Strategiskt viktiga insatser inom industrin som bidrar till samhällets klimatomställning

www.energimyndigheten.se/industriklivet

Industriklivet i siffror (2018 - 2020)

- 149 (62) ansökningar, 1,8 miljarder (301 Mkr)
- 57 (26) beviljade projekt, 931 Mkr
 - 860 Mkr processrelaterade och 71 Mkr negativa utsläpp
- Samfinansiering ca 2,1 miljarder kronor
- Järn- och stål, cement, raff, kemi, kraftvärme, massa och papper
- Hittills huvudsakliga teknikspår: biomassa, CCS, elektrifiering och vätgas

Breddning 2021

- **Andra växthusgasutsläpp** så som vissa förbränningsutsläpp och diffusa utsläpp **kopplade till processrelaterade utsläpp**
- **Strategiskt viktiga insatser** inom industrin som bidrar till klimatomställningen
 - Batteriproduktion
 - Biodrivmedel
 - Plastreturraffinaderi
 - Vätgasproduktion
 - Återvinningsanläggningar
- Knyter an till strategin för cirkulär ekonomi

Pilot och demonstration

Utlysning 2020

Programmet Pilot och demonstration

Stödjer nya innovativa produkter, processer, tjänster eller systemlösningar

- Produkt- eller prototypdemonstrationer
- Produktionsdemonstration
- Systemdemonstration

Projekten ska bidra till utvecklingen mot ett ekonomiskt och miljömässigt hållbart energisystem för alla med fokus på områden som har förutsättningar för tillväxt och export

Bred ansats över hela samhället:

- en resurseffektiv bebyggelse för ett hållbart samhälle
- en konkurrenskraftig och hållbar svensk industri
- hållbara transporter i ett jämlikt och tillgängligt samhälle
- ett förnybart elsystem för en hållbar klimatomställning
- hållbar bioenergi från samhällets restströmmar
- att människor och samhällen driver energiomställningar

Programmet omfattar 248 MSEK i avsatta medel varav 1

Q&A

Thank you for your attention!

anmalanIPCEIH2@energimyndigheten.se