

# NORTH SEA PROGRAMME

## VIB INTERREG PROGRAMME –

### FINAL DRAFT FOR NATIONAL SIGNATURE

<b>1 Joint programme strategy: main development challenges and policy responses</b>	<b>5</b>
1.1 Programme area	5
1.2 Summary of main joint challenges, taking into account economic, social and territorial disparities as well as inequalities, joint investment needs and complimentary and synergies with other funding programmes and instruments, lessons-learnt from past experience and macro-regional strategies and sea-basin strategies where the programme area as a whole or partially is covered by one or more strategies.	5
<b>1.2.1 Context of programme, including primary challenges faced in the EU and the major strategic orientations</b>	<b>5</b>
<b>1.2.2 Challenges and competitive strengths in the North Sea region</b>	<b>9</b>
<b>1.2.3 Lessons-learnt from past experience</b>	<b>15</b>
<b>1.2.4 General guidance to potential applicants</b>	<b>17</b>
1.3 Justification for the selection of policy objectives and the Interreg specific objectives, corresponding priorities, specific objectives and the forms of support, addressing, where appropriate, missing links in cross-border infrastructure (Table 1)	24
<b>2 Priorities</b>	<b>34</b>
<b>2.1 Priority 1: Robust and smart economies in the North Sea region</b>	<b>34</b>
2.1.1 Specific objective 1: Developing and enhancing research and innovation capacities and the uptake of advanced technologies (SO1.1)	34
2.1.1.1 Related types of action	34
2.1.1.2 Indicators	38
2.1.1.3 The main target groups	39
2.1.1.4 Indicative breakdown of the EU programme resources by type of intervention	40
2.1.2 Specific objective 1.2: Developing skills for smart specialization, industrial transition and entrepreneurship (SO1.4)	41
2.1.2.1 Related types of action	41
2.1.2.2 Indicators	44
2.1.2.3 The main target groups	45
2.1.2.4 Indicative breakdown of the EU programme resources by type of intervention	46
<b>2.2 Priority 2: A green transition in the North Sea region</b>	<b>47</b>

2.2.1 Specific objective 2.1: Promoting energy efficiency and reducing greenhouse gas emissions (SO2.1)	47
2.2.1.1 Related types of actions	47
2.2.4.2 Indicators	51
2.2.1.3 The main target groups	52
2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention	53
2.2.2 Specific objective 2.2: Promoting renewable energy in accordance with Directive (EU) 2018/2001, including the sustainability criteria set out therein (SO2.2)	54
2.2.2.1 Related types of actions	54
2.2.4.2 Indicators	58
2.2.2.3 The main target groups	59
2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention	60
2.2.3 Specific objective 2.3: Developing smart energy systems, grids and storage outside the Trans-European Energy Network (TEN-E) (SO2.3)	61
2.2.3.1 Related types of actions	61
2.2.4.2 Indicators	64
2.2.3.3 The main target groups	65
2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention	66
2.2.4 Specific objective 2.4: Promoting the transition to a circular and resource efficient economy (SO2.6)	67
2.2.4.1 Related types of action	67
2.2.4.2 Indicators	70
2.2.4.3 The main target groups	71
2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention	72
2.2.5 Specific objective 2.5: Promoting sustainable multimodal urban mobility, as part of transition to a net zero carbon economy (SO2.8)	73
2.2.5.1 Related types of action	73
2.2.5.2 Indicators	77
2.2.5.3 The main target groups	78
2.2.5.4 Indicative breakdown of the EU programme resources by type of intervention	79
<b>2.3 Priority 3: A climate resilient North Sea region</b>	<b>80</b>
2.3.1 Specific objective 3.1: Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches (SO2.4)	80

2.3.1.1 Related types of action	80
2.3.1.2 Indicators	83
2.3.1.3 The main target groups	84
2.3.1.4 Indicative breakdown of the EU programme resources by type of intervention	85
2.3.2 Specific objective 3.2: Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution (SO2.7)	86
2.3.2.1 Related types of action	86
2.3.2.2 Indicators	90
2.3.2.3 The main target groups	91
2.3.2.4 Indicative breakdown of the EU programme resources by type of intervention	92
<b>2.4 Priority 4: Better governance in the North Sea region</b>	<b>93</b>
2.4.1 Specific objective 4.1: Other actions to support better cooperation governance (SO 4.1)	93
2.4.1.1 Related types of action	93
2.4.1.2 Indicators	97
2.4.1.3 The main target groups	98
2.4.1.4 Indicative breakdown of the EU programme resources by type of intervention	99
<b>3. Financing plan</b>	<b>100</b>
3.2 Total financial appropriations by fund and national co-financing (Table 8)	100
<b>4. Action taken to involve the relevant programme partners in the preparation of the Interreg programme and the role of those programme partners in the implementation, monitoring and evaluation</b>	<b>101</b>
4.1 Involvement of partners in the preparation of the programme	101
4.2 Involvement of partners in the implementation, monitoring and evaluation of the programme	104
<b>5. Approach to communication and visibility for the Interreg programme (objectives, target audiences, communication channels, including social media outreach, where appropriate, planned budget and relevant indicators for monitoring and evaluation)</b>	<b>106</b>
<b>6. Indication of support to small-scale projects, including small projects within small project funds</b>	<b>109</b>
<b>7. Implementing provisions</b>	<b>109</b>
7.1 Programme authorities	109
7.2 Procedure for setting up the joint secretariat	110

7.3 Apportionment of liabilities among participating Member States and where applicable, the third or partners countries and OCTs, in the event of financial corrections imposed by the managing authority or the Commission	111
<b>8. Use of unit costs, lump sums, flat rates and financing not linked to costs</b>	<b>112</b>
<b>Appendix 1: Map of programme area and list of NUTS regions</b>	<b>113</b>
<b>Annex X: Additional data for France, the Netherlands and Flanders</b>	<b>115</b>
<b>Annex Y: References Interreg Programme</b>	<b>116</b>

# 1 Joint programme strategy: main development challenges and policy responses

## 1.1 Programme area

*Reference: point (a) of Article 17(3), point (a) of Article 17(9)*

The North Sea Programme area is a functional area that covers the whole of Denmark and the Netherlands, the southern area of Norway, the Flemish part of Belgium, the northwestern area of Germany, the southwestern area of Sweden and the northwest coastal regions of France. Of the seven countries participating in the Programme, Norway is the only non-EU member but is part of the EEA. The area covers a surface of approximately 536.000 km<sup>2</sup> with a population of approximately 61,5 million inhabitants. All participating regions are adjacent to marine waters and many of them are coastal regions directly bordering the North Sea basin.

The North Sea region is a patchwork of varied territory extending from large rural and remote areas to the densely populated cities that are part of Europe's economic core region. Based on the 2018 version of the urban-rural typology, the regions covered by the programme area range from predominantly urban regions, mainly corresponding to the capital city regions in Denmark and Norway and large urban areas in Belgium, Germany and the Netherlands, to predominantly rural regions, which can be found within each domestic context, except for the Netherlands. In overall terms, however, the North Sea region is characterised by the predominance of small and medium-sized cities, many of which have fewer than 20,000 inhabitants.

## 1.2 Summary of main joint challenges, taking into account economic, social and territorial disparities as well as inequalities, joint investment needs and complimentary and synergies with other funding programmes and instruments, lessons-learnt from past experience and macro-regional strategies and sea-basin strategies where the programme area as a whole or partially is covered by one or more strategies.

*Reference: point (b) of Article 17(3), point (b) of Article 17(9)*

### **1.2.1 Context of programme, including primary challenges faced in the EU and the major strategic orientations**

The North Sea Programme enters an altered European Union landscape in the 2021-27 programme period. The United Kingdom has left the Union. Climate change and environmental degradation have risen to the top of a list of challenges, and a more

immediate challenge has presented itself in the form of the COVID-19 crisis, which has impacted member states since early 2020.

Many of the challenges faced by the wider EU are also problems with which the North Sea region grapples. The programme aims to address the challenges specific to the region in part through the lens of the relevant EU policies as well as by drawing on the region's strengths.

### Overarching EU policies most relevant to the North Sea Programme

The European Commission has set priorities for the next seven years within the framework of two major policy documents: the European Green Deal and Shaping Europe's Digital Future.

#### ***European Green Deal***

The core vision of the European Green Deal is to modernise and transform the European economy to reach climate neutrality by 2050. Under the deal, the Commission calls for sustainability to be mainstreamed into wider EU and national policies, and, in turn, for other priorities such as gender equality, equality and growth to be integrated into climate action. As such, the Green Deal has been recognised as Europe's new growth strategy. To reach the 2050 target of a climate-neutral continent, the EU's climate ambition for 2030 has been raised to a 50-55% cut in greenhouse gas emissions. The region is in a strong position to contribute to this reduction, and the North Sea Programme can help to reach the goal of climate neutrality by capitalising on the region's strengths through, for example, initiatives in climate adaptation, renewable energy, environmentally friendly construction, green transport, and advanced water management techniques.

Two building blocks of the European Green Deal - a new industrial strategy and the Circular Economy Action Plan - play strongly to the region's strengths.

#### ***Industrial strategy***

The European Commission's new industrial strategy, 'Making Europe's businesses future-ready,' twins the green and digital transitions of European industry. It allows industry and SMEs to be more proactive, provides workers with new skills, and supports the decarbonisation of our economy. With a focus on SMEs, the strategy recognises that small and medium-sized enterprises play a key role in every sector of the economy and welcomes their ability to innovate solutions to challenges like climate change, to boost resource efficiency and to increase social cohesion. The North Sea region can contribute to this strategy by building value chains that support SMEs and coordinating Smart Specialisation strategies in a transnational context.

The strategy also urges the countries in the EU to look closely at the opportunities and challenges facing industrial ecosystems that encompass all players operating in a value chain: from the smallest start-ups to the largest companies, from academia to research, and from service providers to suppliers. The North Sea Programme aims to include these players in the advancement of a green and digital Europe.

### *Circular Economy Action Plan*

The updated Circular Economy Action Plan (2020) pushes the North Sea region to accelerate its green transition and its inclusion of the circular approach to products and services. The high emissions levels in parts of the region and a growing problem with waste demand a reduction in the use of new resources, in part through the use of recycled materials. Four core components make up the new plan:

1. to make sustainable products the norm in the EU
2. to empower consumers to access reliable information on the reparability and durability of a product
3. to focus on sectors that use the most resources but where the potential for circularity is high
4. and, ultimately, to ensure less waste.

This programme aims to focus on the circular economy to maximise the environmental benefits of reduced production and to realise an increase of jobs.

### ***Shaping Europe's Digital Future***

The second major policy document relevant to the programme, launched by the Commission in 2020, is the communication *Shaping Europe's Digital Future*, which forms part of the Commission's priority strategy to create a 'Europe fit for the digital age.' This communication focuses on the different questions raised by the growing role of digital technology in our economies, societies and democracies and sees digitalisation as an enabler for the green transition to reduce the environmental and social footprint of the EU, while addressing the severe gender imbalance in ICT and STEM professions. The Programme aims to further contribute to this through the access and uptake of digital technology in the region. Programme stakeholders are keen to connect digital solutions in areas that enable aspects of the European Green Deal, such as smart urban mobility and energy efficiency, and involve a broad range of partners - from public services to SMEs.

### ***Other relevant EU policies and strategies***

Among other EU policy areas and policy levels, the most prominent and relevant for the North Sea region are the *Territorial Agenda 2030 - A future for all places*, the *integrated maritime policy*, the *Sustainable and Smart Mobility Strategy* and the *Biodiversity Strategy for 2030*.

### *Territorial Agenda 2030*

The Territorial Agenda 2030 is the strategic policy document for Europe that provides a framework for actions towards territorial cohesion and an integrated and sustainable territorial development. It seeks to promote an inclusive and sustainable future for all places in Europe, recognising the growing inequalities as well as unsustainable development between European people and places. It underlines the importance of and provides orientation for strategic spatial planning and calls for strengthening the territorial dimension of sector policies at all governance levels. Highlighting the need of a balanced territorial development, it should hold good for a holistic and place-based approach in policy making and spatial planning and address different levels of governance to enforce cooperation and coordination. The North Sea region can

contribute to this agenda by involving local and regional bodies and by addressing territorial challenges in its activities to develop a strong basis for an integrated territorial development of the region.

#### *Integrated maritime policy*

The EU's overarching integrated maritime policy, established in 2007, seeks to provide a coherent approach to maritime issues through increased coordination between the actors and organisations involved in different policy areas. In particular, it pursues three main targets: (1) sustainable development of the European maritime economy, (2) protection of the environment and (3) cooperation of all maritime players across sectors and borders. To reach these goals, the integrated maritime policy suggests the use of several tools and attention to various cross-cutting policies, including Blue Growth, marine data and knowledge, integrated maritime surveillance, maritime spatial planning, maritime security and sea-basin strategies. With growing attention being paid to offshore energy production and the tremendous potential for wind energy in the North Sea, it will be increasingly important that the region contributes to this policy.

#### *Sustainable and Smart Mobility Strategy*

This strategy lays the foundation for how the EU transport system can achieve its green and digital transformation. The goal is to make all transport modes more sustainable, with green alternatives widely available. The aim is a 90% cut in emissions by 2050 outlined in the Green Deal. The transformation offers great opportunity for reduction of pollution levels, the creation of new services and jobs and is an opportunity for rural and remote regions to be better connected. The strategy aligns with the strengths and concerns of the region and is an opportunity to increase connectivity by encouraging sustainable solutions.

#### *EU Biodiversity Strategy for 2030*

The EU Biodiversity Strategy for 2030, which aims to help protect nature and reverse the degradation of European ecosystems, is tied to Europe's plan to restart the economy after the Covid-19 pandemic. The pandemic has shown that neglect of the fundamental importance of ecosystems and biodiversity can create serious threats to public health and economic and social stability. While the North Sea region is quite advanced in terms of sustainable management of ecosystems and biodiversity, a substantial amount of the region is densely populated and boasts a high level of economic activity. The latter can even be seen in the North Sea basin itself, e.g. in the industries of shipping, fisheries, oil and raw material extraction, and wind production. The EU Biodiversity Strategy for 2030 states explicitly that European Territorial Cooperation and transnational efforts are particularly important to the protection, restoration and maintenance of marine and coastal ecosystems in the North Sea basin, including those to reduce marine pollution and litter. The European Business for Biodiversity Initiative, which is part of the Strategy, is also relevant for the North Sea Programme as it supports public-private cooperation.

#### **Conclusion: EU-level policy framework**

The EU's strategic policy framework and the policy areas identified as most important by the European Commission and regional stakeholders provide the foundation for the

development of the programme. Although the pillars of these policies and strategies are familiar to the North Sea region, there is room to develop and expand the practices that can help to further them. The delivery of the Programme is expected to contribute to the achievement of the agendas and the goals set out in these policies, and projects funded under the Programme are expected to contribute to them.

### **1.2.2 Challenges and competitive strengths in the North Sea region**

This section provides a territorial analysis of the major challenges facing the North Sea region as well as the competitive strengths that the region can draw on. It points out where the gaps lie and highlights topics and themes the programme should focus on in order to successfully address the region's challenges and reap the benefits of its strengths.

#### ***Socio-economic trends and challenges***

The North Sea region covers six EU Member States and Norway in the VIB period (2021-27). All regions in the programme area are on or near the North Sea coast. The North Sea region is a patchwork of varied territories, extending from the remote islands and fjords at the northern edge of Europe to the densely packed cities of northern Europe with high concentrations of research and economic output. The region includes some of Europe's most sparsely populated areas as well as some of its most densely populated cities. It is home to centres of national and regional importance, ranging from capital cities to regional administrative centres and centres of global economic importance.

The population of the North Sea region in 2020 is approximately 61.5 million inhabitants, representing 12.6% of the EU-27 population, and is expected to grow to approximately 63 million inhabitants by 2030 [1]. This growth projection highlights the dynamism of the region.

Population developments vary from one region to another. The largest demographic growth is expected to take place in predominantly urban regions and intermediate regions in Norway as well as parts of Belgium, Denmark and Sweden. At the same time, there is no clear pattern between population shrinkage and the urban-rural typology in the North Sea region. The largest population decrease, i.e. beyond 10%, is expected to take place in intermediate and predominantly rural regions in Germany as well as two intermediate regions located in the northern parts of the Netherlands and the insular, predominantly rural region of Bornholm in Denmark. Furthermore, five primarily urban regions also face demographic shrinkages: four are located in Germany (Bremen, Pinneberg, Hannover and Delmenhorst) and one in the Netherlands (Oost-Zuid-Holland) [2].

In terms of prosperity, the North Sea region continues to be one of the most prosperous areas of Europe. The regional average in GRP (gross regional product) per capita, based on the EU-27 average (expressed in purchasing power parity [PPP] for comparison between countries by eliminating differences in price levels), was 118 in 2018, indicating an economic performance above the European average. (The actual value of the EU-27 average is 30,200€/inhabitant; and the corresponding NSR-average is

35,636€/inhabitant.) Similar to the demographic context, the NSR includes regions with a variety of economic contexts. The predominantly urban regions have the highest GRP per capita in the NSR, mirroring the pattern elsewhere in Europe. The main reasons for this are the diverse range of economic activities in the big cities along with urban growth. Moreover, while the share of people at risk of poverty or social exclusion is lower in the NSR than the EU average, some regions in Germany and Sweden have higher shares of people at risk, which is partly explained by the ongoing process of integrating migrants from outside Europe (additional data for France, the Netherlands and Flanders is included in annex X) [3].

Across the NSR, there is a divide between those who have access to public transport in metropolitan areas and those in smaller urban centres and rural areas. Capital cities and other cities functioning as regional centres have relatively high access to public transport, whereas the population of smaller urban centres represent a low share with access to public transport. People living in the rural areas of the North Sea region are even more dependent than their fellow urban dwellers on cars to get around in daily life [4].

The analysis of the region's socio-economic development and challenges highlights gaps between urban and rural areas. The programme can help address these gaps by contributing to bridging the rural-urban divide and improving linkages between the hinterland and remote rural areas and the larger urban centers, not least through better transport connections.

## ***A smarter Europe***

### *Innovation performance*

According to the Regional Innovation Scoreboard, the North Sea region hosts well-performing innovation systems. The regions with the strongest performance (i.e. Leader+, Leader and Leader-) are found in at least one region in almost each of the countries participating in the North Sea Programme. The region of the NSR with the highest performance is the capital region of Denmark (Hovedstaden) with a relative index score to the EU of 149,0 in 2021, making it a Leader+ region. Regions in Germany and Sweden also score high and are rated as Leader+. The regions with the lowest innovation performance are found in the regions of Normandie (FR), Hauts-de-France (FR), Weser-Ems (DE), Lüneburg (DE), Drenthe (NL), Zeeland (NL), Friesland (NL) and Sjælland (DK), which all are classified as Moderate or Moderate+. Overall, the capital and metropolitan regions have higher levels of innovation performance than more rural and peripheral regions, according to RIS 2021. This is often due to the critical mass of private companies and the spatial significance of the proximity of firms and entrepreneurs, enabling knowledge-sharing and spill-over effects. Headquarters tend to be located in metropolitan regions, while some of their activities might occur in other parts of the country [5].

Four of the regional innovation scoreboard indicators capture the innovation capacity of the regions: R&D expenditure in the public sector, R&D expenditure in the private

sector, SMEs innovating in-house and innovative SMEs collaborating with others. The regions of the NSR have, on average, high innovation capacity, scoring higher than the EU average on R&D expenditure as a percentage of GDP in both the public (NSR regional average: 0.588; EU-27 regional average: 0.48) and the private sectors (NSR regional average: 0.564; EU-27 regional average: 0.427). The percentage of SMEs innovating in-house (0.56) is also higher than the EU-27 average of 0.451. Nonetheless, challenges and gaps remain when it comes to the Region's innovation capacity. In the NSR, the predominantly urban and intermediate regions, some of them among the most innovative in Europe, perform better than rural regions on these indicators, similar to other parts of Europe. Furthermore, innovative SMEs across the NSR experience some limitations when it comes to collaborating with other innovative SMEs, with this indicator scoring, on average, lower than the above-mentioned three indicators (NSR regional average: 0.464; EU-27 regional average: 0.325) (additional data for France, the Netherlands and Flanders is included in annex X) [6].

### *Smart Specialisation Strategies*

Smart Specialisation allows European regions to identify and develop their strengths/ competitive advantages by unlocking the specific assets and competencies of their economic structure and knowledge base, boosting growth and jobs. All North Sea regions have a Smart Specialisation strategy in place, which outlines the strategic focus areas for the coming years. In some regions, updated strategies have been launched recently, whereas other regions are currently in the process of drafting new strategies. The number of strategy focus areas varies from three (Kronoberg) to 13 (DK). It is possible to identify overlapping focus areas across the North Sea region, clustered under six umbrella categories: maritime industries; energy and environmental technology; mobility and logistics; industrial modernisation; life sciences and health tech; food, agriculture and bio-based economy. These are the areas found to have the highest concentration of commonalities across the region, thereby involving potential and strengths for several regions. At the same time, there is a need for a flexible approach to Smart Specialisation that is not locked to particular shared specialisation priority areas and allows for cross-/multi-sectoral approaches. Moreover, a workforce with up-to-date knowledge and improved digital and entrepreneurial skills is needed in order to reap the benefits of Smart Specialisation and the industrial transition (additional data for France, the Netherlands and Flanders is included in annex X) [7].

## **A greener Europe**

### *Energy*

The EU intends to demonstrate global leadership with the "Clean energy for all Europeans package". The package sets ambitious targets for renewable energy (32% for renewable energy sources in the EU's energy mix by 2030) and energy efficiency (at least 32.5% energy efficiency by 2030, relative to a 'business as usual' scenario). Significant efforts are necessary to achieve these targets, and the North Sea region is in a prime position to contribute to them. By 2019, the share of renewable energy in gross final energy consumption was very high in some North Sea region countries, but substantially lower in others: 73.7% in Norway, 56.4% in Sweden, 37.2% in Denmark,

17.4% in Germany, 17.2% in France, 9.9% in Belgium and 8.8% in the Netherlands [8]. Overall, the share of renewable energy has increased in the region in recent years, in large part due to offshore wind energy. Two main drivers of this trend are support schemes for renewable energy technology and shrinking costs. The North Sea region can be seen as a global frontrunner in offshore wind energy and other energy forms. It is well-equipped with renewable energy and spearheads technologies, such as wind, hydro and biomass aimed at respecting all relevant environmental provisions. The countries and regions of the North Sea region are also in the process of developing and rolling out alternative fuels and low-carbon vehicle technologies.

As such, the programme can help build on these strengths via projects that further facilitate a transfer to a low-carbon economy and society. At the same time, there remain considerable differences between the countries' share of renewable energy. Moreover, the interconnectivity of electricity grids throughout the North Sea is a topic of considerable discussion, and strengthening the connections would allow the Region to make better use of renewable energy production capacities and the various forms of energy transport.

#### *Circular economy*

To continue to shrink the environmental impact of production, minimise resource dependency, and reduce the waste problem in the North Sea region, it is crucial to further its green transition by focusing on the circular economy. The circular economy can also be a stimulus to local and regional development. Circular material providers and circular technology providers are two pillars of a circular economy that enable the transition towards a circular economy. Across Europe, material providers and technology providers represent 2.2% and 1.6% of the total economy respectively [9].

In the NSR, circular material providers, such as forestry, sustainable agriculture, renewable energy and high-quality secondary raw materials from wastes, have a more prominent role in the regional economy (especially the northern part of the region) than they do in the EU more widely. More people are employed by circular economy material providers in rural regions (e.g. Värmland (7.4%) and Kronoberg (6.3%) in Sweden) than in urban areas (e.g. the Randstad, Hamburg, as well as the capital regions Hovedstaden and Oslo, all with below 1%). Here, material provision does not have a prevalent role in regional economic activities [10].

In contrast, more circular technology providers are present in urban regions and appear to cluster near industrial centres (e.g. Hamburg (4.2%). Regions in western Norway and Denmark stand out for high shares of people employed by circular technology providers. However, several regions in Germany, Belgium and the Netherlands are below European averages in employment by circular economy technology providers [11].

Overall, employment in the circular economy illustrates a solid foundation for the region to realise the transition towards a circular economy - but there is room for improvement. Regional differences across the North Sea region show that there is

potential to share knowledge and best practice in the circular economy through transnational projects.

### *Sustainable transport*

The North Sea region faces growing challenges caused by transport and traffic. The transport sector is responsible for approximately 25% of the greenhouse gas emissions in Europe and is a major source of air pollution. Making transport more sustainable requires a shift from road transport that is still primarily fossil fuel-based to more sustainable modes of mobility. Supporting this shift should take into account tendencies by men and women to use different modes of transport, e.g. men's higher use of passenger vehicles and women's higher use of public transport. In 2018, the share of passenger travel via car vis-a-vis other modes of transport in most North Sea countries was above the EU-27 average of 82.9%: 89.2% in Norway, 85.7% in the Netherlands, 85.1% in Germany, 83.3% in France and 83.1% in Sweden. Denmark and Belgium were below the EU average, at 82% and 81.6% respectively [12]. There is a bigger variation between the countries in regard to freight transport: in Denmark, France and Norway, the percentage of freight transport via roads was above the EU average of 75.3% in 2018, while it was lower in Germany, Sweden, the Netherlands and Belgium [13]. Overall, there is a clear need to further address the modal shift towards green transport solutions in the North Sea region. These should include shifts to rail, inland waterways, and the open sea.

At the same time, the North Sea region countries are in the process of developing and rolling out alternative fuels and low-carbon vehicle technologies. The share of energy used for transport that comes from renewable sources stood at 8.8% in the EU in 2019. The proportions recorded in Germany (7.6%), Denmark (7.1%) and Belgium (6.8%) are below this average. Sweden with 30.3% had by far the highest share of renewable energy in transport fuel consumption in both the North Sea region and the EU more broadly, ahead of Norway at 27.6%, the Netherlands at 12.5% and France at 9.2% [14]. The North Sea region is thus in a good position to further green the transport sector by shifting away from fossil-fuel based transport and mobility systems, although considerable differences between the countries remain. Overall, it is a core challenge for the North Sea region to improve the use of green transport and mobility options in combination with behavioral changes, as this will result in a cleaner and more livable North Sea region.

### *Climate change and environment*

The North Sea region faces considerable environmental challenges and threats linked to the impacts of climate change, pollution and emissions as well as the over-exploitation of resources. The exact nature and rate of these impacts are uncertain, but rising sea temperature and increasing acidification represent major threats to marine ecosystems coastal communities. Another significant concern is the vulnerability of densely populated regions along the Dutch and German coast to rising sea levels, and related increases in storm surges and flood hazards.

Seasonal extremes in precipitation and weather patterns are increasing substantially in the North Sea region. An increase of annual precipitation toward the end of the 21st century is projected across the entire North Sea region. The increase rate of annual precipitation varies within the North Sea region, with the southern part expecting an increase less than 5% versus a projected increase over 20% in the northern part. Parts of Norway could even reach an increase of 30% for the period 2071-2100. These trends put stress on hydrological systems and the aquatic environment in the programme area.

The capacity of regions to adapt to climate change across the North Sea region is generally at medium or above medium levels compared to the European average. However, several regions in the NSR are also assessed to have high adaptive capacity. The aggregate potential impact and the potential vulnerability to climate change are found to be most severe in coastal regions of the NSR, especially the Netherlands, and in mountainous areas of Norway. Other areas face extreme rainfall with local flooding or drought in others [16].

A focus on climate change is backed by national/regional policies. This also aligns with the North Sea Commission's North Sea region Strategy 2030, i.e. its Energy and Climate Change Working Group's endorsed Paper on Climate Change Adaptation and the North Sea Commission. There may also be synergies and learning potentials between the development of climate adaptation solutions in coastal and mountainous areas.

One of the challenges linked to climate and environment involves people's exposure to air pollution. Air quality is better in the north than in the south of the North Sea region. The populations in the south are exposed to a PM2.5 concentration level, which exceeds the World Health Organisation's long-term guideline value, indicating that air pollution may have effects on the people's health and well-being (additional data for France, the Netherlands and Flanders is included in annex X) [17].

### *Biodiversity*

Biodiversity encompasses the number, variety and variability of plants, animals and other organisms, including humans. It is a vital asset for regional development and other benefits in the North Sea region. The North Sea region has a rich natural environment with a varied coastline, river estuaries, wetlands, woods, hills and mountains providing a valuable and varied landscape. The quality of the natural habitats is recognised and protected through a large number of Natura 2000 sites and numerous national and regional conservation schemes. However, the size of the terrestrial Natura 2000 areas varies between the countries of the North Sea region: in 2019, Germany and the Netherlands protected 15% of their national territory as Natura 2000 sites, Belgium and France 13%, Sweden 12% and Denmark 8% [18]. In all countries, the proportion of protected areas under the Natura 2000 is below the EU average of 18%. Habitat and biodiversity loss continues in the North Sea region, with the environment heavily affected by high population density, urbanisation and a high intensity of agriculture, transport, industry and forestry. Maintaining natural resources and biodiversity is a primary challenge in the region.

### *Conclusion: Challenges and competitive strengths in the North Sea region*

This analysis identifies crucial territorial gaps in the North Sea region as well as the competitive strengths that the region can draw on. Based on this analysis, the following topics were identified to which the North Sea Programme can contribute in order to close gaps and reap the benefits of its strengths: under Policy Objective 1: “A smarter Europe”, there is a need to further foster innovation performance in the region, and address Smart Specialisation and related skills gaps. Under Policy Objective 2: “A greener Europe”, relevant topics are the Region’s energy transition, the improvement of its performance in the circular economy, contributions to the greening of transport and to climate change adaptation, including better water management, and to biodiversity. Another important gap identified is the divide between urban and rural areas in the North Sea region, which the Programme can contribute to bridging.

These topics strongly align with the North Sea Commission’s North Sea region 2030 Strategy, which was launched in November 2020 and identifies key challenges in and common characteristics of the North Sea region and four themes:

- (1) A productive and sustainable North Sea, supporting sustainable marine and maritime development
- (2) A climate neutral North Sea region, contributing to a resilient and adapted North Sea region which has achieved climate neutrality at the very latest by 2050
- (3) A connected North Sea region, which addresses fossil-free, safe and user-friendly accessibility for all and in every territory of the North Sea region, and
- (4) A smart North Sea region, supporting the Region’s front-runner position in sustainable economics and democracy by maximizing its competitive advantages through innovation and through blue and green economies.

### **1.2.3 Lessons-learnt from past experience**

The 2021-27 programme period is the North Sea Programme’s fifth. Throughout the evolution of the programme, challenges and problems have been identified, adjustments made, and both the programme and the projects it funds improved and strengthened. While the themes of the programme have not changed drastically since it was established, they have been adjusted to address the most crucial challenges of the specific period.

#### *VB programme performance*

The programme begins the VIB period in a position of relative strength. The VB programme had been assessed, at the time of this programme’s preparation, as having been implemented successfully and according to plan. It was found to have contributed to all three EU 2020 Strategy objectives with which it was aligned: smart growth, sustainable growth, and inclusive growth. Underlying the success of the programme were the efforts on the projects’ part to cooperate transnationally to find common solutions for shared problems.

#### *Viewing the VB programme’s performance through the lens of its thematic priorities*

The VIB programme builds on positions of strength by showcasing proven successes and viewing these according to alternative themes. In the VB programme, funds were allocated within four main priority themes: Thinking Growth, Eco-Innovation, Sustainable North Sea region and Green Transport and Mobility. Important contributions were made to all four priority themes.

At the same time, six overarching thematic focus areas across the project priorities were identified for the VB programme period, to which the VB programme contributed: enhancing liveability, improving resource utilisation, pushing digital transformation, discovering new markets, managing ecosystems and biodiversity, and moving towards carbon free. This demonstrates that while projects begin and end in a formal priority, they make contributions that extend past the boundaries of that priority. North Sea Programme projects succeed, therefore, from different perspectives - it all depends on the lens through which one views them.

Overall, the VIB programme is in a strong position to address the challenges and territorial needs identified for the 2021-2027 period. The achievements of the VB programme period have provided a good base for the programme to continue leading in the smart and green transformation of the North Sea region by creating a significant impact through cooperation projects. This is especially relevant for the next period as the European Commission has set the bar high for green growth between 2021 and 2027.

For the VIB programme period, a high level of focus on future-oriented topics in the programme should be maintained in order to link projects to ongoing political debates and thus build on the momentum in specific areas. Cooperation should also continue to focus on transnational issues and solutions, which build on shared strengths and opportunities and link fragmented actions.

#### *Lessons on approaches and operational aspects of VB transnational cooperation projects*

In terms of project approaches, the following conclusions based on experience during the VB period should be considered when implementing the VIB programme:

- Pilots and demonstrations are a vital part of many projects' lifecycle. However, managing pilots requires strong project management skills. This should be taken into account when creating a project application.
- The pilot focus of VB projects was in some instances accompanied by governance approaches, which proved beneficial. Governance aspects should be incorporated into the new programme.
- One of the reasons projects apply to the North Sea Programme is that they appreciate the chance to trial potential solutions to challenges, fail and tweak them to try again, or share their experiences so others can learn from them.
- The VIB North Sea Programme should continue to encourage - indeed, actively seek - different types of partners in projects to ensure a multidisciplinary perspective and a high level of innovation. Efforts to directly involve local and regional authorities and their decision-makers in the programme should be fostered. The involvement of private organisations, business support

organisations or network representatives should be an integral part of project partnerships.

- The “human-centric” (citizen science, citizen involvement, citizen engagement) focus of North Sea region projects should continue and intensify as it is relevant not only for development and implementation but also for ensuring the durability and transferability of the project solutions and capitalising on them.

#### *Lessons on operational aspects of the VB programme*

In terms of programme operational aspects, the following conclusions based on experience during the VB period should be considered when implementing the VIB programme:

- The VB programme has made good progress on reducing the administrative burden by simplifying procedures. This should be continued and deepened.
- The National Contact Point (NCP) network should continue to be actively engaged and the NCPs and the Joint Secretariat should maintain strong levels of cooperation.
- Active engagement in communication at all levels - from all secretariat staff to projects, NCPs, and other Interreg programmes - is key to effective dissemination and increased visibility of projects and their results and impacts.

#### *Summary of lessons learned*

The VIB programme is in a strong position to address the challenges and territorial needs identified for the 2021-2027 period. Cooperation should continue to strongly focus on transnational issues and solutions, which build on shared strengths and opportunities in the North Sea region and link fragmented actions. In terms of project approaches and operational aspects of the programme, a large degree of continuity from practices in the VB period is recommended, calling for incremental changes in order to continue to deliver high impact transnational cooperation projects.

### **1.2.4 General guidance to potential applicants**

This section draws on conclusions from the previous sections and describes the thematic scope and the structure for the VIB North Sea Programme. This includes the framework of policy objectives and specific objectives selected for the programme, project types and activities, the three spotlight themes selected to add a further dimension to the programme, and how the North Sea Programme will work with other EU-funded programmes to create synergies.

#### ***Structure of the programme***

To support EU-level policies, address regional challenges and strengths, and take on board lessons learned from the VB period the VIB programme is based on four thematic priorities:

##### *Priority 1: Robust and smart economies in the North Sea region*

The objective of this priority is to foster sustainable economic development in the region. Projects under this priority will support regional actors in the public and private

sector to develop resilience in order to protect regional economies and societies in the North Sea region from potential shocks and crises. Priority 1 projects may also focus on maintaining and strengthening regional innovation capacity, on the delivery of innovation and on future-proofing economic structures and actors to meet future demands, e.g., through skills development.

Under this priority, two specific objectives have been selected:

- SO 1.1: Developing and enhancing research and innovation capacities and the uptake of advanced technologies (SO 1.1 in the regulations)
- SO 1.2: Developing skills for Smart Specialisation, industrial transition and entrepreneurship (SO 1.4 in the regulations)

#### *Priority 2: A green transition in the North Sea*

The objective of Priority 2 is to advance the green transition in the region in order to support sustainable development while reducing environmental risks and ecological scarcities. Projects under Priority 2 should contribute to reducing the region's environmental footprint through development of energy efficient measures, renewable energy, smart grids, circular economy and sustainable transport.

Under this priority, five specific objectives have been selected:

- SO2.1: Promoting energy efficiency and reducing greenhouse gas emissions
- SO2.2: Promoting renewable energy in accordance with Directive (EU) 2018/2001, including the sustainability criteria set out therein
- SO2.3: Developing smart energy systems, grids and storage outside the Trans-European Energy Network (TEN-E)
- SO2.4: Promoting the transition to a circular and resource efficient economy (SO 2.6 in the regulations)
- SO2.5: Promoting sustainable multimodal urban mobility, as part of transition to a net zero carbon economy (SO 2.8 in the regulations)

#### *Priority 3: A climate resilient North Sea region*

The objective of Priority 3 is to develop a long-term perspective to preserving the natural environment of the North Sea region and to protect societies from the adverse impact of climate change. Projects under this priority will contribute to climate change adaptation practices and enhancement of biodiversity.

Under this priority, two specific objectives have been selected:

- SO3.1: Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches (SO 2.4 in the regulations)
- SO3.2: Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution (SO 2.7 in the regulations)

#### *Priority 4: Better governance in the North Sea region*

The objective of Priority 4 is to improve multi-level governance structures and increase institutional capacity in governments, international organisations, the EU, NGOs, private

parties and citizens as they participate in governance-related activities. Facilitating and improving multi-level governance not only serves to fortify coordination between governance actors, but also leads to more inclusive consideration of interests.

Under this priority, one specific objective has been selected:

- SO4.1: Other actions to support better cooperation governance (SO 4.1 in the regulations)

An in-depth justification for the selection of each specific objective is provided in section 1.3, while a detailed description of the thematic fields, a non-exhaustive list of actions supported, and expected impacts of each is included in Part 2 of this document.

### ***Project types and activities***

The priorities might be implemented by using different project compositions. In contrast to the type of projects seen in the previous funding period 2014-2020, the concept of small scale projects should be considered, where relevant, composing a shorter time frame, a more limited budget and a smaller partnership.

In general, projects should be planned around a set of joint activities to deliver the outputs and results set out in each specific objective. Projects should also make use of an integrated cross-sectoral approach. Moreover, they should make use of myriad types of activities, which have proven to be successful in previous North Sea region projects, innovative and experimental approaches will also be welcome. These include, but are not limited to:

- pilots/demonstrations
- quadruple helix approach
- network building
- citizen involvement/engagement, e.g. 'citizen science'
- efforts to upscale results and boost impacts

### ***Spotlight themes***

The mentioned EU-level policies and frameworks include topics that were identified as strategically relevant for the VIB North Sea Programme. These topics include digitalisation, rural-urban linkages, and strengths and challenges in the North Sea basin. These have been singled out and highlighted as spotlight themes in the VIB North Sea Programme. They are considered relevant in all four priorities; applicants are encouraged to consider how their project could address one or more of the themes in their project, whether the focus of the project is circular economy, innovation or climate resilience (or other), and include activities that support that theme. References to the themes are made throughout the descriptions of the specific objectives in Part 2. The inclusion of these themes helps to ensure that connected territorial demands are sufficiently addressed by projects. The spotlight themes are also useful for identifying synergies between projects in different priorities.

### *Digitalisation*

Digitalisation is a clear strategic priority in the North Sea region, both on national and regional levels. Digital solutions can offer a way to address the various challenges the region is facing, irrespective of specific objective or priority. By including digitalisation as a spotlight theme, the programme aims to ensure that the region's digital transition and its digital technology transformation reach their full and fair potential for people, businesses and public authorities. Projects are encouraged to make use of up-to-date digital technologies, to implement smart and digital solutions and to foster digital skills. Increasing the connectivity of the region could help to reduce the rural-urban gap, while raising the level of digital skills in most parts of the North Sea region is also an important goal. By including digitalisation as a spotlight theme, the programme aims to promote the digital agenda outlined at EU, national and regional levels across all priorities.

### *Rural-urban linkages*

In much of the North Sea region area there remains a rural-urban divide that the programme wishes to reduce. The divide can be seen in the advantage of urban areas vis-a-vis rural areas in terms of GDP per capita and innovation levels, in the population decline in some rural areas, in the skills gaps between rural and urban areas and in the limited connectivity of rural areas, both in terms of transport connections and digital connectivity. With these gaps in mind, the linkages between 'rural' and 'urban' become an increasingly important component of inclusive territorial development in the North Sea region. This includes both spatial linkages, such as flows of people, goods and knowledge, social networks and relations that span rural and urban locations, as well as linkages between sectors, for example in the fields of circular economy, manufacturing or agriculture.

By including rural-urban linkages as a spotlight theme, the programme aims to actively attract projects that support the development of such linkages and that foster regional development in an inclusive way, drawing on the skills and capacities of the region. This will support a balanced development of the North Sea region as a whole, in which all regions, regardless of location and capacity, have the opportunity to effectively meet the challenges they are facing, to improve the accessibility of rural areas, to deliver growth and jobs to rural communities and to improve the livability inside and outside of the urban centers of the NSR.

During the 2014-2020 programme period the majority of beneficiaries participating in North Sea region projects were based outside large urban areas. In order to further strengthen territorial cohesion in the programme area the projects are encouraged to continue this pattern in the new programme period. It needs to be accompanied by projects that actively address rural-urban gaps by implementing sectoral as well as integrated and multi-level governance approaches with a clear focus on local implementation.

### *Strengths and challenges in the North Sea basin*

The North Sea basin is at the centre of the programme area, and marine and maritime topics are of relevance in all priorities and under all specific objectives. By including 'Strengths and challenges in the North Sea basin' as a spotlight theme, the programme aims to address marine and maritime challenges from different angles by building on the strengths that are already present in the region.

From an economic perspective, the sea basin is an important asset for the region because the activities that take place on and around it help to maintain and strengthen a robust economy. It has been shown that maritime activities such as offshore renewable energy could and should coexist with other activities and that there is, despite conflicting interests and challenges, political will to develop sustainable economic activities in marine protected areas. The development and uptake of innovations in port logistics and shipping, (renewable) energy production, aquaculture, fishing, tourism and recreation are therefore key to increasing both economic and environmental resilience in the North Sea region.

In addition, exploiting offshore sustainable energy resources is important to achieving the EU Green Deal objective to become a climate-neutral continent in 2050. The North Sea has tremendous potential for harnessing renewable energy and producing hydrogen from wind, waves, tide and currents. This needs to be supported by the development of integrated and reliable offshore energy grids.

This spotlight theme is not limited to actions that take place on or in the North Sea, but may include those that focus on interaction between the land and sea environment. Land-sea interactions include natural processes across the land-sea interface and interrelationships between human activities in this zone, both of which could be relevant for transnational cooperation.

### *Making the spotlight themes operational*

Since spotlight themes will run across priorities, and therefore will not have dedicated indicators like the specific objectives, the programme expects to operationalise the themes in the following ways:

1. While projects will not be required to include any of the spotlight themes, they will be asked in the project application whether any of their activities will be related to one or more of the themes. This will be used as a simple way to monitor the take-up of the themes in projects' plans throughout the programme period.
2. The programme may use targeted calls as a way to bring attention to the spotlight themes during the programme period; for example, a call in which projects focus on rural-urban linkages or center on digitalisation.
3. Building on the effort to create and build project community networks toward the end of the VB period, the Joint Secretariat will create a similar opportunity for projects along thematic lines, which may include the spotlight themes.

## **Synergies with other programmes**

Creating synergies and complementarity with other programmes is a key priority for the North Sea Programme. It is being implemented in several ways and addressing many different types of programmes from CBC and TNC Interreg programmes to TEN-T and other centrally managed programmes.

Most members of the national delegations in the MC have seats in the MCs of the adjacent programmes - both transnational and CBC - which helps avoid the duplication of work and projects in other programmes. This mechanism has been in place for several programming periods and has proven effective not just in order to avoid duplication but also in limiting applicants "shopping around" i.e. submitting applications which have previously been rejected by another programme.

The Joint Secretariat is active in a coordination group between the programme and all CBC programmes with Danish participation. The group is self-managed but with a strong presence of the Danish Business Authority (the MA of the programme). The MA is also leading the Danish delegation in the Baltic Sea Programme and policy inputs from this are shared within the group.

On a regional level, the North Sea Programme is participating in a group named "Synergies and Complementarities in the North West area", which is facilitated by Interact. The group is fairly new but aims at promoting synergies between CBC and TNC programmes in the North Western part of Europe. Both the NWE and the North Sea programme are keen to lead the group which also includes CBC programmes. So far the number of participating CBC programmes is limited but it is anticipated that more will join once the programming phase has been completed.

On national and European levels, the German Federal Ministry of the Interior, Building and Community arrange an annual seminar for all TNC programmes with German participation and Interreg Europe. The main purpose of these seminars is to exchange experiences and thoughts and coordinate efforts as much as possible. The seminars have proven very valuable and as a spin-off effect, regular meetings with participation of all the TNC programmes in Europe are arranged. The main purpose of these meetings is to coordinate efforts when necessary and to promote joint communication of the programmes. One of the first examples of this was a joint exhibition stand at the European Week of Regions and Cities in 2018 and a very recent example is a series of joint articles on projects promoting the European Green Deal initiative.

In addition to this, regular meetings take place between the director of the Baltic Sea Programme and the head of secretariat of the North Sea Programme. The main purpose of these meetings is to exchange information on progress made and policy issues and to coordinate efforts as necessary. It is planned to arrange similar coordination meetings with the director of the North West Europe programme.

Coordination with other European programmes like e.g. TEN-T and Horizon takes place in a slightly different way as the North Sea Programme has no direct access to the

decision making bodies in these programmes. Coordination with these programmes is addressed by encouraging projects with activities supplementing larger scale activities in those programmes. Using TEN-T as an example, the North Sea Programme will continue engaging with TEN-T Policy and the CEF Programme through the Interact thematic transport network. The network maintains active contacts with delegates from DG MOVE who continuously update Interreg programmes on relevant developments with regard to the implementation of the TEN-T, missing links as well as promoting sustainability and digitalization. Projects funded by the programme are mainly expected to support the establishment of the TEN-T comprehensive network, for example by piloting smart efficiency enhancements to improve regional accessibility to the core TEN-T corridors. To this end, projects will be encouraged to actively connect to other TEN-T initiatives to find synergies and prevent overlap.

It is, however, worth noting that creating synergies is an on-going process and the initiatives taken so far represent the beginning of this process. More will come over time and some of the existing initiatives may be replaced by new and more efficient initiatives during the delivery of the programme.

### **Horizontal Principles**

Across programme preparation, and more importantly during project selection and during project implementation, the horizontal principles (sustainable development; equal opportunities and non-discrimination and equality between men and women) as set out in Article 3 of the Treaty on the European Union ('TEU') and in Article 10 of the TFEU are considered core values for all involved programme stakeholders, including project beneficiaries. In practice this means that in order to be eligible for funding, project beneficiaries will have to sign a declaration within the project application and reiterate throughout project reporting that these values are adhered to. It is expected that the projects will foster a positive contribution to these horizontal principles.

1.3 Justification for the selection of policy objectives and the Interreg specific objectives, corresponding priorities, specific objectives and the forms of support, addressing, where appropriate, missing links in cross-border infrastructure (Table 1)

Reference: point (c) of Article 17(3)

<b><i>Selected policy objective or selected Interreg- specific objective</i></b>	<b><i>Selected specific objective</i></b>	<b><i>Priority</i></b>	<b><i>Justification for selection</i></b>
Policy Objective 1: A smarter Europe	Developing and enhancing research and innovation capacities and the uptake of advanced technologies (SO1.1)	Robust and smart economies in the North Sea region	<p>The programme selected specific objectives under Policy Objective 1, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in furthering innovation measures throughout the region. These specific objectives are grouped in the programme under Priority 1: Robust and smart economies in the North Sea region.</p> <p>Support for Specific Objective 1.1 under Priority 1 stems from the need to help even out innovation performance scores, which vary among the regions. In order to achieve this aim, participating countries are interested in fostering and boosting the competitiveness of enterprises in the North Sea region through cooperation and collaboration. This should, in turn, lead to a stronger economy.</p> <p>Another reason for selecting this specific objective is the need to provide more efficient and effective public services throughout the region. Given the pressure that public administrations are under to make the most of</p>

			<p>increasingly limited funding, public service innovation is important to ensuring the region's attractiveness and competitiveness. Moreover, social innovation activities, which include policy-makers, public sector and civil society in cooperation projects with business and research actors, can contribute to social and economic resilience by deploying solutions to address social challenges.</p> <p>Ultimately, the North Sea region needs to maintain their pace and spread of innovation in order to remain at the innovative forefront in the European Union. There is a clear need to further strengthen innovation capacities in the North Sea region, to offer a supportive environment for innovation and to foster knowledge and technology transfer. This is especially crucial in order to successfully deal with the green transition and an integrated territorial development of the region. The programme will contribute to this under the specific objective "Developing and enhancing research and innovation capacities and the uptake of advanced technologies".</p>
Policy Objective 1: A smarter Europe	Developing skills for Smart Specialisation, industrial transition and entrepreneurship (SO1.2)	Robust and smart economies in the North Sea region	<p>The programme selected specific objectives under Policy Objective 1, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in furthering innovation measures throughout the region. These specific objectives are grouped in the programme under Priority 1: Robust and smart economies in the North Sea region.</p> <p>Participating countries support the inclusion of Specific Objective 1.2 under Priority 1 because they anticipate the effects of economic crises and demographic changes in the region as well as the impact of the Fourth Industrial Revolution (Industry4.0) and the digital, green and blue transitions, which are well underway. To help smooth these transitions and take advantage of their positive aspects, the region needs a workforce with up-to-date knowledge and improved digital and entrepreneurial skills, especially in</p>

			<p>SMEs, which serve as the foundation for business competitiveness, innovation and growth in the region.</p> <p>Specific Objective 1.2 addresses these needs. Smart Specialisation unlocks specific assets and competencies of regional economic structures and knowledge bases. By connecting skill development to sectors that are of strategic relevance, the North Sea region can secure its strong and innovative knowledge economies for the future.</p> <p>In addition to Smart Specialisation, the region needs a workforce with sharp entrepreneurial skills in order to be able to implement ideas and seize opportunities quickly and effectively, as well as digital skills to foster the transition to Industry4.0. SMEs that have these abilities should be competitive in global markets and will be in a position to harvest the benefits of their work in the region.</p> <p>Future sustainable economic and social development will ultimately rely on human capital in the broadest sense: graduates, professionals and job seekers with the knowledge, skills and competences to think creatively and critically. The programme will therefore contribute to developing skills for Smart Specialisation, industrial transition and entrepreneurship to build robust and smart economies in the North Sea region.</p>
Policy Objective 2: A greener Europe	Promoting energy efficiency and reducing greenhouse gas emissions (SO2.1)	A green transition in the North Sea region	The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific objective 2.1 lies within Priority 2.

			<p>Projects under Specific Objective 2.1 will aim to support energy efficiency and energy savings, which can easily be translated as the overall reduction of energy use – regardless of the target groups and sectors involved. Specific actions are focusing on refurbishment of buildings, overall reduction of CO2 emissions in all kinds of industries and sectors and low-carbon solutions that contribute towards energy efficiency across the North Sea region. It is expected that the measures will contribute to the EU energy efficiency target for 2030 (which has a baseline of 32,5%).</p> <p>Unlocking transnational solutions is the key to meeting the challenging goals of the EU's key targets in relation to energy efficiency. Future pilots, demonstrations and concepts within energy efficiency improvements and greenhouse gas reductions are essential to how we produce, deliver and consume energy. The programme can play a pivotal role in furthering the fulfillment of the efficient use of energy through the projects it supports.</p>
Policy Objective 2: A greener Europe	Promoting renewable energy in accordance with Directive (EU) 2018/2001, including the sustainability criteria set out therein (SO2.2)	A green transition in the North Sea region	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific objective 2.2 lies within Priority 2.</p> <p>Specific objective 2.2. addresses relevant renewable energy technologies in fields such as biomass, hydrogen, solar, wave, hydro and wind. All of these areas will contribute towards the clean energy transition in the EU. Emphasis on hydrogen applications such as renewable energy electrolysers within industrial applications and mobility will further contribute towards a low-carbon economy. Actions in the on- and offshore wind sectors are considered of special importance within the North Sea region due to the region's location</p>

			around and near the sea. The measures explored and tested in projects will positively influence the interim target to raise the share of renewable energy to 40% of final consumption by 2030 within the EU.
Policy Objective 2: A greener Europe	Developing smart energy systems, grids and storage outside the Trans-European Energy Network (TEN-E) (SO2.3)	A green transition in the North Sea region	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific objective 2.3 lies within Priority 2.</p> <p>The overall objective of Specific Objective 2.3 is to ensure the overall energy capacity is being used as best as possible in relation to and between grids and storage. Projects under Specific Objective 2.3 will aim to support various energy carriers such as cold, gas, electricity, heat, solid and liquid fuels to further cooperate in developing existing and emerging technologies; development of smart grids, such as integration of residential and industrial consumers through energy management technology devices; and to create a functional grid-market hub to connect consumers and grids.</p> <p>The objective is to foster pilots, demonstrations and concepts that will capture short-term energy shortages and at the same time effectively store energy when demand is low. Examples of such actions are fostering electrical storage systems, enhancing new grid protection schemes for transmission system operators. Awareness raising of long-term benefits of green energy production, storage and transmission are also actions that will contribute to developing smart energy systems, grids and storage within the North Sea region.</p>

<p>Policy Objective 2: A greener Europe</p>	<p>Promoting the transition to a circular and resource efficient economy (SO2.4)</p>	<p>A green transition in the North Sea region</p>	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific Objective 2.4 lies within Priority 2.</p> <p>Participating countries selected Specific Objective 2.4 for several reasons. First, an increased focus on the transition to a circular economy benefits the environment in the region. It reduces the resource dependency and negative impacts of production and can assist in reducing waste. It is also an opportunity to reduce pollution levels in the region.</p> <p>Second, several areas in the North Sea region have seen a strong uptake of circular production and services, while others have below EU average employment numbers in this field. By stimulating the circular economy, regions can ensure a further uptake of circular production and services. The innovative capacity of the North Sea region can be a strong asset to further this transition and can boost jobs and opportunities for companies in the region. In order for the circular economy to grow it is crucial that different actors such as SME's, knowledge institutions and governments work together to drive demand and initiate products and services. Projects in the programme can foster this.</p> <p>The circular economy is a building block of the European Green Deal and with the Circular Economy Action Plan it aims to accelerate its green transition. The new plan for Europe's circular economy aims to make sustainable products the norm in the EU, increase the accessibility of information on reparability and durability of a product and focus on sectors with a high</p>
---	--	---	--

			potential for circularity and ultimately ensure less waste. Several regions have started the transition. The programme will stimulate a further uptake to solidify new markets and products in this field.
Policy Objective 2: A greener Europe	Promoting sustainable multimodal urban mobility, as part of transition to a net zero carbon economy (SO2.5)	A green transition in the North Sea region	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific Objective 2.5 lies within Priority 2.</p> <p>Transport of people and goods is one of the main sources of greenhouse gas emissions and air pollution in the North Sea region. This is especially true in urban areas and in their connecting hinterlands, but regional and international transport, including shipping, is also growing sources of emissions. Given the number of large metropolitan areas in the North Sea region and the programme's commitment to the pillars of the EU Green Deal, the selection of this specific objective was logical. The programme also has a history of supporting transport-related projects, with good results.</p> <p>Projects under Specific Objective 2.5 will aim to support sustainable and multimodal initiatives, including mobility of people and the supply chains of the connected hinterland areas in the North Sea region. They will promote climate neutral transport modes, contribute to carbon-effective mobility and encourage the demonstration and use of available or newly developed green transport solutions. Given the large number of major port cities in the North Sea region, there will also be a focus on developing green transport solutions to and from harbours. The ultimate expectation is that these solutions will affect a long-term reduction in greenhouse gas emissions, one of the key aims of the EU Green Deal.</p>

<p>Policy Objective 2: A greener Europe</p>	<p>Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches (SO3.1)</p>	<p>A climate resilient North Sea region</p>	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific Objective 3.1 lies within Priority 3.</p> <p>Specific Objective 3.1 addresses the North Sea region's need to develop measures to adapt to the effects of climate change. The North Sea region is under threat from rising sea levels, extreme weather patterns, and other signs of a warming planet. Compounding these threats is the fact that much of the region is low-lying and coastal, which makes the situation that much more urgent. Flooding is one of the major threats caused by the frequency and severity of storms; drought is another, caused by the absence of rain. Mountainous areas are impacted by changes to winter precipitation, e.g. less snowfall. Larger extremes and seasonal changes in precipitation throughout the region can have considerable impacts on society, including the built environment, agriculture, industry, infrastructure and range of vital ecosystems.</p> <p>This specific objective is supported by the programme because projects under it will be able to develop multifunctional, adaptable and nature based solutions that deliver more sustainable solutions across the North Sea region. These will exploit the close links between climate adaptation and resilience and issues and challenges for sustainable water management of catchments, watercourses and rivers and coastal waters. Transnational cooperation will allow the development of joint solutions to problems that plague many of the regions around the North Sea.</p>
---	--	---	--

<p>Policy Objective 2: A greener Europe</p>	<p>Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution (SO3.2)</p>	<p>A climate resilient North Sea region</p>	<p>The programme selected specific objectives under Policy Objective 2, as recommended by the Commission in the programme's Orientation Paper, due to the participating countries' interest in contributing to the pillars of the EU Green Deal. The specific objectives under Policy Objective 2 are grouped in the programme under two priorities: Priority 2: A green transition in the North Sea region and Priority 3: A climate resilient North Sea region. Specific Objective 3.2 lies within Priority 3.</p> <p>Specific Objective 3.2 addresses the region's need to protect, preserve, and restore biodiversity and ecosystems in the North Sea as well as on land. Animals, plants and the systems that keep nature in balance are falling victim to the effects of climate change, and their destruction has a knock on effect around the world. The North Sea region is not immune. Increasing population density, urbanisation and high intensity of use within agriculture, transport and industry contribute to these problems. Although sustainable management of ecosystems and biodiversity is well developed in the region, pollution across the North Sea region, including marine pollution, poses a threat to the environment and human health.</p> <p>Ecosystems and biodiversity contribute to broader well-being and must be protected due to their value as natural assets. On the other hand, natural resources are very important for the business sector, e.g. Blue Growth. Many services and products such as shipping, fisheries or wind energy production require healthy (marine) ecosystem services. Thus, there is the need in rural and urban areas as well as marine and coastal spaces in the North Sea region to cooperate transnationally and focus on the protection, restoration of ecosystems, including those to reduce marine pollution and litter. A focus should also be on the enhancement of ecosystem services of green infrastructure for the public good.</p>
---	--	---	--

<p>Interreg Specific Objective 1: Better cooperation governance</p>	<p>Other actions to support better cooperation governance (SO4.1)</p>	<p>Better governance in the North Sea region</p>	<p>The North Sea region encompasses an intricate network of governance interdependencies, which can be a complicating factor when it comes to tackling socio-economic, environmental or economic challenges. Priority 4 is included in the programme to improve cooperation and coordination in the region, not only between all levels of government, but also between international organisations, the EU, NGOs, private parties and citizens. The overall objective is to address joint challenges and support green and just development in the North Sea region by improving multi-level governance.</p> <p>A specific challenge is the governance of the North Sea basin, which as one of the busiest marine areas in the world, is the most important joint asset of the region. In addition, it is a challenge for the region to overcome territorial inequalities in the region by supporting integrated territorial development and improving urban-rural cooperation governance. These land- and sea based challenges should be addressed by improving multi-level governance structures and networks, making them more inclusive and increasing institutional capacity in key stakeholders.</p> <p>Priority 4 will embed individual actions in broadly supported and long-term frameworks, strategies, action plans and networks, as well as set the stage for future actions. This will not only improve coordination between actions, but also ensure their long-term effects and increase their cumulative positive impact on the region.</p>
---	---	--	--

## 2 Priorities

*Reference: points (d) and (e) of Article 17(3)*

### 2.1 Priority 1: Robust and smart economies in the North Sea region

*Reference: Article 17(3)(d)*

2.1.1 Specific objective 1: Developing and enhancing research and innovation capacities and the uptake of advanced technologies (SO1.1)

*Reference: Article 17(3)(e)*

2.1.1.1 Related types of action

*Reference: Article 17(3)(e)(i)*

#### **Territorial needs in the North Sea region**

Research and innovation are central to robust and smart economies and resilient territorial development in the North Sea region, driving, enabling and accelerating the shift towards a green and digital transition of our society. The region represents the innovation core of Europe, hosting world leading innovative industries next to more traditional sectors. In addition, due to their location around the North Sea, sectors within the Blue Economy are of importance for economic strength and competitiveness in the region. However, innovation performance scores vary between regions, with the urban and intermediate regions performing better than rural regions. Moreover, there are limitations to collaboration between innovative SMEs and the proportion of SMEs introducing marketing or organizational innovations. In order to foster robust economies, enterprises (especially SMEs) should maintain and improve competitiveness through continuous innovation and cooperation.

An innovative, cost-efficient and effective public sector is also an enabler of a robust economy. In many countries, public sector finances are under pressure and there is a need to deliver public services more effectively and efficiently than is being done. Public sector innovation is therefore relevant to ensure the continued attractiveness and competitiveness of the region. The public sector can also stimulate innovation in the wider economy through public procurement and as a broker of innovation networks. Social innovation also contributes to developing social and economic resilience, as a robust economy depends on public authorities and enterprises developing and deploying effective solutions to address social challenges and issues. These goals can best be addressed by including policy-makers, the public sector and civil society in cooperation projects with businesses and researchers.

In order to remain at the innovative forefront in the EU, North Sea region actors need to maintain their pace and spread of innovation. There is a clear need to strengthen innovation capacities in the North Sea region, offer a supportive environment for innovation and foster knowledge and technology transfer. This is also crucial in order to support the green transition and an integrated territorial development of the region.

### **Transnational cooperation actions**

Projects funded under this specific objective will support an innovation-driven smart and robust North Sea region. Innovation is understood in broad terms, encompassing process, product and service innovation and multi-sectoral approaches. It is related to technical solutions as well as public services and societal challenges. Projects will also move beyond networking and knowledge exchange and support research, development and innovation activities that are implemented as demonstration and pilot projects.

The primary goal of this specific objective is to develop transnational processes and procedures to foster innovation capacity and to carve out new innovation-focused economic and social opportunities. It aims to create effective innovation ecosystems, rather than offer direct support to individual actors and support one-off cases of innovation.

Actions should support the development and strengthening of regional innovation and research that are needed in sectors with innovation potential. They should also support the delivery of innovation by facilitating cooperation and joint initiatives between actors and by stimulating the development of new technologies and innovative solutions. Actions should also support the exploitation of research outcomes, bring research to the market and support the uptake of new technologies and solutions.

In addition, actions under SO1.1 should target areas that benefit from transnational cooperation and that build on the competitive strengths of the region. Support for challenge-driven topics that are in line with the priorities of the North Sea Programme will be prioritized. Particular focus will be on the challenges identified under the priority "Green transition," but activities funded under this objective will also be open to demand-driven projects in other fields. Innovation projects should also build on territorial needs and gaps, such as the urban-rural divide, and contribute to territorial cohesion.

The following is a non-exhaustive list of fields that have potential for transnational RDI cooperation:

- Green economy, e.g. low-carbon solutions, energy transition
- Social and societal innovation
- Waste management, circular economy
- Public sector innovation
- Industrial modernization, Industry 4.0 and manufacturing
- Marine, maritime and blue growth sectors
- Agri + food, bioeconomy, tourism
- Transport, e.g. in relation to smart cities, electrification and automation

- Other focus areas of the region's Smart Specialisation strategies

It should be noted that lower TRLs (Technology Readiness Levels) are not a priority for the programme and TRL1 (basic/fundamental research) is excluded from support, unless linked to higher level applied, demonstration or exploitation activities related to demand-driven business or societal needs. The programme encourages projects to aspire to TRL5 and above.

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

### **Examples of actions supported (non-exhaustive list):**

- Developing innovation support measures and transnational innovation networks and clusters, complementary to networks that already exist,
- Developing and implementing new technologies, products, processes and services in order to address transnational challenges
- Supporting knowledge partnerships of innovation actors and stimulating transnational cooperation between businesses, research institutions, governments and social institutions to develop new or improved links
- Fostering technology and innovation transfer from research to business; stimulating the commercial take-up of research results and entry of innovations onto the market
- Supporting public administrations to use public investments as a driver for innovation, e.g. through better incentives and capacity-building workshops, and facilitating SMEs' participation in (public) procurement processes
- Enhancing the cooperation between innovation actors and civil society that commonly support the uptake of innovation technologies to shape the innovation ecosystem
- Developing transnational support tools for SMEs and entrepreneurs to increase their innovation capacity and incorporate research and technological innovations
- Exploiting new sources of SME growth such as the green economy, health and social services and promoting place-based development opportunities, e.g. in tourism and blue growth
- Improving access to innovation support for actors in rural areas to reduce innovation gaps in region's non-urban areas and reinforce urban-rural linkages in the innovation support field

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

### **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- improved framework conditions for innovation and reduction of barriers to innovation
- strengthened innovation capacity across the region
- increased interaction between innovation centers and actors
- increased SME/public sector innovation and initiation of new products, services and processes
- increased uptake of novel technologies
- reduced gap in innovation support and performance in non-urban areas

Beyond working towards these impacts, this specific objective might also contribute to wider, more long-term effects, such as the retention and creation of jobs in the North Sea area.

### 2.1.1.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
1	SO 1.1	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	9	46
1	SO 1.1	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	36	179
1	SO 1.1	RCO 87	Organisations cooperating across borders	Organisations	24	122

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
1	SO 1.1	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	41	Online monitoring system	
1	SO 1.1	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	134	Online monitoring system	
1	SO 1.1	RCR 150	Capacity-building of organisations	Capacity	0	2021	553	Online Monitoring System	

### 2.1.1.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority:

- National, regional and local public authorities
- Business support stakeholders such as regional innovation agencies, cluster organisations and chambers of commerce
- Sectoral agencies
- Higher education and research organisations
- Education and training organisations
- Enterprises including SMEs
- Infrastructure and (public) service providers
- General public/citizens
- Other public organisations

2.1.1.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	1	ERDF	SO 1.1	008 Research and innovation activities in small and medium-sized enterprises, including networking	8.249.608
	1	ERDF	SO 1.1	009 Research and innovation activities in public research centres, higher education and centres of competence including networking (industrial research, experimental development, feasibility studies)	8.249.608
	1	ERDF	SO 1.1	021 Technology transfer and cooperation between enterprises, research centres and higher education sector	8.249.608
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	1	ERDF	SO 1.1	01 Grant	24.748.825
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	1	ERDF	SO 1.1	33 No territorial targeting	24.748.825

## 2.1.2 Specific objective 1.2: Developing skills for smart specialization, industrial transition and entrepreneurship (SO1.4)

*Reference: Article 17(3)(e)*

### 2.1.2.1 Related types of action

*Reference: Article 17(3)(e)(i)*

#### **Territorial needs in the North Sea region**

The North Sea region societies and labour markets have changed dramatically over recent decades and will continue to be transformed by the impact of the Fourth Industrial Revolution (Industry4.0), the digital, green and blue transitions, the effects of economic crises and demographic changes. Therefore, a workforce with up-to-date knowledge and improved digital and entrepreneurial skills is needed, especially in SMEs, which serve as the foundation for business competitiveness, innovation and growth in the region. Future sustainable economic and social development will ultimately rely on human capital in the broadest sense: graduates, professionals and job seekers with the knowledge, skills and competences to think creatively and critically.

An important tool to assist European regions to identify and develop their competitive advantages is the Smart Specialisation approach. Smart Specialisation unlocks specific assets and competencies of regional economic structures and knowledge bases through diversification. By connecting skill development to sectors that are of strategic relevance and promoting cross-overs into new or related fields, the North Sea region can secure its strong and innovative knowledge economies for the future.

In addition, improved entrepreneurial skills are needed in SMEs to enable them to act and transform ideas and opportunities into shared economic or social value. In order for SMEs in the region to remain competitive in global markets, there is a need for skills such as risk management, strategic thinking, networking and problem solving.

Building skills can improve social and economic cohesion between rural and urban areas. Although the North Sea region has a generally highly-skilled workforce, inequalities between urban and rural areas remain, with more highly-skilled workers concentrated in urban areas. To overcome territorial gaps and support an equal territorial development it is essential to ensure a just development of skills, especially those linked to Smart Specialisation strategies.

#### **Transnational cooperation actions**

Actions funded under this specific objective will enhance transnational knowledge transfer to develop solutions that improve human capital, especially in common Smart Specialisation focus areas. Improved and new skills will be a prerequisite for the uptake and development of product, service and process innovations. This will ultimately also result in the creation of new and more productive jobs.

Actions funded under this specific objective could have a strategic focus on identifying and developing tools to overcome barriers that create regional skills gaps. Initiatives that create strong regional skill networks and clusters and increase collaboration between different parts and levels of the education system, science, governments, SMEs and end-users are encouraged. Actions could also promote target groups to think outside silos and promote cross-sectoral and interdisciplinary learning.

Joint actions funded under this specific objective could focus on skills development to strengthen regional capacities in common Smart Specialisation focus areas, to prepare for the industrial transition or to foster entrepreneurship. While it is expected that actions will be demand driven and would therefore center around common Smart Specialisation focus areas, actions may also target other thematic fields. The following fields have strong potential for transnational cooperation in skills development:

- Energy and environmental technologies, the most common Smart Specialisation focus areas across the NSR
- The areas of food, agriculture and/or bioeconomy, industrial modernisation, additive manufacturing, life sciences and/or health tech, prominent across the NSR in Smart Specialisation strategies
- Maritime and marine fields
- Mobility, transport and logistics
- Circular economy
- Sustainable tourism, especially in rural areas

The list of fields above is non-exhaustive, and it should be stressed that this specific objective has a broad thematic approach, which means that the programme will not be limited to certain focus areas or sectors. Moreover, the programme encourages demand-driven projects that have a cross-sectoral approach. Actions under this priority should address the territorial differences between the cities and regions of the North Sea region. Actions should be inclusive and follow the citizen-oriented approach.

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

**Examples of actions supported (non-exhaustive list):**

- Identifying and overcoming skills gaps in green technology sectors (as common Smart Specialisation focus areas) to support the development and uptake of new innovative products and processes.
- Developing knowledge and skills for improved decision making in the transport sector to increase the uptake of alternative fuels and multimodal transport solutions.
- Providing training schemes for entrepreneurial skills to SMEs to support lifelong learning and help them identify and adopt new sustainable and smart business concepts.

- Promoting cross-sectoral learning to close the linear model of producing and consuming goods and services in the transition to a circular economy with a specific focus on the development of rural areas.
- Improving digital skills in the tourism and cultural heritage sectors to prepare for the digital transformation and to develop sustainable housing concepts in touristic areas.
- Improving SME access to digital know-how and technology by providing an incentive to connect with ICT knowledge and service providers.
- Improving educational curricula for maritime and inland waterway shipping crews to meet the growing demand for a workforce trained in new tools or methods.
- Preventing brain drains in rural regions by developing and building on strategic priority areas and developing tools to retain talent and entrepreneurial skills.
- Helping SMEs to access opportunities in the single market, in the global market and to international value chains by developing entrepreneurial skills for internationalisation.
- Supporting citizens to become social innovators by developing their skills and competences related to social entrepreneurship and innovation.
- Developing skills to enhance regional innovation ecosystems (entrepreneurs, public administration, science and civil society) and to support the development and uptake of new products and services.

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Increased and improved human capital in Smart Specialisation focus areas, especially in terms of up-to-date and digital skills and knowledge
- Strengthened entrepreneurial competencies and increased competitiveness in Smart Specialisation sectors and SMEs
- Improved alignment between skills development and labour market demand
- New jobs and increased productivity
- Increased level of education in rural areas
- Increased interaction between different parts of the education system, civil society and the smart specialization sectors, for example in new or strengthened clusters and networks
- Increased cross-sectoral and interdisciplinary learning

### 2.1.2.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
1	SO 1.2	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	9	46
1	SO 1.2	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	36	179
1	SO 1.2	RCO 87	Organisations cooperating across borders	Organisations	24	122

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
1	SO 1.2	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	41	Online monitoring system	
1	SO 1.2	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	134	Online monitoring system	
1	SO 1.2	RCR 150	Capacity-building of organisations	Capacity	0	2021	553	Online Monitoring System	

### 2.1.2.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education/training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public
- Hospitals and medical centres

2.1.2.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	1	ERDF	SO 1.2	016 Skills development for smart specialisation, industrial transition and entrepreneurship	24.748.825
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	1	ERDF	SO 1.2	01 Grant	24.748.825
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	1	ERDF	SO 1.2	33 No territorial targeting	24.748.825

## **2.2 Priority 2: A green transition in the North Sea region**

*Reference: Article 17(3)(d)*

### **2.2.1 Specific objective 2.1: Promoting energy efficiency and reducing greenhouse gas emissions (SO2.1)**

*Reference: Article 17(3)(e)*

#### **2.2.1.1 Related types of actions**

*Reference: Article 17(3)(e)(i)*

### **Territorial needs in the North Sea region**

A green energy transition is of strategic importance for the North Sea region as countries across the region work to reduce greenhouse gas emissions and become climate neutral by 2050. The North Sea region aims to advance its competitive position by leading on the development of an overall energy framework that will enhance and promote the implementation of the EU's Green Deal and Energy Efficiency Directive (EU/2018/2002). Moreover, the region's countries will contribute to the goals of the European Green Deal's twin policy, the Shaping Europe's Digital Future policy, by capitalizing on strengths in innovative energy savings measures and low emission solutions.

Energy efficiency measures have been recognised as an effective tool for achieving a low-carbon economy. They can lead to numerous additional benefits, such as an increase in employment and GDP, positive effects on public budgets, improved local air quality, and improvements in health and well-being. Energy efficiency can be achieved in traditional green sectors, but other sectors can also play their part. For example, energy reductions can be achieved in the building sector through the renovation and refurbishment of buildings, which are responsible for 40% of the EU's energy consumption and 36% of greenhouse gas emissions. These impacts can be minimized by improving existing buildings' energy ratings.

Increased challenges for the public sector are also identified in the revised Energy Efficient Directive. The key challenge for the public sector is to implement key efficiency measures in various areas such as water, street lightning, transport and buildings. Public bodies will also need to systematically take into account energy efficiency requirements in their procurement of products, services, buildings and works. Similar actions are required by the private sector: companies are encouraged to carry out measures that will help end users increase energy efficiency in their homes. This can include improving the heating system in consumers' residences, installing double glazed windows, or better insulating roofs.

The drive to test solutions to reduce our impact on the climate also continues. The use of carbon capture storage (CCS) is an example of such a solution. CCS involves capturing

the carbon dioxide (CO<sub>2</sub>) from power plants or industrial installations, transporting it to designated sites, and injecting it into geological formations from which it cannot escape.

In light of these challenges and developments, there is a clear need to continue to support the key actors in the North Sea region in working towards energy savings and retain the region's strong economic and innovative position in the relevant sectors. This is also in line with the North Sea region 2030 Strategy and the EU's 'Fit for 55' initiative, the aim of which is to reduce emissions by at least 55% by 2030.

### **Transnational cooperation actions**

Under this specific objective, the programme will support transnational projects that contribute to the reduction of overall energy use and long-term greenhouse gas emissions savings across the North Sea region. This objective builds on the momentum from previous programme periods to increase the uptake of new technologies and processes and take practical steps to reduce energy use and greenhouse gases. The North Sea region continues to be a world leader in green industry and should consolidate its position in order to protect the environment.

Projects under this specific objective can aim for energy efficiency and long-term greenhouse gas reduction in traditionally green sectors or across all sectors in the North Sea region where there is potential for energy savings. Projects can, for example, explore new approaches for reducing energy use in buildings by refurbishment to support healthy and climate smart housing and premises. Focusing on energy efficient buildings will result in lower energy bills and reduced energy demand. These changes will lead to better air quality and improved health. In addition, actions that contribute to the Energy Performance Certificate (EPCs) and the enhancement of the energy performance of buildings are also welcome. Projects under this specific objective are expected to move beyond networking and knowledge exchange and support activities that are implemented as demonstration and pilot projects. However, targeting consumer behaviour and consumer empowerment aspects in promoting energy efficiency can also play a part in this objective. Actions can include incentives for consumers to realise energy efficiency improvements and to tackle high upfront costs and the split incentives problem.

~~Reduction of CO<sub>2</sub> emissions and energy saving could also be foreseen in the food, agriculture, aquaculture and forestry-related industries.~~ Digitalisation is highly relevant to achieve the aim of this specific objective, as digital solutions can contribute to the improvement of forecasting of asset optimisation, including the on-site use of self-generation. This is also relevant for energy and smart societies – actions towards energy efficiency related solutions linked to bridging the gap between and within cities and rural areas..

Energy is a complex issue with many stakeholders, regulations and various limitations in relation to content. Projects should help partners to identify realistic options within these constraints and demonstrate the carbon reductions that can be achieved, building

on the many good examples available of regional and district energy planning and implementation.

Actions should be based on fields that offer significant potential for energy savings and long-term emissions reduction in the participating regions and that build on the competitive strengths of the North Sea region. The following is a non-exhaustive list of fields that have potential for transnational cooperation:

- Low-carbon solutions
- Energy efficient and refurbished buildings
- Energy supply chains
- Industrial design and manufacturing
- Carbon Capture solutions
- Rural and urban business- and household energy

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

Examples of actions supported (non-exhaustive list):

- Fostering the deployment of renovation of buildings with a clear added value to already existing initiatives. Supporting the continuous growth of nearly zero-energy buildings (NZEB)
- Stimulating measures for health and well-being and smart technology (smart meters, self-regulation equipment) in new buildings
- Increasing energy efficiency in ports
- Eliminating emissions in logistics chains
- Helping to develop energy supply chains on local and regional levels, e.g. 'waste heat' in urban areas, closed energy supply chains
- Awareness raising of greening methods and results
- Implementing pilots to identify energy resource savings through innovative industrial design and manufacturing processes
- Reducing overall energy use by changing behaviour and increasing take-up of energy-saving technologies
- Encouraging cross-disciplinary, systems-level approaches to secure higher energy efficiency in the urban environment.

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Reduction of greenhouse gas emissions
- Increased uptake of novel technologies in all relevant energy sectors and fields of operations
- Strengthened renovation & refurbishment in an energy & resource efficient way
- Strengthened regional energy cooperation
- Increased readiness for the continuous uptake of digital solutions in relation to energy efficiency and greenhouse gas emissions

## 2.2.4.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
2	SO 2.1	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	4	19
2	SO 2.1	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	15	75
2	SO 2.1	RCO 87	Organisations cooperating across borders	Organisations	10	51

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
2	SO 2.1	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	17	Online monitoring system	
2	SO 2.1	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	56	Online monitoring system	
2	SO 2.1	RCR 150	Capacity-building of organisations	Capacity	0	2021	233	Online Monitoring System	

### 2.2.1.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within the energy priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education / training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public

2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	2	ERDF	SO 2.1	024 Energy efficiency and demonstration projects in SMEs and supporting measures	5.244.063
	2	ERDF	SO 2.1	025 Energy efficiency renovation of existing housing stock, demonstration projects and supporting measures	5.244.063
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.1	01 Grant	10.488.126
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.1	33 No territorial targeting	10.488.126

## 2.2.2 Specific objective 2.2: Promoting renewable energy in accordance with Directive (EU) 2018/2001, including the sustainability criteria set out therein (SO2.2)

*Reference: Article 17(3)(e)*

### 2.2.2.1 Related types of actions

*Reference: Article 17(3)(e)(i)*

#### **Territorial needs in the North Sea region**

The countries in the North Sea region have traditionally relied heavily on coal, oil, and other fossil fuels for their energy supply, which contribute to high GHG levels. However, the region is now rapidly transitioning towards the use of greener and cleaner energy resources. Increased use of energy from renewable sources plays an important role in tackling climate change and securing a reliable energy supply for the future. In addition, renewable energy technologies provide opportunities for employment and regional development, especially in rural areas, as well as health benefits by reducing pollution emitted during the production of fossil fuel-based energy.

The North Sea region is an innovation leader in renewable energy technologies in fields such as wind, solar, hydrogen, biomass, and blue energy. By 2019, the share of renewable energy in gross final energy consumption was high in some North Sea countries, but substantially lower in others: Norway 74.6%, Sweden 56.4%, Netherlands 8.8%, Germany 17.4%, Denmark 37.2% Belgium 9.9% and France 17.2% [19]. Further uptake of renewable energy technologies and processes needs to increase in all countries in order to facilitate a joint transition towards a green economy. This will contribute to achieving the Green Deal objective to become carbon neutral by 2050 and the interim target to raise the share of renewable energy to 40% of final consumption by 2030.

The North Sea has a natural potential for producing offshore energy thanks to shallow water and localized potential for wave and tidal energy. Research has shown that modern offshore renewable energy technologies will be a cornerstone of the clean energy transition in the EU. The EU strategy on offshore renewable energy emphasises the potential scope of such energy, calling it 'among the renewable technologies with the greatest potential to scale up.' The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00). An important stakeholder in this effort is the North Seas Energy Cooperation, which supports and facilitates the development of the renewable energy potential in the region. Their work programme for the coming years emphasises the development of cross-border offshore wind projects with the potential to reduce costs and space of offshore developments.

The share of renewable energy has increased and will continue to increase in the region, mainly due to large scale offshore wind energy investments. Two main drivers of

this increase are support schemes for renewable energy technologies and shrinking construction and operation costs. Since the world's first offshore wind farm was installed in Vindeby in 1991 off the coast of Denmark, offshore wind energy has become a mature, large-scale technology providing energy for millions of people across the globe. The five European countries with the largest amount of offshore wind capacity border the North Sea. However, off-shore wind farm development in the North Sea should be further accelerated, since under current policies the present and projected installation capacity would lead to only approximately 90 GW in 2050 – well short of the aim of 300 GW, detailed in the EU strategy on offshore renewable energy.

Hydrogen applications are expected to support the transition towards a renewable energy system. The European Commission published its hydrogen strategy for a climate-neutral Europe in July 2020. It sets strategic objectives to install at least 6 GW of renewable hydrogen electrolyzers by 2024 and at least 40 GW of renewable hydrogen electrolyzers by 2030 and foresees industrial applications and mobility as the two main lead markets. The North Sea region will continue to play a pivotal role in this regard.

### **Transnational cooperation actions**

The aim of this specific objective is to develop or scale-up approaches to promote renewable energy and, in the long-term, contribute to the reduction of carbon emissions. The region should maintain momentum by spreading awareness of practical steps that can already be taken and promoting the take up of innovative technologies and processes. Funded actions are expected to facilitate knowledge exchange on innovative renewable energy solutions in order to support the development, piloting and adoption of technologies and processes across the region. Actions under this specific objective will contribute to the region's transition to a low-carbon economy and support the uptake of clean energy. To this end actions are expected to address the supply and demand of renewable energies on local and regional levels, which is vital to fostering incentives for renewable energy solutions.

Actions could focus on supportive measures for the already commercially operational bottom fixed offshore wind technology or on floating wind turbines, which are at an early technological adaptation phase. Fields such as wave, tidal converters, and solar energy (offshore photovoltaic panels) are also promising fields for cooperation. Additionally, actions could focus on sustainable biomass production which involves activities ranging from the growing of feedstock to final energy conversion.

Another key action area is 'green' or 'clean' hydrogen,. Actions in the field of hydrogen funded by the programme are expected to focus on hydrogen in relation to feedstock, fuel or as an energy carrier and storage, which have potential for future large scale deployment. This also includes actions on renewable electricity since this is a key component in the production of green electrolytic hydrogen, for instance in above mentioned sectors such as onshore wind, bottom-fixed and floating offshore wind.

Projects under this specific objective will move beyond networking and knowledge exchange and support activities that are implemented as demonstration and pilot projects; financing of large energy infrastructure or installations is not supported in the framework of the programme.

The following is a non-exhaustive list of fields that have potential for transnational cooperation:

- On- and offshore wind energy
- Solar energy
- Wave and tidal energy
- Hydro energy
- Biomass
- Hydrogen

It should be noted that projects in the field of biomass should comply with the sustainability criteria as set out in Directive (EU) 2018/2001, Article 29(2) to (7).

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

Examples of actions supported (non-exhaustive list):

- Supporting the uptake of renewable energy technologies through transnational exchange of knowledge and good practices
- Increasing cost-efficiency of renewable energy systems by implementing smart maintenance concepts
- Developing and piloting dual use concepts for offshore wind farms
- Implementing digital solutions in the field of renewable energy
- Developing new demand side concepts to increase the share of renewable energy in the total energy demand of energy consumers
- Exploring the potential for rural regions of novel renewable energy technologies, such as tidal energy
- Supporting the bridge between the technologies of renewable energies of today and those of the future
- Stimulating the increased use and production of fossil-free energy systems

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

- Increased uptake of renewable energy technologies in all relevant energy sectors and fields of operations
- Increased employment in renewable energy sector

- Improved air quality and public health
- Long-term contribution to the reduction of greenhouse gas emissions (not measurable during programme implementation)

### 2.2.4.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
2	SO 2.2	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	4	19
2	SO 2.2	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	15	75
2	SO 2.2	RCO 87	Organisations cooperating across borders	Organisations	10	51

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
2	SO 2.2	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	17	Online monitoring system	
2	SO 2.2	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	56	Online monitoring system	
2	SO 2.2	RCR 150	Capacity-building of organisations	Capacity	0	2021	233	Online Monitoring System	

### 2.2.2.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within the energy priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education / training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public
- Citizen energy cooperatives

2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(4)(e)(vi), Article 17(9)(c)(v)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 - intervention field	2	ERDF	SO 2.2	032 Other renewable energy (including geothermal energy)	10.488.126
Table 5 Dimension 2 - form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.2	01 Grant	10. 488.126
Table 6 Dimension 3 - territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.2	33 No territorial targeting	10. 488.126

## 2.2.3 Specific objective 2.3: Developing smart energy systems, grids and storage outside the Trans-European Energy Network (TEN-E) (SO2.3)

*Reference: Article 17(3)(e)*

### 2.2.3.1 Related types of actions

*Reference: Article 17(3)(e)(i)*

#### **Territorial needs in the North Sea region**

The EU Strategy for Energy System Integration (COM(2020)/299 FINAL) centres on the importance of a well-positioned and well-functioning integrated energy system and calls for the coordinated planning and operation of the energy system 'as a whole'. This is reflected in the needs of the North Sea region's overall energy framework, which increasingly relies on sound energy system integration (grids and storage). There must be capacity not only to produce renewable energy off- and on-shore but also to store it and connect it to the grid that feeds the homes, buildings, and machines that require it. Smart grids maximise efficiency and reduce costs by using digital connections between utility companies and consumers to identify inefficiencies and help prevent outages in the grid through a series of sensors. Batteries form part of the smart grid system by storing the energy, produced at peak times, when demand is low.

The North Sea region is a world leader in offshore wind production and large gains are also being made in the region in the development of green hydrogen as a fuel source. However, the region faces several challenges as advances are made in these areas. One is that the technologies and infrastructure needed for storing energy are at a very early stage of development, while the production of renewable energy charges ahead. Given the volatile nature of renewable energy production, however, it is important to improve the technology of smart grids to produce a reliable flow to consumers. Moreover, due to insufficient storage capacities (such as pumped hydro storage), the region must increase efficiencies as quickly as possible to be able to capture the full benefit of the energy produced. Management of electricity generation, heating (thermal storage) and transport (battery storage) to address short-term energy shortages should allow the use of more renewable energy. North Sea region

An important long-term benefit of developing smart energy systems is the boost they will give to the development of renewable energy. The advancement of smart energy systems complements the production of hydro, solar and wind energy. This, in turn, will contribute to a reduction in carbon emissions and help achieve the objectives of the EU Green Deal. Moreover, making links, networks and sectors more integrated will allow various energy carriers – electricity, heat, cold, gas, solid and liquid fuels – to collaborate further in developing existing and emerging technologies, processes and business models, such as ICT and digitalization, smart grids and meters.

#### **Transnational cooperation actions**

Under this specific objective, the programme will support transnational projects that contribute to the acceleration of the transition towards a more integrated energy system across the North Sea region. This includes activities related to grid development and energy storage, as well as awareness raising and promotion of the benefits thereof.

Future power supply and distribution networks need to be more flexible, and the programme will support testing of new methods to deliver this flexibility, e.g. by coupling the power supply together with smart grids to improve the match between supply and demand at different times to avoid surges and blackouts. The specific objective also calls for actions that will facilitate energy system integration, which calls for measures that create physical links between energy carriers. Accelerated electrification will require the reinforcement of the grid at both the distribution and transmission points and will make the system smarter. Actions are also welcome in relation to smart charging and so-called vehicle-to-grid (V2G) services in order to manage grid congestion and limit costly investments in grid capacity.

In close relation to this are new and emerging battery technologies. Pilots, demonstrations and solutions for advanced materials developments to improve current battery technologies at high TRLs (Technology Readiness Levels), including solid state batteries, are welcome. Solutions for new manufacturing techniques and applicability to battery technology, thereby ensuring the “future proof” battery value chain, are also interesting for the programme.

Actions could also include ensuring that customers’ decisions to save, switch or share energy properly reflect the life cycle energy use and footprint of the different energy carriers. Accessible information is essential to helping citizens reduce their energy consumption and switch to solutions that support an integrated energy system. Awareness raising campaigns, as part of projects that focus on pilots and demonstrations, will educate consumers about the various technology options available to them, e.g. digital monitoring and displays of electricity supply and demand (possibly with variable pricing for peak periods), and their associated carbon footprint so they can make informed choices. While the basic requirements for such systems are broadly agreed, transnational cooperation can demonstrate how they work in practice, explain issues like cost, reliability, and effectiveness, lay the ground for more extensive schemes in the future, and build support for them.

Finally, one of the most significant new developments with potential impact across the North Sea region is the establishment of an energy island in the North Sea. Cooperation on Power-to-X (simply defined as the 'conversion of power from the electricity sector into another energy carrier' [20]) technology development connected to the creation of this island has been established, and once the planning of the island progresses, there may be opportunities to implement further transnational cooperation projects related to it.

The following is a non-exhaustive list of challenge-driven fields that have potential for transnational cooperation:

- Uptake of smart energy systems
- Smart grid
- Battery technology
- Awareness raising of long-term benefits of green energy production, storage, and transmission

Regarding spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application to highlight and address territorial demands in the North Sea region.

Examples of actions supported (non-exhaustive list):

- Demonstrating the application of smart grid technologies as a way of saving energy and integrating more renewable power in the energy mix
- Supporting the uptake of smart energy systems and technologies in the construction and building sectors
- Developing electrification of the energy system that is in line with the Commission's 'Clean energy for all Europeans package,' i.e. pilots and demonstrations are necessary to define scale, regulatory issues, technical issues, and economical feasibility
- Supporting the energy value chain to ensure that both costs and benefits are kept in the local and regional energy systems
- Implementing pilots and demonstrations on aspects of Power-to-X and other energy transformation technologies
- Supporting the opportunities for companies and individuals to supply to the grid at peak times and use electricity from the grid when needed
- Protecting digital energy systems and supply, including threats to cyber security
- Stimulating a “future proof” energy storage value chain

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Increased readiness for the continuous uptake of digital solutions in North Sea energy systems
- Efficient, sustainable, and reliable grids
- Storage solutions that will increase reliability of electricity supply and increase efficiency
- An increase in solutions between different energy carriers

## 2.2.4.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
2	SO 2.3	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	4	19
2	SO 2.3	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	15	75
2	SO 2.3	RCO 87	Organisations cooperating across borders	Organisations	10	51

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
2	SO 2.3	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	17	Online monitoring system	
2	SO 2.3	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	56	Online monitoring system	
2	SO 2.3	RCR 150	Capacity-building of organisations	Capacity	0	2021	233	Online Monitoring System	

### 2.2.3.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within the energy priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education / training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public
- Citizen energy cooperatives

2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 - intervention field	2	ERDF	SO 2.3	033 Smart Energy Distribution Systems at medium and low voltage levels (including smart grids and ICT systems) and related storage	10. 488.126
Table 5 Dimension 2 - form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.3	01 Grant	10. 488.126
Table 6 Dimension 3 - territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.3	33 No territorial targeting	10. 488.126

## 2.2.4 Specific objective 2.4: Promoting the transition to a circular and resource efficient economy (SO2.6)

*Reference: Article 17(3)(e)*

### 2.2.4.1 Related types of action

*Reference: Article 17(3)(e)(i)*

#### **Territorial needs in the North Sea region**

The North Sea region has already begun to benefit from the green transition through its focus on innovation. To continue to reduce the environmental impact of production, decrease resource dependency, and reduce the waste problem in the region, it is crucial to further this transition by focusing on the circular economy. There is a clear need to reduce emissions levels in the North Sea region, and aiming for a circular economy in a broad range of sectors enables this.

The aim of a circular economy is to ensure that resources are reused or recycled, thereby eliminating or reducing waste. It moves the emphasis away from a 'take-make-dispose' culture towards one in which organisations and individuals use resources in smarter and more sustainable ways, with the end-goal of closing the loop of product life cycles. Besides the environmental benefits to the region, the focus on circularity creates opportunities for new business models, jobs, services and products. The innovative capacity of the North Sea region can be an asset to the EU's efforts in boosting the circular economy, which is one of the main building blocks of the European Green Deal.

Regions within the North Sea area are at different levels of maturity when it comes to the circular economy. The individual strengths and specialisations of the regions, when explored through transnational projects, can contribute to solid developments in this area. Moreover, the prevalence of employment in the circular economy material providers currently centres around the rural regions of the NSR and the employment for circular technology providers in urban regions, which opens potential for urban-rural cooperation to realise broad uptake of product and process solutions. Rural regions, in particular, can benefit from the further uptake of the circular economy, as newly developed value-chains in the renewable energy sector, for example, could support the sustainability and resilience of these areas. The countries of the North Sea region will benefit in the long-term from the emission reduction and attention to sustainability that the uptake of circular solutions in the region will bring via projects funded by the programme.

#### **Transnational cooperation actions**

The promotion of circular products and processes as mainstream requires a supportive environment for a circular economy. It is crucial that SME's, knowledge institutions and governments can develop, test and improve new circular products and services. Also, by stimulating governments at different levels to foster the circular economy in public procurement and in the development of standards and regulation can drive demand for

circular products and services. The aim is to make sustainable products and services the norm in the North Sea region.

There is a solid foundation in the region for realising the transition towards a circular economy, and projects are encouraged to aim for scaling up and focusing on the permanent up-take of solutions, products and services. The overall goal is to minimise waste and thereby the associated carbon it produces as well as the environmental impacts of that production.

Projects under this specific objective can encourage entire circular economy systems or focus on a specific aspect of circularity. Projects may target the design aspect of products to last longer, enhance product modular design for easier repair, or link design to end of life. The orientation of projects can be towards production processes or services such as production on demand, upgradability or increasing recycled content in products. When focusing on the end product, actions can take a broad approach to recycling, including product life extension and recovery of secondary materials. Projects may also target waste responsibility or involve waste or waste prevention in the blue economy. In other areas, such as agriculture, this translates to the recycling of nutrients, the reuse of treated wastewater, or the valorisation of waste in the context of the bioeconomy. Projects can incorporate actions on behavioral change, transformation of consumption patterns and developing or improving networks to stimulate social innovation for a sharing economy. Digitalisation is highly relevant to achieve the aim of this specific objective as it can be an enabler of resource efficiency. Open online product data, for example, can help to increase reparability and improve durability. Projects could also consider circular procurement methods, starting with looking beyond short-term needs and considering the long-term impacts of each purchase.

As a common objective all projects within this specific objective should aim to accelerate a transition to a circular economy and resource efficient economy with a focus on sectors with a sufficient potential to make this transition.

The programme will fund actions in the following thematic fields (non-exhaustive list):

- Circularity in design of products and packaging
- Reparability, durability and reusability of products
- Circularity in production processes
- Circularity in value- and supply-chains
- Waste management and recycling
- Creating a market for secondary resources
- Circular business models.

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

### **Examples of potential actions supported (non-exhaustive list):**

- Providing support to pilots, demonstrations and test beds in order to scale-up the use of product and service innovation to support circularity
- Improving land and sea ecosystems by supporting circularity in agriculture and forestry
- Providing improved production methods for packaging that enhance circularity of the material used
- Fostering initiatives on circular procurement methods to encourage long-lasting change
- Encouraging a transition to circular production in rural areas to encourage new business opportunities and reduce the urban-rural divide
- Encouraging circularity of renewable energy infrastructures, e.g. through the dismantling and recycling of wind- and off-shore constructions
- Enhancing the development of new value-chains of circular economy, especially for rural regions
- Utilising open data access to encourage development and accessibility of spare parts
- Recycling of legacy of materials or extraction of hard to recycle substances
- Improving waste management practices to reduce the threat of plastic in the North Sea
- Developing efficient ways to achieve re-use of products or collection and recycling of materials
- Encouraging resource-efficient design, digitalisation or sustainable business models where producers keep ownership of products to encourage attention on durability
- Assisting the phasing out of current conventional technologies and implementing new technologies that fit into circular economy systems

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

### **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Improved framework conditions for maintaining the value of products, materials and resources so they are preserved in the economy for as long as possible.
- Reduced environmental impact of resource consumption and improved societal benefits in the long term.
- Reduced use of primary resources (recycling and efficient use of resources).
- Improved utilisation patterns (behavioural and shift in consumption patterns).
- Strengthened regional uptake of circular solution by improved availability and a behavioural shift in consumption patterns.
- New business models

### 2.2.4.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
2	SO 2.4	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	4	19
2	SO 2.4	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	15	75
2	SO 2.4	RCO 87	Organisations cooperating across borders	Organisations	10	51

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
2	SO 2.4	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	17	Online monitoring system	
2	SO 2.4	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	56	Online monitoring system	
2	SO 2.4	RCR 150	Capacity-building of organisations	Capacity	0	2021	233	Online Monitoring System	

### 2.2.4.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within the circular economy priority.

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education / training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public
- Hospitals and medical centres

#### 2.2.4.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	2	ERDF	SO 2.4	042 Household waste management: prevention, minimisation, sorting, recycling measures.	3.496.042
	2	ERDF	SO 2.4	044 Commercial, industrial or hazardous waste management	3. 496.042
	2	ERDF	SO 2.4	045 Promoting the use of recycled materials as raw materials	3. 496.042

Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.4		01 Grant

Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.4		33 No territorial targeting

## 2.2.5 Specific objective 2.5: Promoting sustainable multimodal urban mobility, as part of transition to a net zero carbon economy (SO2.8)

*Reference: Article 17(3)(e)*

### 2.2.5.1 Related types of action

*Reference: Article 17(3)(e)(i)*

#### **Territorial Needs in the North Sea region**

A climate neutral Europe cannot be achieved without developing and implementing sustainable means of transport. The transport sector is responsible for approximately 25% of GHG emissions in Europe and a major source of pollution. This is especially true in urban areas, but regional and international transport, - which lead to and leave from cities, are also quickly growing sources of emissions.

In 2018, the share of passenger travel by car in most North Sea countries was above the EU-27 average,. Traffic congestion and the extensive use of public space for parking are common challenges for urban mobility in bigger cities around the region. In addition, most big cities in the region function as ports, which makes them major logistic hubs. This situation - freight and passenger transport needs from and to ports - creates challenges as well as opportunities in urban transport around the North Sea region.

The region's transport sector also provides employment and connects small towns and hinterland areas to urban centers. As urban areas cannot be viewed separately from their hinterlands, the territorial approach of functional urban areas including smaller towns and rural areas applies in the North Sea region. This territorial approach needs to be considered when developing and harmonizing green and multimodal mobility solutions in the NSR. According to the European Commission's Sustainable and Smart Mobility Strategy, it is crucial that mobility is available to and affordable for all, that rural and remote regions are better connected and that the sector offers good social conditions, reskilling opportunities, and provides attractive jobs.

The North Sea region boasts major ports as well as busy urban transport nodes and a significant hinterland area. Optimising the existing transport networks and logistics chains by boosting innovative ideas is key to reducing emissions. Given that the countries in the region are frontrunners in developing low-emission vehicle technologies and infrastructure and supporting green transport modes in urban areas and their connecting hinterlands, the programme is well placed to address the sustainable mobility challenges that the region faces. Thus, the inclusion of sustainable mobility contributes to the need for a cleaner and more livable North Sea region.

#### **Transnational cooperation actions**

Projects funded under this specific objective will support sustainable and multimodal initiatives, including mobility of people and the supply chains of the connected hinterland areas in the North Sea region. Under this specific objective, the programme will enhance transnational cooperation, which will promote climate neutral transport modes, contribute to carbon-effective mobility and encourage the demonstration and use of available or newly developed green transport solutions. Digitalisation will also become an indispensable driver for projects in the modernisation of transport systems, making them seamless and more efficient.

Multimodal mobility (better integration of bus/rail, car and bike-sharing, dial-a-bus service, etc.) will have positive long-term effects such as reduced dependency on car ownership in the region. In addition, it will reduce congestion and air pollution.

Furthermore, it is important to promote sustainable mobility between peripheral, coastal areas and metropolitan areas by supporting public and private transport services for locals, tourists, and enterprises. These could include such initiatives as promotion of the use of zero-emission ferries and buses along the coast, improved mobility services between tourist destinations, transport of people and goods for the last mile, and encouragement of better rail connections. Moreover, it is essential to place a focus on public awareness raising in order to effect a behaviour change towards sustainable modes of mobility. The subject of sustainable mobility also requires awareness of the mobility patterns of both women and men.

Projects under this specific objective will move beyond networking and knowledge exchange and support activities that are implemented as demonstration and pilot projects; however, financing of large fleets of vehicles and/or rolling stock is not supported. Actions should target areas that give added value through transnational cooperation and build on the competitive strengths of the region. Support for challenge-driven topics that are in line with the priorities of the North Sea region programme will be prioritized. Particular focus will be on the challenges identified under Priority 2, but activities funded under this specific objective will also be open to demand-driven projects in other fields.

The programme will fund innovative actions in the following thematic fields (non-exhaustive list):

- Green modes of urban transport and rural-urban linkages
- Greening of local and regional logistical chains
- Intelligent Transport Solutions
- Multi-modal connections
- Demand-driven passenger transport models

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

### **Examples of potential actions supported (non-exhaustive list):**

- Supporting the development of sustainable logistics for urban areas and the interconnected territories by integrating local supply chains and reducing transport distances
- Supporting the development, implementation and monitoring of Sustainable Urban Mobility Plans or other strategy-based sustainable transport development plans
- Enhancing sustainable mobility services in urban areas and their surroundings by developing and testing innovative IT solutions
- Developing “green-accessibility” through soft modes of transport like cycling, e-biking and walking
- Improving the integration of emissions-free transport modes in multimodal mobility by developing/demonstrating new solutions
- Supporting the development of mobility hubs in urban and non-urban areas
- Enabling start-ups and SMEs working in zero-emission transport industries to take advantage of business opportunities by piloting and assessing new initiatives in sustainable mobility measures
- Supporting solutions for electric/alternative propulsion mobility at urban and regional levels by contributing to existing or pilot networks of charging/distribution infrastructures, and testing for potential bottlenecks in the available infrastructure
- Encouraging social innovations in the mobility sector, such as shared mobility and co-creation by boosting capacities and supporting the application of already available concepts
- Improving/upscaling sustainable and locally produced batteries and vehicles and alternative/new fuels
- Improving sustainable mobility between urban and rural areas
- Promoting automation and autonomous transport on land and water by creating awareness of the advantages of these solutions
- Making transport and mobility smarter by using intelligent transport solutions

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

### **Impacts**

All actions target the promotion, deployment and uptake of sustainable transport solutions across the North Sea region. “Greening” of transport means implementing activities that reduce emissions and is key towards the goal of being the first climate neutral continent. The efforts made in the greening of urban transport will have a positive impact on people living in the region through:

- Improved livability and emission free accessibility in the North Sea region
- Uptake of green and smart technologies in all relevant transport modes

- Decreased traffic congestion in urban areas
- Better transnational integration of future transport demands in spatial development
- Long-term reduction of CO<sub>2</sub> and pollution emissions

### 2.2.5.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 1: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
2	SO 2.5	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	4	19
2	SO 2.5	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	15	75
2	SO 2.5	RCO 87	Organisations cooperating across borders	Organisations	10	51

Table 2: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
2	SO 2.5	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	17	Online monitoring system	
2	SO 2.5	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	56	Online monitoring system	
2	SO 2.5	RCR 150	Capacity-building of organisations	Capacity	0	2021	233	Online Monitoring System	

### 2.2.5.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority.

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure managers and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education/training centres and schools
- Enterprises, with an emphasize on SMEs
- International organisations and EEIGs (European Economic Interest Grouping)

#### 2.2.5.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	2	ERDF	SO 2.5	073 Clean urban transport infrastructure	2.622.031
	2	ERDF	SO 2.5	076 Digitalisation of urban transport	2.622.031
	2	ERDF	SO 2.5	077 Alternative fuels infrastructure	2.622.031
	2	ERDF	SO 2.5	079 Multimodal transport (not urban)	2.622.031

Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.5	01 Grant	10.488.126

Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	2	ERDF	SO 2.5	33 No territorial targeting	10.488.126

## 2.3 Priority 3: A climate resilient North Sea region

*Reference: Article 17(3)(d)*

2.3.1 Specific objective 3.1: Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches (SO2.4)

*Reference: Article 17(3)(e)*

2.3.1.1 Related types of action

*Reference: Article 17(3)(e)(i)*

### **Territorial Needs in the North Sea region**

Climate change is already causing negative impacts on the North Sea region. Land and sea temperatures have been rising steadily since the end of the 19th century. An effect of this warming has been a rise of 19 centimeters in the "Global mean sea level" (GMSL) since 1900, and the increase is accelerating, according to the European Environment Agency. The North Sea is not immune; significant changes in sea levels are expected in the future. Other changes tied to climate change in the North Sea region include an increase in seasonal extremes in precipitation and more volatile weather patterns.

There is the clear need to act and adapt to climate change, but the effects of climate change vary across the North Sea area. The most vulnerable types of regions in the North Sea area are densely populated coastal regions and mountain regions. Many parts of the programme area lie just above or even below the current sea level. For the lower lying countries sea level rise is a serious threat. Coastal erosion poses a risk for individuals' homes but may also result in the flooding of large sections of low-lying regions and countries. Winter changes in precipitation are extreme in several parts of Scandinavia, as for example mountain areas. Larger extremes and seasonal changes in precipitation throughout the region can have considerable impacts on society, including the built environment, agriculture, industry, infrastructure and range of vital ecosystems.

Volatile weather patterns can have effects in two major ways. Flooding is one of the major threats caused by the frequency and severity of storms; drought is another, caused by the absence of rain. Flooding of cities, suburbs, and rural areas as well as the occurrence of droughts have significant impacts on the quality and quantity of water. Flooding and drought also impact the services that require fresh water to be made available for agricultural crops, forests, wetlands, supply of clean drinking water and infrastructural networks (harbours, roads, railroads, river transport and hydro-electricity).

The effects of climate change and the complex relationship between climate adaptation and water management must be addressed by projects. Thus, there is a need to enable the development of multifunctional, adaptable and nature based solutions that deliver more sustainable solutions across the NSR.

### **Transnational cooperation actions**

The North Sea Commission's 2030 climate adaptation strategy is based on a systems-oriented approach that integrates climate adaptation and water management issues. In the North Sea region, climate adaptation and resilience are closely interlinked with issues and challenges for sustainable water management of catchments, watercourses and rivers and coastal waters. Thus, climate adaptation and sustainable water management should be addressed jointly by the North Sea Programme under this specific objective on climate change adaptation. The objective also targets issues and challenges in relation to freshwater systems and coastal areas. As these issues are interlinked and similar challenges are faced by different regions it makes sense that joint solutions to the challenges are sought through transnational cooperation efforts.

Please note that actions promoting nature protection, biodiversity and green infrastructure, including pollution of the urban and marine environments, must apply under priority 3, specific objective 2.

The programme will fund actions in the following thematic fields (non-exhaustive list):

- flood resilience, including risk management
- investigations of Nature Based Solutions in flood protection
- exploration of flood protection infrastructure in form of blue-green infrastructure
- catchment management of groundwater and surface waters
- ecosystem services in aquatic freshwaters
- specific thematic fields monitoring, managing and preventing natural phenomena triggered by climate change (such as forest-fires, land-slides in mountain areas, urban heat islands, increased nutrient leaching and invasive species etc.).

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

### **Examples of actions supported (non-exhaustive list):**

- Improving protection of coasts, estuaries, rivers against erosion and storm surges by applying Nature Based Solutions
- Integrating water management to mitigate the impact of more intense rainfall events and flooding from rainwater, groundwater, water courses and rivers in, e.g. mountainous and coastal areas

- Improving the management of groundwater and surface waters, including pressures from discharges in riverbeds caused by peak loads
- Strengthening urban resilience by using space in a multifunctional way, as for example by investigating into blue-green infrastructure as part of urban design
- Facilitating the maintenance of soil moisture and supply to ground- and surface waters
- Testing methods and solutions to cope with impacts of sea level rise (such as erosion, flooding, salt water intrusion)
- Initiating nature restoration measures in water management at rivers, lakes, wetlands or groundwater (rewinding of water courses and rivers or rewetting of wetlands)
- Implementing ecosystem services such as carbon storage, soil formation as well as water quality and flows
- Predicting climate change impacts and the effects they have on societal values, and exploring the cost of such measures and stimulating the involvement of business opportunities for SMEs
- Promoting social innovation, e.g. by actively engaging communities, stakeholders and citizen's participation in implementation of pilots and measures
- Piloting small-scale technical solutions as part of integrated coastal zone management
- Mainstreaming of successful measures and monitoring methods in strategies and management guidelines
- Adopting improved methods for tackling other effects of climate change such as drought, heat stress on road infrastructure or energy systems, salinization etc.

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Uptake of nature-based solutions to manage flooding and water
- Improved resilience against flooding and erosion including land-slides in coastal and mountain areas
- Improved resilience of towns and cities against flooding risks adapted to their location in specific landscapes and sites
- Improved resilience against other climate change related effects, such as heat stress, drought, salinization, land consumption and sealing
- More appropriate protection of fresh-water resources (quality and quantity) for healthy and clean drinking water supplies
- Adapted ground and surface waters to wider fluctuations in seasonal precipitation
- Restored fresh-water ecosystems, including peat soil and wetlands with potential to capture and store carbon

### 2.3.1.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
3	SO 3.1	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	8	42
3	SO 3.1	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	32	161
3	SO 3.1	RCO 87	Organisations cooperating across borders	Organisations	22	110

Table 4: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
3	SO 3.1	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	38	Online monitoring system	
3	SO 3.1	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	121	Online monitoring system	
3	SO 3.1	RCR 150	Capacity-building of organisations	Capacity	0	2021	498	Online Monitoring System	

### 2.3.1.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- SMEs
- Business support organisations
- International organisations and EEIGs
- General public

2.3.1.4 Indicative breakdown of the EU programme resources by type of intervention

Reference: Article 17(3)(e)(vi)

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	3	ERDF	SO 3.1	035 Adaptation to climate change measures, prevention or management of climate related risks: floods and landslides (including awareness raising, civil protection and disaster management systems and infrastructures)	7.391.907
	3	ERDF	SO 3.1	037 Adaptation to climate change measures, prevention or management of climate related risks: others, e.g. storms and drought (including awareness raising, civil protection and disaster management systems and infrastructures)	7.391.907
	3	ERDF	SO 3.1	040 Water management and water resource conservation (including river basin management, specific climate change adaptation measures, reuse, leakage reduction)	7.391.907
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	3	ERDF	SO 3.1	01 Grant	22.175.722
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	3	ERDF	SO 3.1	33 No territorial targeting	22.175.722

### 2.3.2 Specific objective 3.2: Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution (SO2.7)

*Reference: Article 17(3)(e)*

#### 2.3.2.1 Related types of action

*Reference: Article 17(3)(e)(i)*

### **Territorial Needs in the North Sea region**

Biodiversity and ecosystem services, including those in the marine environment, are vital assets for regional development and other benefits in the North Sea region. However, their functions are under stress because of high population density, urbanisation and intensity of use within agriculture, transport and industry. Current trends in climate change aggravate these pressures. Natural resources and ecosystems support the broader well-being of the area; thus, they must be protected due to their value as natural assets.

The natural resources and the ecosystems of the North Sea are important for businesses, regions and communities. Off-shore renewable and fossil energy systems depend on a range of ecosystem services. The services and products stemming from an emerging interest in algae for biomass and food as part of Blue Growth also require healthy marine ecosystem services.

The concept of ecosystem services is developed within the framework of the UN conventions on biodiversity and climate change. They have been applied in various contexts in relation to calculating the value of natural capital and sequestration in carbon in spoils as part of EU policies. Biodiversity assets and ecosystem services involve the benefits that flow from nature to people. The European Commission Biodiversity Strategy 2030 suggests that 30% of the EU's land area and 30% of the EU's sea area become legally protected by 2030. This strategy will also increase requirements for nature protection in the North Sea region. The Environment Council of Ministers has endorsed the objectives of the strategy as political guidance for follow up.

Pollution of marine environments in the North Sea poses a threat to the environment and human health. Such pressures are also destroying ecosystem services on which local communities, tourism, aquaculture and offshore wind parks depend.

### **Transnational cooperation actions**

The protection of the North Sea environment is a transnational issue and requires cooperation. Actions under this objective must target marine ecosystems, biodiversity or green linkages in towns and cities and their rural hinterlands. Joint development of methods for environmental monitoring, restoring ecosystem services and managing

green corridors will profit from transnational cooperation. Actions should seek to mainstream successful solutions.

EU marine policies and strategies and environmental conventions such as OSPAR provide frameworks for protection. These are important, especially in conjunction with actions related to Maritime Spatial Planning (MSP). The programme supports specific actions that are part of operational follow-up of such policies and strategies and improve the sustainable management of marine ecosystems. The aspect of transnational nature protection must be considered when authorities in the member countries are working on the implementation of the Maritime Spatial Planning Directive.

As the North Sea is a high intensity area on research and development in ecosystem services and because businesses and industries in the region are advanced in high-tech, clean and sustainable technologies with a small ecological footprint, the region's capacities should be used to restore and maintain healthy ecosystems. The know-how and methods developed can strengthen the competitiveness of the region. They could also connect to European Business for Biodiversity initiatives.

The actions carried out should be in the context of strategies on biodiversity and marine ecosystem strategies, e.g. the directives on Marine Strategy Framework or the MSP. The programme does not expect any overlap with mainstream programmes that administer funds such as the European Maritime Fisheries and Aquaculture Fund, due to the nature of the initiatives they support as well as the focus on transnational cooperation in North Sea Programme projects.

Please note that actions promoting sustainable management and protection of freshwater aquatic ecosystems and climate adaptation must apply under priority 3, specific objective 1.

The programme will fund actions in the following thematic fields (non-exhaustive list):

- long-term sustainable protection and restoration of marine biodiversity, environmentally protected areas
- ecosystems and biodiversity in rural and urbanized landscapes
- ecosystem services in marine and coastal spaces, including reducing polluting substances - such as litter and plastics in the marine environment as well as mitigating risks regarding wrecks and munition
- sustainable management of ecosystems and protection of the environment – i.e. realised through the participation and support of citizen and civil society organisations (e.g. 'citizen science')

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the North Sea region.

**Examples of actions supported (non-exhaustive list):**

- Testing methods addressing a range of pressures on biodiversity and ecosystems, such as invasive species, marine litter and contaminants
- Strengthening methods to accommodate off-shore renewable energy production to meet requirements of marine ecosystems - such as potential use of subsea off-shore wind park infrastructure as artificial reefs and breeding grounds for marine species
- Testing nature restoration methods for management of degraded ecosystems
- Deploying new methods and technologies for environmental monitoring and management and mainstreaming successful approaches
- Working with ecological corridors and green infrastructure in rural and urbanized landscapes to improve ecological connectivity and deliver benefits from them
- Implementing environmental measures and improved management of ecosystems by use of participatory processes, involving public authorities, relevant groups of citizens, NGO's, farmers and communities and their organisations in pilots and tests
- Developing and testing solutions for the development and enhancement of green infrastructure in the urban environment
- Initiating cooperation on reducing marine and coastal litter on beaches; contributing to the goal to keep litter under the threshold value as decided by EU experts and outlined in a report by the Commission
- Innovative pilot actions to increase biodiversity in cities with a positive impact on the wellbeing of citizens

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- New or improved monitoring methods and technology, such as digital solutions, delivering better quality and/or cost-effective monitoring of North Sea marine or landscape ecosystems. Successful solutions should be mainstreamed.
- Management methods improving conservation and restoration of degraded marine ecosystems
- Ecosystem services integrated in maritime spatial plans in the North Sea
- Joint actions delivering solutions on environmental problems (marine pollution, migrating wildlife)
- Take-up of methods and actions used to restore degraded bio-topes and ecosystems in urbanized and rural landscapes; enhancing ecosystem services of green infrastructure for the public good
- Methods and actions improving protection of threatened species with key functions in ecosystem services (e.g. pollination) that bring a benefit to the region

- Nature based solutions restoring green infrastructure in urban and peri-urban areas.
- Long-term risk management of lost containers from shipping, wrecks, chemical waste from munition and its impact on marine ecosystems, including improved methods for location of such threads fisheries, maritime transport, offshore wind farms

### 2.3.2.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
3	SO 3.2	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	8	42
3	SO 3.2	RCO 84	Pilot actions developed jointly and implemented in projects	Pilot action	32	161
3	SO 3.2	RCO 87	Organisations cooperating across borders	Organisations	22	110

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
3	SO 3.2	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	38	Online monitoring system	
3	SO 3.2	RCR 104	Solutions taken up or up-scaled by organisations	Solution	0	2021	121	Online monitoring system	
3	SO 3.2	RCR 150	Capacity-building of organisations	Capacity	0	2021	498	Online Monitoring System	

### 2.3.2.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Interest groups and NGOs
- Higher education and research organisations
- SMEs
- Business support organisations
- International organisations and EEIGs
- General public

2.3.2.4 Indicative breakdown of the EU programme resources by type of intervention

*Reference: Article 17(3)(e)(vi)*

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	3	ERDF	SO 3.2	050 Nature and biodiversity protection, green and blue infrastructure	22.175.722
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	3	ERDF	SO 3.2	01 Grant	22.175.722
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	3	ERDF	SO 3.2	33 No territorial targeting	22.175.722

## 2.4 Priority 4: Better governance in the North Sea region

*Reference: Article 17(3)(d)*

### 2.4.1 Specific objective 4.1: Other actions to support better cooperation governance (SO 4.1)

*Reference: Article 17(3)(e)*

#### 2.4.1.1 Related types of action

*Reference: Article 17(3)(e)(i)*

### **Territorial Needs in the North Sea region**

The North Sea region land and sea territories are perfectly poised to tackle joint challenges. Characterized by strong interdependencies, a wide range of stakeholders, including governments, international organisations, the EU, NGOs, private parties and citizens, are well equipped to address complex and demanding governance challenges. These issues exist across all objectives identified for the North Sea Programme.

Of particular interest is the governance of the North Sea basin, which is the most important joint asset of the region. Shipping, renewable energy production, aquaculture, fishing, tourism and recreation are activities that require coordination and, sometimes, a weighted priority in order to achieve a sustainable North Sea. In recent decades the pressure on the marine environment and ecosystems has grown, and competition for space and resources has increased. In this context a core objective of the programme is to exploit maritime and other natural resources in a coordinated and sustainable way. In addition, there is a growing need to better align land- and sea-based activity. Governance and spatial planning of land-sea interaction, as well as integrated coastal management, are important to achieve coherent policies.

There is also a clear need to support integrated territorial development and reinforce urban-rural cooperation in order to overcome gaps and strengthen a green and just development in the North Sea region. Improved governance structures should provide a rural-urban framework for more efficient land use and planning, better provision of public services and public transport, and better and just management of natural resources.

To address both land- and sea based governance challenges, it is necessary to embed and set the stage for individual actions in broadly supported and long-term strategies, action plans and networks. Improved multi-level governance structures that include key stakeholders and increased institutional capacity to participate in these structures will not only improve coordination between actions in the region, but will also support actions in order to ensure long-term effects and increase the cumulative impact of the programme. Facilitating and improving multi-level governance is a prerequisite for effectively addressing joint challenges.

## **Transnational cooperation actions**

While actions in Priorities 1, 2 and 3 should be targeted towards piloting practical solutions, this priority aims to improve the framework conditions that increase the durability and transferability of individual solutions. Actions supported will include the establishment and reinforcement of long-term multi-level governance networks and mechanisms, to combine practical solutions in integrated approaches and set the stage for future projects and initiatives. In addition, the priority will support the capacity building of stakeholders, including citizens, to actively engage in governance processes and decision making and to participate in innovations and transitions. This priority reflects a novel and innovative approach, and projects are encouraged to experiment and actively bring in new and untested ideas when applying for funding.

All challenge-driven fields mentioned under Priorities 1-3 could be of relevance for governance actions under Priority 4. Governance in marine and maritime fields, such as offshore wind and blue energy, shipping, ports, marine ecosystem protection, aquaculture, fishing and coastal and maritime tourism and recreation, as well as land-sea interactions, are considered to be of particular relevance for the region.

Supported actions should be inclusive and consider all relevant stakeholders (including but also beyond the traditional government actors) to participate in improved governance structures. Projects should bring on board actors that have the competencies and authority to leverage changes in policies.

Projects that deal mainly with governance are expected to apply in this priority, and are welcome to apply for alternative and more experimental types of actions, e.g. to set the scene and test the waters for future cooperation in particular fields. New strategies and action plans developed under this priority could, for example, be the starting point for future mainstream and research projects or other Interreg projects. Priority 4 projects should provide added value by building on existing transnational governance structures and solutions.

The nature of this priority implies that pilots that require substantial budget for investments or equipment will only play a minor role, if any. In general, it is expected that actions in this field build on or set the stage for pilot-based projects supported under the other priorities, in addition to other expertise and initiatives present in the region outside the programme.

With regard to spotlight themes as described in chapter 1.2.4, projects are encouraged to consider addressing one or more of the following themes - a) digitalisation, b) rural-urban linkages, c) strengths and challenges in the North Sea basin – in their application in order to highlight and address territorial demands in the region.

### **Examples of actions supported (non-exhaustive list):**

- Bringing together stakeholders, developing integrated and widely supported strategies and action plans in challenge-driven fields, and addressing regulatory and legal barriers

- Developing innovative concepts and tools that support better transnational coordination between existing and new actors involved in marine and maritime governance, including MSP
- Developing tools to foster citizen knowledge and engagement to improve their position in multi-level governance processes and participation in decision-making
- Building institutional capacity for actors on all levels to adapt to territorial needs and challenges, e.g. marine protection, digitalization, social innovation
- Supporting new and existing networks to translate international strategies and policies into joint transnational action plans
- Bringing together actors to address regulation-free spaces and the absence of adequate regulations in fields such as drones, robots and data-driven innovations in order to develop joint strategies, approaches and standards
- Setting up and fostering transnational partnerships between urban and rural actors as well as civil society and developing strategies to overcome the urban-rural divide in the region
- Building thematic communities for topics addressed in Priorities 1-3 in order to transfer findings and scale-up cooperation around shared issues, with the aim of embedding project results in a wider framework and ensuring take-up
- Developing and promoting new or improved governance mechanisms for upscaling, transferring and mainstreaming key innovations in challenge-driven fields in regional and local economies
- Building platforms for governance actors to harmonise technological standards and certification for (digital) infrastructure and equipment
- Supporting the integrated coastal zone management with maritime spatial planning in conflicting uses of spaces
- Developing measures for public-private partnerships to foster financial incentives that will lead to an increased use of energy efficient technologies
- Implementing participatory processes for winning stakeholder support for environmental measures

The types of actions have been assessed as compatible with the Do No Significant Harm principle, since they are not expected to have any significant negative environmental impact due to their nature (EGESIF\_21-0025-00).

## **Impacts**

Projects funded under this specific objective could contribute to one or several of the following impacts:

- Better coordination through new or strengthened cross-sectoral networks that facilitate multi-level governance
- Improved integration of marine and maritime solutions and activities
- Increased capacity in governance stakeholders to engage in transnational governance processes

- Improved integration and up-take of solutions in challenge-driven fields
- Increased societal support for policy decisions

### 2.4.1.2 Indicators

Reference: Article 17(3)(e)(ii)

Table 2: Output indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Milestone (2024)	Final target (2029)
4	SO 4.1	RCO 83	Strategies and action plans jointly developed	Strategy/ action plan	6	30
4	SO 4.1	RCO 87	Organisations cooperating across borders	Organisations	16	79

Table 3: Result indicators

Priority	Specific objective	ID	Indicator	Measurement unit	Baseline	Reference year	Final target (2029)	Source of data	Comments
4	SO 4.1	RCR 79	Joint strategies and action plans taken up by organisations	Strategy/ action plan	0	2021	27	Online monitoring system	
4	SO 4.1	RCR 150	Capacity-building of organisations	Capacity	0	2021	359	Online Monitoring System	

### 2.4.1.3 The main target groups

*Reference: Article 17(3)(e)(iii)*

Target groups include both public and private actors covering a wide range of different sectors and levels of governance across the North Sea region, which all are being affected by the targeted actions within this priority:

- Local public authorities
- Regional public authorities
- National public authorities
- Sectoral agencies
- Infrastructure and (public) service providers
- Interest groups and NGOs
- Higher education and research organisations
- Education/training centres and schools
- Enterprises, with an emphasis on SMEs
- Business support organisations
- International organisations and EEIGs
- General public

2.4.1.4 Indicative breakdown of the EU programme resources by type of intervention

*Reference: Article 17(3)(e)(vi)*

	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code and name</b>	<b>Allocated ERDF (indicative)</b>
Table 4 Dimension 1 – intervention field	4	ERDF	SO 4.1	173 Enhancing institutional capacity of public authorities and stakeholders to implement territorial cooperation projects and initiatives in a cross border, transnational, maritime and inter regional context	14.616.170
Table 5 Dimension 2 – form of financing	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>		<b>Allocated ERDF (indicative)</b>
	4	ERDF	SO 4.1	01 Grant	14.616.170
Table 6 Dimension 3 – territorial delivery mechanism and territorial focus	<b>Priority no</b>	<b>Fund</b>	<b>Specific objective</b>	<b>Code</b>	<b>Allocated ERDF (indicative)</b>
	4	ERDF	SO 4.1	33 No territorial targeting	14.616.170

### 3. Financing plan

#### 3.2 Total financial appropriations by fund and national co-financing (Table 8)

Reference: point (f)(ii) of Article 17(3), points (a) to (d) of Article 17(4)

Priority	Fund (as applicable)	Basis for calculation EU support (total or public)	EU contribution  (a)=(a1)+(a2)	Indicative breakdown of the EU contribution		National contribution  (b)=(c)+(d)	Indicative breakdown of the national counterpart		Total  (e)=(a)+(b)	Co-financing rate  (f)=(a)/(e)	Contributions from the third countries  (for information)
				without TA pursuant to Article 36(5) CPR  (a1)	for TA pursuant to Article 36(5) CPR  (a2)		National public  (c)	National private  (d)			
Priority 1	ERDF	Total	52.659.257	48.758.572	3.900.686	33.737.510	30.363.759	3.373.751	86.396.767	60,95%	2.000.000
Priority 2	ERDF	Total	55.790.218	51.657.609	4.132.609	35.743.440	32.169.096	3.574.344	91.533.658	60,95%	2.000.000
Priority 3	ERDF	Total	47.184.345	43.689.208	3.495.137	30.229.866	27.206.880	3.022.987	77.414.211	60,95%	2.000.000
Priority 4	ERDF	Total	15.549.762	14.397.928	1.151.834	9.962.356	8.966.120	996.236	25.512.118	60,95%	2.000.000
<b>Total</b>	ERDF	Total	171.183.583	158.503.318	12.680.265	109.673.173	98.705.855	10.967.317	280.856.756	60,95%	8.000.000

## **4. Action taken to involve the relevant programme partners in the preparation of the Interreg programme and the role of those programme partners in the implementation, monitoring and evaluation**

*Reference: point (g) of Article 17(3)*

### **4.1 Involvement of partners in the preparation of the programme**

Best efforts were made to take an inclusive, multi-level governance approach to programme development, despite delays caused by the Brexit process and the Covid-19 pandemic.

#### **Programme Preparation Group meetings**

The process of developing the North Sea Programme 2021-2027 began with the set-up of the Programme Preparation Group (PPG) composed of representatives from the member countries: Belgium, Denmark, Germany, Norway, Sweden, and the Netherlands. From [date of EC approval], France became the 7th member country.

VB member countries, with the exception of the UK, convened in Copenhagen on 5 November 2019 to discuss a new programme based on the draft regulations. It was decided that the Joint Secretariat would support the programming process, hiring expert support if and when necessary. The PPG decided to carry on with the process as soon as the European Commission had published its Orientation Paper for the North Sea region. Due to Brexit, the paper was delayed until February 2020. Subsequently, a total of 8 PPG meetings were held between February 2020 and May 2021. Except for the first meeting, all meetings were virtual.

#### **Background papers**

To inform the programming process, a series of analyses and input papers were produced and discussed at PPG meetings.

#### *State of play report*

This report outlined achievements made, experience gained and lessons learnt during the current programme, including orientations for the future. The report was produced by the Joint Secretariat.

#### *Scoping study*

An independent scoping study conducted by the external consultant company Reeleaf included stakeholder views of regional priorities as well as an analysis of relevant EU,

national and regional policies, and strategies. The study also synthesised regional socioeconomic and development data.

#### *Programme evaluation*

The external consultant Ramboll undertook an independent review of programme implementation, outlining areas of successful performance and recommending improvements.

#### *Stakeholder engagement strategy and consultations*

The Joint Secretariat prepared a Stakeholder Engagement Strategy outlining the steps for involving stakeholders in programme preparation. The strategy was approved by the PPG. Subsequently, the Covid-19 pandemic broke out, which led to repeated revisions of timelines and activities .

#### *Stakeholder consultations*

An initial consultation was conducted among the programme's core stakeholders in each member country. The purpose was to collect initial opinions about the main themes of the new programme, focusing on the policy objectives and specific objectives set out by the European Commission. Preliminary and final results were presented at two PPG meetings.

Next, a public consultation was launched through all programme channels. The consultation covered programme themes, project types and scope, and administrative aspects. It was conducted between 10 July and 30 August 2020, receiving 391 responses from a broad range of stakeholders. Approximately 56% of the respondents represented the public sector. The second most prominent type of organisation was academic/research institute (16%), followed by civil society organisations (8%), consultancies (7%), and private sector organisations (7%).<sup>1</sup>

Seven additional surveys collected inputs for improving the programme's online monitoring system and website, receiving nearly 350 responses. The outcomes were discussed at the fifth PPG meeting.

On 10 November, a virtual edition of the annual North Sea Conference included thematic breakout sessions designed for dialogue and feedback from stakeholders on the new programme on selected themes and on programme administration.

Across the consultations, most stakeholders showed a clear preference for the policy objectives proposed for the programme in the European Commission's Orientation paper.

---

<sup>1</sup> More information on the distribution of stakeholder groups within each country is found in section 3.2 of the stakeholder consultation report: <https://northsearegion.eu/media/15514/nsr-2021-2027-consultation-outcomes.pdf>.

### *Stakeholder engagement platform*

To further engage with stakeholders, the secretariat created a public stakeholder exchange group at LinkedIn. While this was not part of the formal consultations, it enabled stakeholders to discuss their views with others.

### **Involvement of national partners in programme preparation**

As part of or in addition to the above processes, the member countries involved their national partners in programme preparation in the following ways:

#### **BELGIUM (FLEMISH REGION)**

This work was led by Flanders Innovation & Entrepreneurship (FIE) and the Flemish Mobility & Public Works Department, in cooperation with Flemish local/provincial authorities. Besides this FIE involved all relevant (policy) departments and agencies of the Flemish government through a long established Interreg working group. All relevant stakeholders were enabled by FIE to participate in the Interreg VI programme survey(s) and were regularly updated by FIE on progress.

#### **DENMARK**

Danish partners at all levels participated in the stakeholder consultation surveys and contributed through the public consultation. National partners were as well consulted when the final draft programme was forwarded to the Commission.

#### **FRANCE**

The three French regions became part of the North Sea Programme at a very late stage in the programme development process. Hence, there was no possibility to involve a broader set of French stakeholders in the programme development phase.

#### **GERMANY**

The German delegation in the Programme Preparation Group and MC/SC is composed of representatives of national and regional organisations. The input for the negotiations for the committees of the programme was prepared in the national sub-committee.

In addition continuous public information was displayed on [www.interreg.de](http://www.interreg.de), with a special section on future cooperation 2021-2027 established in 2018. Regular updates were provided in the monthly e-mail Interreg newsletters and quarterly Interreg Journals.

An Interreg North Sea event on Länder level took place with 150 participants in November 2019 in Bremen. Public information was posted via official regional websites.

Interreg events on regional level took place in Hamburg, Bremen, Kiel and Lower Saxony. Informal consultation (via email) of stakeholders also took place (e.g. regional ministries, clusters, project partners).

## NORWAY

National partners in Norway have primarily been consulted in bilateral or trilateral meetings. Typically, we have invited stakeholders (various national authorities) at the national level and the ministries which are responsible for these authorities. Among the issues we have discussed are:

- What are the shared challenges the stakeholders cooperate to address?
- What are the experiences with the participation in the Interreg programmes?
- What are potential improvements for the forthcoming period?

In addition to an involvement of national partners in the programme preparation, we have also had a consultation among all county administrations and discussions in the national subcommittee for the Interreg B and C programmes.

## SWEDEN

Swedish stakeholders have participated at the public consultation published by the Joint Secretariat summer/fall 2020. The Swedish steering committee and subcommittee, with representatives from all participating regions and the state agency Länsstyrelsen, have been involved in the programme preparations. They have received continuous updates and been given the possibility to contribute with their priorities on multiple occasions.

## THE NETHERLANDS

- Organised several National Advisory Committees (online) meetings in 2019, 2020, and 2021.
- Held regular updates with counterparts in the Dutch ministries.
- Sent out newsletters to the National Advisory Committee, explaining the progress of the preparation.
- Informed the group of wider stakeholders about the international programme preparation, e.g., the programme's public consultation (summer 2020).

## 4.2 Involvement of partners in the implementation, monitoring and evaluation of the programme

### BELGIUM

Mainly the same mechanisms and platforms as described above apply or are used by Flanders Innovation & Entrepreneurship (FIE) for these tasks. Led by FIE, periodic meetings take place with the regional/local level Interreg NSR partnership in order to prepare programme meetings, tasks and events. A local level representation is also foreseen in the Monitoring Committee and/or Steering Committee.

### DENMARK

Danish authorities at both national and regional level will be represented in the Programme Monitoring Committee. In the context of the start of the implementation of the programme potential Danish partners will be kept informed about calls under the programme.

## FRANCE

The three French regions will cooperate and work with their economic development agencies and their regional economic and social councils as well as their regional sectoral services during the implementation, monitoring, and evaluation of the programme.

Through the sectoral services of the Region which are involved in the implementation of ERDF funding, the knowledge of local and regional needs and opportunities will strengthen the implementation of the North Sea Programme.

Information days will be organised to promote the opportunities of the transnational programme to local actors and stakeholders.

## GERMANY

With regard to the implementation of the next programme period, Germany will carry on the work of the national sub-committee. The German sub-committee includes representation from the federal states of Bremen, Hamburg, Schleswig-Holstein and Lower Saxony and the two federal departments involved and a number of stakeholders from local, regional and national level.

Interreg events on national and regional level will take place in Hamburg, Bremen, Kiel and Lower Saxony to inform partners and stakeholders about the new program possibilities.

The National Contact Point will regularly publish information in German about the program on its website and via an extensive mail distribution list.

## NORWAY

The project applications under each call are discussed by the national sub-committee for Interreg B and C prior to each monitoring committee meeting. The committee is made up of representatives from all parts of Norway including the regions that are represented in the programme area. Preliminary evaluations and recommendations are presented by the National Content Point and are discussed by the committee in order to reach agreement on Norway's position regarding the funding to be granted.

The Ministry of Local Government and Modernisation can, in some instances, chose to consult the International County Network, a network made up of international advisors from all the Norwegian counties, in other matters regarding the management and execution of the programme as a whole.

## SWEDEN

A substantial part of implementation tasks of the North Sea Programme in Sweden has to date been carried out on regional level. This will continue in the new programme with Region Västra Götaland intending to appoint a subcommittee and hosting the secretariat of the Sub-committee and the National Contact Point.

Swedish stakeholders and actors will be invited to attend workshops, information, and launching activities throughout the programme period, an ongoing cooperation between the NCP and JS that will continue.

#### THE NETHERLANDS

The Dutch delegation consists of a national representative and two representatives of the regional communities (provinces, municipalities, and water councils). They are in close contact with their likes in the country, and with interest groups in their regions and/or fields of expertise. Meetings are prepared in this delegation, or – if the programme’s agenda gives rise to it – with the broader National Advisory Committee.

## **5. Approach to communication and visibility for the Interreg programme (objectives, target audiences, communication channels, including social media outreach, where appropriate, planned budget and relevant indicators for monitoring and evaluation)**

*Reference: point (h) of Article 17(3)*

The communication strategy is designed to underpin the programme’s overall performance. This is done primarily by promoting the visibility of the programme, its supported projects and their impacts and achievements.

### **Objectives of programme communication**

1. To motivate potential beneficiaries from 100% of the eligible NUTS3 regions to apply for funding by 2025.
2. To support beneficiaries to communicate their activities and results to their target audiences, including the general public, with 100% of projects attracting national or international attention during their lifetime.
3. To empower minimum 50% of projects to engage with policymakers and minimum 50% of projects to engage with citizens.
4. To create visibility for the programme and the EU support through a. offering targeted messaging and visuals to projects and multipliers, b. growing the website’s traffic by 10% a year, and c. producing content showcasing project impacts and achievements (web pages, videos, articles, publications, etc.).

### **1. Target audiences**

The key audiences are generally located across all member countries. Some organisations are regional/European in scope.

<b>Audience</b>	<b>Role</b>
Potential beneficiaries*	Project developers and adopters**
Project beneficiaries*	Project implementers and adopters.
EU bodies and programmes	Partners and multipliers
The North Sea Commission	Multiplier
Regional, rural and city networks	Adopters and multipliers
Policymakers at all levels	Adopters and multipliers
Umbrella organisations, networks, and public/private partnerships*	Adopters and multipliers
Citizens	Multipliers and adopters
Media	Multipliers

\*Includes private and public sector organisations, SMEs, academic and educational institutions, and civil society organisations.

\*\*"Adopters" use and help mainstream project outcomes.

## **2. Communication tactics and channels**

The programme will develop its own brand identity including narrative and visuals and will use consistent messaging and taglines that are unique to the programme. However, joint EU and Interreg branding is an important priority and is therefore an integral part of this effort.

Communication efforts will be targeted to the specific audience, with an emphasis on audio-visual storytelling and campaigns where this makes sense. For example, a certain message may lend itself well to audio-visual communication or as part of European campaigns.

Communication is seen as a shared task and the secretariat will equip and empower projects, national contact points, and others to communicate about the programme.

The secretariat will take part in European and Interreg communication networks, campaigns, and events. Efforts will be made to communicate regional and local project activities and achievements together with the National Contact Points and other partners.

The programme will communicate through the following platforms:

- Programme website
- Programme newsletter
- The programme's Online Monitoring System
- Social media: The programme will grow its presence on LinkedIn, Twitter, and Facebook, and Youtube
- Joint Interreg platforms and media
- Events
- Publications
- Videos and other audio-visual materials
- Campaigns and contests including joint European efforts and own initiatives
- The media (mainly via the projects)

### 3. Planned budget

The table below provides the indicative overall communication budget by year.

2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
0	€60,000	€61,200	€62,424	€63,672	€64,946	€66,245	€67,570	€446,057

Nearly 50% of these funds are allocated to the programme’s digital platforms, mainly the programme website including all the project websites and an interactive partner search platform.

The remaining funds are expected to be used for external assistance (33%), software licenses and apps e.g. for surveys/graphics/video/newsletter etc. (14%), and rent & equipment (4%).

Also, 1.5 person years is allocated to communication, equivalent to €700,000 for the programming period. This leaves the total communication budget at 0,64% of the total programme budget.

### 4. Indicators for monitoring and evaluation

Annual communication evaluations will cover most indicators, while some apply to the projects’ lifetime or only after a certain date. The evaluations will be used to adjust the communication strategy. The data will be sourced from analytics, event registrations, evaluation forms, surveys, reporting, and the project database.

Indicator
Overall visibility & engagement
Beneficiaries located in 100% of NUTS3 regions by 2025
100% of projects attract national or international attention
50% of projects engage with citizens
50% of projects engage with policymakers
Website
10% increase per year of website visitors and page visits per year
30% returning visitors from 2023 onwards
Newsletter
5% subscriber growth / year
35% open rate
10% click rate
<i>LinkedIn</i>
10% follower growth / year
Engagement: 3% on average
<i>Twitter</i>
10% follower growth / year
Engagement: 1% on average
<i>Facebook</i>
10% follower growth / year
Engagement: 20 reactions per post on average
<i>YouTube</i>
5% follower growth / year

Events
400 participants in programme events per year
50 participants in communication events per year
85% positive ratings
Project support
85% positive ratings of website support by system users
85% positive ratings of general support by projects

## 6. Indication of support to small-scale projects, including small projects within small project funds

*Reference: point (i) of Article 17(3), Article 24*

The programme priorities will be implemented by using different project compositions. In contrast to the type of projects seen in the previous funding period 2014-2020, the concept of small scale projects will be used, where relevant, composed of projects with a shorter time frame, a more limited budget and a smaller partnership.

## 7. Implementing provisions

### 7.1 Programme authorities

*Reference: point (a) of Article 17(6)*

<b>Programme authorities</b>	<b>Name of the institution</b> [255]	<b>Contact name</b> [200]	<b>E-mail</b> [200]
Managing authority	Danish Business Authority	Pernille von Lillienkjold Niels Bjerring Hansen	PerLil@erst.dk NibJha@erst.dk
National authority (for programmes with participating third or partner countries, if appropriate)			
Audit authority	Danish Business Authority, EU Audit Unit	Svend H Welleberg, EU auditor	SveWel@erst.dk
Group of auditors representatives	- <i>To be filled in once the set-up for audit has</i>		

	<i>been agreed in the PPG – the programme will be operating with a mixed model where 3 countries will make use of a centralised private sector solution for delivering Second Level Control and the remaining countries will make use of a national auditor.</i>		
Body to which the payments are to be made by the Commission	Central Denmark Region, Accounts Department	Mette Jensen Jóna E. Kristiansen	Mette.Jensen2@stab.rm.dk JonaEileen.Kristiansen@stab.rm.dk

## 7.2 Procedure for setting up the joint secretariat

*Reference: point (b) of Article 17(6)*

Following consultations with the member states and Norway represented in the North Sea Programme, the Managing Authority will set up a Joint Secretariat as described in Article 46(2) of Regulation (Interreg Regulation). The Joint Secretariat will be based on the existing structure and staff of the secretariat for the Interreg VB North Sea Programme and will be operational immediately following approval of the Interreg Programme. Recruitment of staff for the Joint Secretariat will, as far as possible, ensure a wide representation of the programme area.

The secretariat will assist the Managing Authority and the Monitoring Committee in carrying out their respective tasks as described in Articles 28, 30 & 46 of Regulation (Interreg Regulation). Another important part of the support to the Managing Authority is support in relation to communication and the provision of a programme website as described in Article 36 of Regulation (Interreg Regulation).

The Joint Secretariat is part of the Central Denmark Region, Department for Regional Development and is located at Toldboden 3E, 8800 Viborg Denmark.

The Central Denmark Region acts as Intermediate Body in line with Article 65(3) of Regulation (CPR) and will deliver most of the tasks of the Managing Authority. The modalities of the interaction between the Managing Authority, the Accounting Function, the Intermediate Body and the Joint Secretariat are described in written agreement

between the Managing Authority (Danish Business Authority) representing the countries participating in the programme and the Intermediate Body (Central Denmark Region)

The Joint Secretariat will also assist the Audit Authority in the delivery of its tasks. Primarily, the secretariat will assist the Audit Authority in connection with the provision of data for sampling and financial information in relation to projects/beneficiaries selected for audit as relevant. The secretariat will also provide practical assistance in connection with the meetings in the Group of Auditors e.g. by taking minutes and providing background data. The secretariat will not participate in the audit of projects/beneficiaries.

The Joint Secretariat and the Accounting Function will be financed by the TA budget of the programme.

### **7.3 Apportionment of liabilities among participating Member States and where applicable, the third or partners countries and OCTs, in the event of financial corrections imposed by the managing authority or the Commission**

*Reference: point (c) of Article 17(6)*

In line with Article 52 of Regulation (Interreg Regulation) the Managing Authority will ensure that any amount paid as a result of an irregularity is recovered from the relevant beneficiary. In the event that it proves impossible to recover the amount in question e.g. as a result of bankruptcy, the member state on whose territory the beneficiary is located shall reimburse the Managing Authority any amount unduly paid to that beneficiary. In practice the recovery procedure will be prepared by the Intermediate body i.e. the Joint Secretariat.

The Non-Member State Norway will be subject to the same rules and procedure as the Member States participating in the programme. As a Non-Member State, Norway will, however, not be subject to financial corrections imposed by the European Commission.

The Managing Authority, the Audit Authority, the Group of Auditors, the European Commission or the European Court of Auditors may at any point during or after programme implementation detect systemic or other irregularities on programme or project level which might lead to financial corrections imposed by the European Commission in line with Articles 97 & 98 of Regulation (CPR). Apportionment of liabilities in these cases will be as follows:

- In cases where a financial correction is imposed as a result of irregularities and/or errors which are clearly the responsibility of a particular member state(s), the member state(s) in question will be liable.
- In cases where a financial correction is imposed as a result of a systemic error in the programme manifesting itself on project level and where it is not possible to attribute the irregularity and/or error to the First Level Control system in a particular member state, the liability will be shared by the member states. The

liability will be shared proportionally based on the allocation of funding to beneficiaries in the individual member states.

- In cases where a financial correction is imposed as a result of irregularities and/or errors in TA expenditure resulting from joint decisions by the participating countries, the participating countries will bear joint responsibility proportional to their respective share of the overall TA budget.

## 8. Use of unit costs, lump sums, flat rates and financing not linked to costs

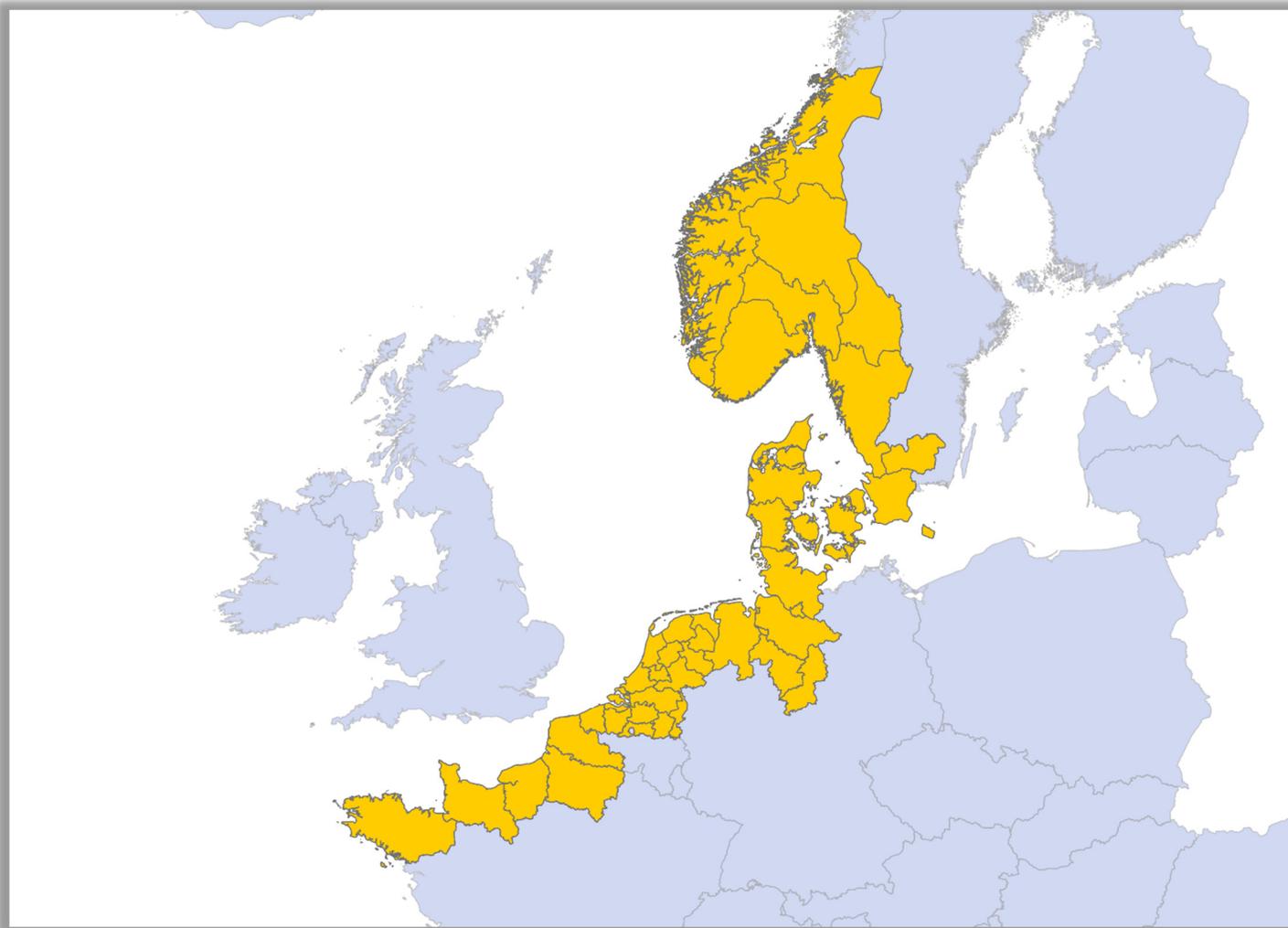
*Reference: Articles 94 and 95 of Regulation (EU) 2021/1060 (CPR)*

Table 11: Use of unit costs, lump sums, flat rates and financing not linked to costs

<b>Intended use of Articles 88 and 89</b>	<b>YES</b>	<b>NO</b>
<b>From the adoption programme will make use of reimbursement of eligible expenditure based on unit costs, lump sums and flat rates under priority according to Article 88 CPR (if yes, fill in Appendix 1)</b>		<b>x</b>
<b>From the adoption programme will make use of financing not linked to costs according to Article 89 CPR (if yes, fill in Appendix 2)</b>		<b>x</b>

## Appendix 1: Map of programme area and list of NUTS regions

*Reference: Article 17(3)(a)*



NUTS ID	NUTS LEVEL	COUNTRY CODE	NUTS NAME
BE21	2	BE	Prov. Antwerpen
BE22	2	BE	Prov. Limburg (BE)
BE23	2	BE	Prov. Oost-Vlaanderen
BE24	2	BE	Prov. Vlaams-Brabant
BE25	2	BE	Prov. West-Vlaanderen
DE50	2	DE	Bremen
DE60	2	DE	Hamburg
DE91	2	DE	Braunschweig
DE92	2	DE	Hannover
DE93	2	DE	Lüneburg
DE94	2	DE	Weser-Ems
DEF0	2	DE	Schleswig-Holstein
DK01	2	DK	Hovedstaden
DK02	2	DK	Sjælland
DK03	2	DK	Syddanmark
DK04	2	DK	Midtjylland
DK05	2	DK	Nordjylland
FRD1	2	FR	Basse-Normandie
FRD2	2	FR	Haute-Normandie
FRE1	2	FR	Nord-Pas de Calais
FRE2	2	FR	Picardie
FRH0	2	FR	Bretagne
NL11	2	NL	Groningen
NL12	2	NL	Friesland (NL)
NL13	2	NL	Drenthe
NL21	2	NL	Overijssel
NL22	2	NL	Gelderland
NL23	2	NL	Flevoland
NL31	2	NL	Utrecht
NL32	2	NL	Noord-Holland
NL33	2	NL	Zuid-Holland
NL34	2	NL	Zeeland
NL41	2	NL	Noord-Brabant
NL42	2	NL	Limburg (NL)
NO02	2	NO	Innlandet
NO06	2	NO	Trøndelag
NO08	2	NO	Oslo og Viken
NO09	2	NO	Agder og Sør-Østlandet
NO0A	2	NO	Vestlandet
SE212	3	SE	Kronobergs län
SE224	3	SE	Skåne län
SE23	2	SE	Västsverige
SE311	3	SE	Värmlands län

## Annex X: Additional data for France, the Netherlands and Flanders

Not all statistics in part 1 of the Interreg Programme take into account the French regions, the added Flemish regions or the added Dutch regions because none of these were included in the Scoping Study. The relevant statistics for these regions have been included for information in the table below.

Indicator	France (Hauts-de-France, consisting of Nord-Pas-de-Calais and Picardie, Normandie, consisting of Haute-Normandie and Basse-Normandie, and Bretagne)	The Netherlands (Gelderland + Utrecht + Noord-Brabant + Limburg)	Flanders (Prov. Vlaams-Brabant + Prov. Limburg)
P.9-10 – The regional average in GRP (Gross Regional Product) per capita, expressed in purchasing power parity (PPP) in 2018	Nord-Pas-de-Calais: 83 Picardie: 74 Haute-Normandie: 88 Basse-Normandie: 81 Bretagne: 89	Gelderland: 110 Utrecht: 159 Noord-Brabant: 132 Limburg: 115	Prov. Vlaams-Brabant: 128 Prov. Limburg: 96
P.9-10 – The national average in GDP (Gross Domestic Product) per capita, actual value in 2018	35,100	GDP for the Netherlands included in the data	GDP for Belgium included in the data
P.14 – Exposure to PM2.5 in countries and regions 2017	Hauts-de-France: 13,5 Normandie: 10,8 Bretagne: 9,0	Gelderland: 12,6 Utrecht: 12,9 Noord-Brabant: 12,6 Limburg: 11,6	All Flemish regions: 13,4

## Annex Y: References Interreg Programme

- [1] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/proj\\_19rp3/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/proj_19rp3/default/table?lang=en), 2021.
- [2] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/proj\\_19rp3/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/proj_19rp3/default/table?lang=en), 2021. The population change is analysed over the period 2013 - 2030.
- [3] Eurostat: <https://ec.europa.eu/eurostat/databrowser/view/tgs00006/default/table?lang=en>, 2020.
- [4] European Commission, Regional Working Paper, Measuring access to public transport in European cities, [https://ec.europa.eu/regional\\_policy/en/information/publications/working-papers/2015/measuring-access-to-public-transport-in-european-cities](https://ec.europa.eu/regional_policy/en/information/publications/working-papers/2015/measuring-access-to-public-transport-in-european-cities), 2015.
- [5] European Commission & Maastricht University, Regional Innovation Scoreboard 2021, <https://ec.europa.eu/docsroom/documents/46032>, 2021.
- [6] European Commission, Regional Innovation Scoreboard 2021, [https://ec.europa.eu/growth/industry/policy/innovation/regional\\_en](https://ec.europa.eu/growth/industry/policy/innovation/regional_en).
- [7] Smart Specialisation Platform, JRC at: <https://s3platform.jrc.ec.europa.eu/thematic-platforms-map>, 2020.
- [8] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/t2020\\_31/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/t2020_31/default/table?lang=en), 2019.
- [9] ESPON: <http://projects.mcrit.com/esponDB/index.php/main-data>, 2015.
- [10] ESPON: <http://projects.mcrit.com/esponDB/index.php/main-data>, 2015.
- [11] ESPON: <http://projects.mcrit.com/esponDB/index.php/main-data>, 2015.
- [12] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/tran\\_hv\\_psmod/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/tran_hv_psmod/default/table?lang=en), 2018.
- [13] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/tran\\_hv\\_frmod/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/tran_hv_frmod/default/table?lang=en), 2018.
- [14] Eurostat: <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>, 2019.
- [16] ESPON: <http://projects.mcrit.com/esponDB/index.php/main-data>, 2015.
- [17] OECD Environment database: <https://stats.oecd.org/index.aspx?queryid=72722>, 2017.
- [18] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/sdg\\_15\\_20/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/sdg_15_20/default/table?lang=en), 2019.
- [19] Eurostat: [https://ec.europa.eu/eurostat/databrowser/view/NRG\\_IND\\_REN/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_REN/default/table?lang=en)
- [20] European Commission, Directorate-General for Energy, METIS Studies: Study S8 – The role and potential of Power-to-X in 2050, October 2018, <https://op.europa.eu/en/publication-detail/-/publication/1e6b9012-6bbc-11e9-9f05-01aa75ed71a1/language-en/format-PDF/source-96288622>.