



EUROPEAN CLUSTER
COLLABORATION PLATFORM

Country factsheet

Denmark

An initiative of the European Union





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Introduction



This document presents an overview of the cluster policy in Denmark. Given its importance to contextualise the cluster policies (and related) analysed in the factsheets, a comprehensive outlook of the country in socioeconomic terms can be consulted in the [European Semester Country Report for Denmark](#).



The European Semester was an instrument introduced to coordinate the EU Member States economic policies and address the economic challenges faced by the EU. Its goals are "to ensure sound public finances, to prevent excessive macroeconomic imbalances in the EU, to support structural reforms to create more jobs and growth, and to boost investment". Thus, it focuses on the following areas: business environment; financial and fiscal stability; green economy; public administration; labour market and skills; and, social protection and cohesion.

The COVID-19 pandemic has caused an unprecedented economic shock to the European and global economy. In response, policymakers at EU and national level have acted decisively and at short notice to make available very significant financial resources, notably through the Recovery and Resilience Facility, to tackle the threat of a prolonged downturn. [National recovery and resilience plans](#) have been drafted in each Member State to ensure a recovery that addresses the challenges identified in the European Semester. In Denmark, clusters have acted as a partner in drafting the plan and setting the strategic priorities although they are not directly mentioned in the National recovery and resilience plan.

01

Industrial ecosystems and cluster landscape



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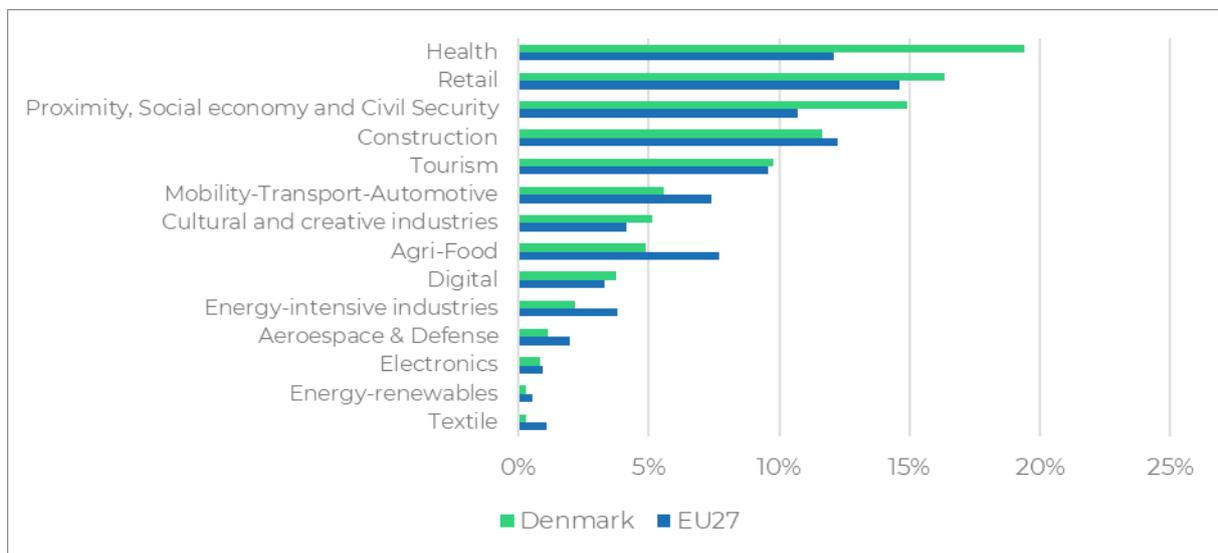


1. Industrial ecosystems and cluster landscape

Employment in the 14 ecosystems in the country

As part of its Industrial Strategy (March 2020), the European Commission has selected 14 industrial ecosystems that are particularly relevant in Europe and encompass all players operating in a value chain. The following graph shows the proportion of the country's employment accounted for by each ecosystem, as well as the equivalent figure for the EU27 on average. The ecosystems are ordered, from top to bottom, according to the amount of employment in the country. When the bar for the country is higher than that of the EU27, it indicates that the country is more specialised in that ecosystem.

Graph 1: Employment in the ecosystems



Source: Own elaboration from Eurostat and National Statistical Offices



Regionally relevant nodes

Economic activity, and therefore employment, is not equally distributed in all regions. Specialisation can be measured through Location Quotients (LQ) that reflect the relative specialisation of an activity in a region compared to the EU average. If the LQ for a given activity-region combination is above 1.5, it is considered a specialisation node, and if the activity accounts for at least 1 % of total employment in the region, it is considered regionally relevant. The following tables shows the total number of regionally relevant specialisation nodes in each region in the country and identifies the top five most specialised of these nodes. The first table focuses on the 88 NACE 2-digit activities or sectors, totalling 31 in the country, while the second table is based on the 14 ecosystems, which total 8 in the country.

Table 1: Regionally relevant sectoral nodes

Region	Number of nodes	Node 1	Node 2	Node 3	Node 4	Node 5
DK01: Capital (region)	12	H50 - Water transport	C21 - Manuf. of pharmaceuticals	R91 - Libraries, museums, other culture	J58 - Publishing activities	K65 - Insurance, pension funding
DK02: Zealand	4	C21 - Manuf. of pharmaceuticals	Q88 - Social work without accommodation	Q87 - Residential care	F43 - Specialised construction act.	
DK03: South Denmark	5	Q88 - Social work without accommodation	Q87 - Residential care	C28 - Manuf. of machinery & equipment	R93 - Sports, amusement, recreation	H53 - Postal & courier activities
DK04: Central Jutland	5	C21 - Manuf. of pharmaceuticals	Q88 - Social work without accommodation	Q87 - Residential care	C28 - Manuf. of machinery & equipment	R93 - Sports, amusement, recreation
DK05: North Jutland	5	C21 - Manuf. of pharmaceuticals	Q87 - Residential care	Q88 - Social work without accommodation	F43 - Specialised construction act.	C28 - Manuf. of machinery & equipment

Source: Own elaboration from Eurostat and National Statistical Offices

Table 2: Regionally relevant ecosystem nodes

Region	Number of nodes	Node 1	Node 2	Node 3
DK01: Capital (region)	3	Digital	Cultural and creative industries	Health
DK02: Zealand	2	Health	Proximity, Social economy and Civil Security	-
DK03: South Denmark	1	Health	-	-
DK04: Central Jutland	1	Health	-	-
DK05: North Jutland	1	Health	-	-

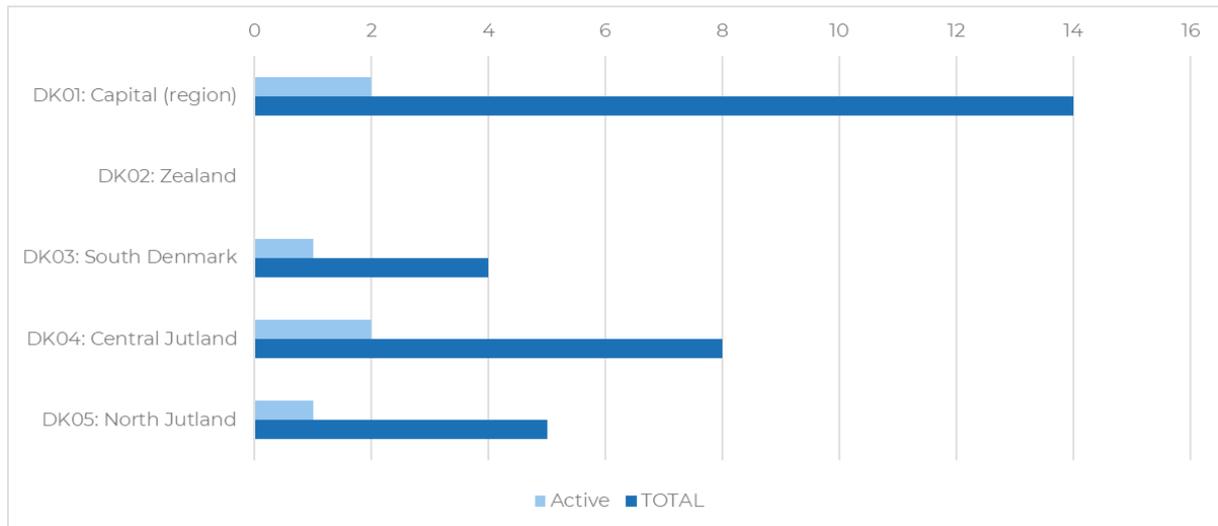
Source: Own elaboration from Eurostat and National Statistical Offices



Cluster organisations in the regions

There are 31 cluster organisations registered on the ECCP in the country, 6 of which can be considered active on the ECCP, having updated their profiles during the first half of 2021. The following graph shows the presence of cluster organisations in the different regions.

Graph 2: Cluster organisations profiled and active on the ECCP



Source: Own elaboration from Eurostat and National Statistical Offices

02

National cluster policy, programmes and initiatives





2. National cluster policy, programmes and initiatives

Policy type:	National cluster programme
Policy name:	Power of innovation-Danish clusters for knowledge and business 2021- 2024 (Innovationskraft Danske klynger for viden og erhverv)
<p>POLICY OBJECTIVES</p> 	<p>Achieving a simple and clear cluster effort based on consolidated and professional cluster organizations</p> <p>Strengthening the innovative power of Danish companies within Denmark's strongest and most promising business and technology areas</p> <p>Supporting cross-border innovation cooperation</p> <p>Increasing competitiveness and boosting scale up of SMEs</p> <p>Supporting internationalisation activities</p> <p>Enhancing the visibility of clusters</p> <p>Fostering R&D activities, technology development and implementation</p> <p>Contributing to the transition to a more green and climate-friendly production</p> <p>Fostering innovation and strengthening innovation ecosystems in their respective business and technology areas</p> <p>Supporting cluster excellence and professionalisation of cluster management</p> <p>Supporting the consolidation of existing cluster organisations</p> <p>Promoting social and sustainable economy and other solidarity-based initiatives</p> <p>Strengthening the network of cluster organisations/cross-clustering</p> <p>Connect to global supply chains</p> <p>The purpose of the cluster program is to strengthen corporate and in particular SMEs - productivity and competitiveness through cooperation on innovation and the transfer of knowledge between companies and knowledge institutions, including approved technological service institutes (GTSs), as well as other actors in the relevant business and technology areas. The future cluster organizations must be a driving</p>



	<p>force and support world-class innovation within their entire respective ecosystem, which in addition to companies and knowledge institutions includes, for example, public actors, investors and entrepreneurial environments.</p> <p>In order to fulfill the purpose, new knowledge must be applied to companies throughout the country and link relevant research and development. This can be done through innovation-promoting activities, so that companies are equipped to seize new opportunities and deal with challenges related to new opportunities, needs and conditions in markets abroad and at home. This applies not least in relation to increased digitalisation, the radical green transition and the shift to more sustainability in production and society in general, which are therefore expected to be included as central themes in all the clusters. In addition, topics such as materials, smart city and design methods, which are relevant to several business and technology areas, and where it will be relevant for the cluster organizations in question to collaborate with existing actors and professional environments.</p>
<p>POLICY FOCUS</p> 	<p>The Business Promotion Board has designated 12 business and technology areas</p> <p>Environmental technology. Energy technology. Food and bio-resources. Maritime business and logistics. Life science and welfare. technology Construction. Design, fashion and furniture. Advanced production. Digital technologies. Finance and fintech. Robot and drone technology. Animation, games and movies.</p>
<p>RESPONSIBLE AUTHORITIES</p> 	<p>Provides funding</p> <p>The Ministry of Education and Research and the Danish Business Promotion Board. (I fællesskab indkalder Uddannelses- og Forskningsministeriet (UFM) og Danmarks Erhvervsfrem mebestyrelse-DEB).</p>
<p>BENEFICIARIES</p> 	<p>SMEs</p> <p>Cluster organisations</p> <p>Research organisations</p> <p>Academic institutions</p> <p>Start-ups</p> <p>Large firms</p> <p>Technology centres</p>



The cluster organizations must have an international outlook and promote cooperation on innovation across national borders. Among other things, it must strengthen access to international innovation cooperation and to new international knowledge on testing, demonstration, technology and business opportunities. As part of this, the cluster organizations can support the ecosystem's access to foreign financing of innovation activities, including through private investors, foreign funds, EU programs and the cluster organization's participation in, for example, InterReg projects.

The cluster organizations must be strong, dedicated and professional actors in the business promotion and innovation system. The cluster organization itself must be an independent, privately based organization with its own CVR number, operating on a non-profit basis, and as a neutral platform focus on facilitating collaboration by embracing and reaching out to a broad and active circle of partners of companies, knowledge institutions and relevant actors in the field of business and technology. Effective cluster organizations collaborate with each other on cross-cutting innovation challenges and potentials. In addition, they must have knowledge of, collaborate with and refer to other actors and schemes in the business promotion and innovation system, when and where relevant to users,

On 1 October 2020, the Minister of Education and Research appointed the clusters that will create collaboration between researchers and companies from 2021-2024 and thus bring more innovation into society.

Strength position	Cluster
Environmental technology	CLEAN - Denmark's Environmental Technology Cluster
Energy technology	Energy Cluster Denmark
Food and bio-resources	Food & Bio Cluster Denmark
Maritime business and logistics	Maritime & Logistics Innovation Denmark - MARLOG
Life science and welfare technology	Danish Life Science Cluster
Building and Construction	WE BUILD DENMARK



		Design, fashion and furniture	Lifestyle & Design Cluster
		Advanced production	The Cluster for Advanced Production (MADE)
		Digital technologies	DigitalLead
		Finance and fintech	Copenhagen FinTech
		Budding: Robot and drone technology	Odense Robotics - Denmark's cluster for robot and drone technology
		Budding: Animation, games and movies	Vision Denmark - the cluster for the digital visual industry
		Budding: Sound technology	Danish Sound Cluster
		Budding: Defense, space and security	CenSec - Budding cluster for defense, space and security
INSTRUMENTS	Financial	<p>Funding collaboration initiatives</p> <p>Promoting innovation activities</p> <p>Strengthening cooperation and dissemination of knowledge between companies, knowledge institutions</p> <p>Supporting cross-border innovation cooperation</p> <p>Funding matchmaking events with the aim to establishing relationships and knowledge transfer between companies and knowledge institutions, e.g. via professional networks, conferences, workshops, etc</p> <p>Funding collaborative projects with a focus on strengthening innovation and growth potential in the target group, e.g. via implementation of R&D activities, feasibility studies, etc</p> <p>Supporting Internationalization activities with the aim to establishing dialogue and collaboration with cluster organizations and research and knowledge institutions abroad, e.g. establishing cooperation on R&D and innovation, including EU projects, with cluster organizations or other actors abroad.</p> <p>Financing networking events</p>	



	Other forms of assistance	<p>Planning and project management of the activities and to a limited extent administration, financial management and technical management of the cluster organization</p> <p>Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence</p> <p>Support for soft skills development: coaching, management training, upskilling/reskillingSupport for networking and partnership building (at national and/or international level)</p> <p>Marketing activities: advertising, communication, events</p>
	Explanation	The funding from UFM and DEB is aimed at the cluster organizations' core task of promoting innovation. The funds are thus not operating support, but can to a limited extent finance necessary support activities such as administration, organization, etc. It is expected that the cluster organizations will be able to provide additional funding for innovation-promoting activities from other sources.
HISTORY 	Period	2021- 2024
	Ending year (<i>for policies with limited period</i>)	2024
	Starting year	2021
	Explanation	The Innovation power: Danish clusters for knowledge and business is designed for the period 2021- 2024
BUDGET 	Overall	A total of approx. DKK 640 million (EUR 86.07 million)
	Annual	The selection of cluster actors takes place for a 4-year period 2021-2024. UFM and DEB intend to set aside each approx. 80 mio. DKK annually during the period (EUR 10.76 million)
	Source of funding	DEB and UFM each provide funding for the selected cluster organizations. Allocation of funds from UFM and DEB is coordinated and is expected to be announced together. By 2022 at the latest, DEB will decide how the business-oriented cluster effort in 2023-2024 will be financed and implemented.
	Availability	ex-post



<p>POLICY</p>  <p>EVALUATION</p>	<p>Results</p>	<p>The call is an extension of the fact that DEB in its strategy Business Promotion in Denmark 2020-2023 has identified the 12 business and technology areas (ten positions of strength and two budding areas), where in future there may be one cluster organization that receives public funding. In addition, funding has been provided for two more cluster initiatives in emerging areas. On 1 October 2020, the Minister of Education and Research appointed the clusters that will create collaboration between researchers and companies from 2021-2024 and thus bring more innovation into society¹.</p>
<p>POLICY ALIGNMENT WITH THE EU</p> <p>PRIORITIES</p> 	<p>Green economy</p> <p>Digitalisation</p> <p>Social inclusion</p>	

¹ Presentation of the 14 clusters Overview of the clusters' locations Map of business clusters : <https://ufm.dk/aktuelt/pressemeddelelser/2020/filer/oversigt-over-placeringer.pdf>

03

State of play of cluster policy



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3. State of play of cluster policy

The data below illustrates how the country ranks in terms of maturity of cluster policy. The maturity index is based on a combination of factors presented in Chapter 2 and which are scored based on their existence:

- **Policy scope:** whether the country has a dedicated cluster policy, or cluster creation and/or development is targeted through broader policies (existence of broader policies = 1 point; existence of targeted cluster policies = 2 points)
- **Consistency of cluster policies:** assessment of the duration and experience of the country in doing cluster policies. This dimension assesses only existing cluster policies and not broader policies (no cluster policies available = 0 points; < 10 years of experience or > 10 years (but interrupted) = 1 point; > 10 years (but with clear continuity = 2 points)
- **Evidence of performance:** the existence of monitoring and evaluation mechanisms determines the degree of policy development in the country (no evaluations = 0 points; existence of evaluations of past policies or itinere = 0.5 points; existence of ex-ante and/or ex-post evaluations = 0.5 points)
- **Instruments:** whether the policies provide any instruments to support the policy implementation, being these financial and/or technical assistance (1 point for each type of instrument available)

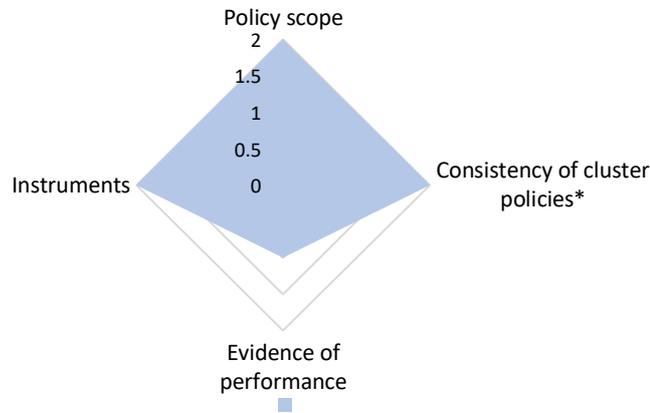
It is important to note that the maturity does not reflect the performance of a country, but only the degree of development of their cluster policy at the moment when the data was collected (2020). The maturity index illustrates how the country scores for each of these four dimensions (policy scope, consistency of cluster policies, evidence of performance and instruments) compared to the maximum score that they can reach.

	Denmark	Maximum score
Policy scope	2	2
Consistency of cluster policies*	2	2
Evidence of performance	1	1
Instruments	2	2

** This dimension is scored solely if the country has a dedicated cluster policy and it assesses only cluster policies*



Cluster policy maturity level



State of play of cluster policy in the country

Policy evaluation (for terminated policies)

Availability of evaluations for terminated policies

The first steps towards a cluster policy were taken by the then Danish government in the 1990's, where the government co-financed cooperation activities between the research sector and the private sector. For instance, in 1996, the then government established a working group that provided recommendations on bringing together capital and competencies in a business promotion network consisting of entrepreneurs and scientists who focused on innovation. However, a study revealed that many enterprises and research institutions found the public grant system confusing and rigid. In 1998, the government fully established the policy which primarily focussed on the entrepreneurs, matching them with researchers who wished to commercialise their research and made government financial support and expert advice available to them.

Policy approach in the country

Policy support for the activities of cluster organisations
Broad-based framework policies to support cooperation effectiveness

Continuity

The current governmental facilitation of networks and financial support of cluster organisations in Denmark have been consistent since 2006. The Ministry of Science conducted another large study on needs and challenges of the collaborations between enterprises and research institutions. Enterprises highlighted similar challenges that the prior strategy had sought to address. The study resulted in a comprehensive strategy Innovation Denmark 2007-2010 which was the first innovation network policy that contained specific objectives and a funding strategy for the budget of more than EUR 400 million. It aimed to further develop innovation and knowledge networks especially between research institutions and SMEs and gather the different types of funding for the matter under one programme. As part of the strategy, in 2008, a number of government and regional cluster and network programmes were gathered into one national programme, 'Innovation Network Denmark', under The Danish Council for Technology and Innovation, and the number of supported cluster organisations was to around 20. Those 20 focused on significant Danish business and research-related positions of strength and international collaborations. By the end of 2009, 22 innovation networks existed under the programme with more than 6,000 Danish enterprises participating in the activities of which more than 80% were SMEs.



	<p>The strategy was prolonged until 2013 and government funding of the innovation networks continued until 2014. In 2013, the Strategy for Denmark's Cluster Policy was based on the lessons learned from the prior strategy. This included a stronger governmental collaboration with the regions to engage in potential growth areas, the introduction of the three 'cluster leagues' in accordance with European quality standards, and a strengthening of SMEs' international collaborations. The innovation networks were continued under this strategy and in the form they appear in 2020.</p> <p>As of 2020, Denmark has a new Business Promotion in Denmark 2020-2023 strategy. This is the result of an agreement between the Minister for Industry, Business and Financial Affairs about the strategy, the Danish Executive Board for Business Development and Growth which have charted a joint course for the initiatives of the next few years. The initiatives especially focus on small and medium-sized enterprises which need to be strengthened in their green and digital development as well as their access to qualified labour. The strategy paper and the agreement also strengthen entrepreneurship and increase the promotion of innovation and internationalization in Danish companies. The strategy also identifies the economic leading industries and emerging industries in Denmark, which are the main focus of the cluster initiatives of the future. (The establishment and remedies of the Danish Executive Board for Business Development and Growth appears from the Danish "Business Promotion Act", passed on December 13th, 2018). With the strategy Business Promotion in Denmark 2020-2023, the Danish Executive Board for Business Development and Growth have selected ten leading and two emerging industries in Denmark.</p> <p>The leading industries are characterized by companies and knowledge environments that are the best in class and represent a significant contribution to Denmark's economy as well as a high level of international competitiveness. Emerging industries are prioritized based on large and scalable potentials with a clear and credible prospect for commercial success given macroeconomic trends, the development of the global markets and the strength of the specific Danish research and knowledge base.</p> <p>At regional level, Denmark has historically developed and facilitated for cluster networks and innovation. Under previous government strategies, the Danish regions gathered representatives and experts from the private sector, academia, research institutions, labour unions, and local and regional authorities as members of a network called Vækstforum. The six regional Vækstforum networks had since their establishment in 2006 formulated and implemented several political strategies which promotes internationalisation and improved competition. For instance, the Region Midtjylland Vækstforum successfully collaborated in several cluster initiatives in the Baltic Sea region. The six Vækstforum networks were terminated in 2019 as a result of the political agreement on "Simplifying the business promotion system" which reduced the number of politically responsible levels from three to two, one municipal and one governmental, thus cutting off the regions from carrying out their own business promotion efforts.</p>
<p>Consistency</p>	<p>> 10 years (but with clear continuity)</p> <p>The 2016-2018 strategy has continued, as no new strategy has been implemented yet. However, the Ministry of Science and Higher Education has published a set of guidelines for the Innovation Networks of 2019-2020, which outlines the purpose, relevant actors, the organisational requirements, and demands when applying for fundraising.</p> <p>The Business Promotion in Denmark 2020-2023 and the agreement with the Minister for Industry, Business and Financial Affairs about the strategy, the Danish Executive Board for Business Development and Growth represent a joint course for the initiatives of the next few years. In future, there</p>



will only be one publicly funded cluster within each selected industry. The rationale for the reformed cluster structure has been problem drivers such as too many clusters and overlaps - which have been confusing and ineffective for the Danish companies. By gathering the efforts across the country, the new cluster structure will be more simple, efficient and easy to understand for companies.

The selection of cluster organizations is made in close cooperation between the Danish Executive Board for Business Development and Growth and the Ministry of Higher Education and Science. On 1 October 2020, the Minister of Education and Research has officially appointed 14 new clusters. Operation period 2021-2024 with total funding approx. DKK 640 million (EUR 86 million).

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