

North Sea Region 2020

**Draft document for consultation
approved by the
Annual Business Meeting
of the NSC on the
21 June 2011¹**



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¹ Version 22 June 2011

Table of Contents

1	Introduction	2
2	Purpose and objective	2
3	Scope	3
4	Challenges and Opportunities	3
5	Response: Priority strategic areas	6
5.1	Managing Maritime Space	7
5.2	Increasing Accessibility and Clean Transport	10
5.3	Tackling Climate Change	13
5.4	Attractive and Sustainable communities	16
5.5	Promoting Innovation and Excellence - a horizontal priority	20
6	Implementation, cooperation and coordination	22
7	Conclusions and the way ahead for the NSR 2020	24

DRAFT

1 Introduction

The North Sea Region (NSR) includes a number of strong economies and is one of the most successful regions of the EU. The NSR has the potential to act as an engine for growth in Europe as well as share best practices developed in the NSR, acting as a centre of excellence for the wider EU issues such as climate change. Large opportunities exist in the NSR which have to be unlocked, and it is therefore important to acknowledge that not only less advantaged regions need to catch up; also successful regions need to continue to succeed. Although the NSR is a successful region, the region is also struggling with a number of issues and is, for example, still not doing enough to meet all of the EU 2020 targets. Although large regional variations exist, some estimates say that the NSR as a whole is only on course to achieve a 9 % increase in energy efficiency.

By 2020, all citizens of the North Sea Region should have an even more attractive and prosperous region in which to live, work, visit and invest. The ambition of the North Sea Region 2020 is to remain an attractive and international area for citizens, businesses and organisations. This would entail a better governed region with improved cooperation and coordination at all levels. Better, faster and cleaner transport taking the environment, the ecosystems and the energy needs into account would, for example, be key factors. Opportunities exist to jointly improve the quality of living and economic development in a sustainable manner with due consideration to the consequences of climate change.

In order to address the EU 2020 challenges in the NSR, the NSR 2020 will set out the strategy for how the NSR will meet the objectives of the EU 2020 and thereby contribute to smart, green and inclusive growth for Europe. The North Sea Commission (NSC) and its members have been developing the ideas for the NSR 2020 since the Executive meeting in Haarlem in June 2009. Extensive consultation carried out amongst the NSC members in 2010, as well as the work of the thematic groups of the NSC, resulted in a number of inputs, which have been used to prepare this paper². In addition, a number of external institutions and actors have been consulted and have provided input to the process first and foremost during the stakeholder conference in Newcastle in March 2010.

As part of the discussion on macro-regions in the EU, the Committee of Regions (CoR) provided an opinion on the development of a strategy for the North Sea Region³. The CoR supports the development of regional strategies in general and the NSR in specific, as a new and innovative form of EU interregional cooperation which can contribute to consistency in actions in specific areas. The opinion identified a number of challenges, opportunities and areas for action which have been included/reviewed when preparing this strategy. The European Commission (EC) has also been consulted on prospect of developing a macro-regional strategy.

2 Purpose and objective

There is a need to develop the existing cooperation efforts, ideas and needs in the NSR. While many regional cooperation projects are individually excellent, they tend to arise in isolation rather than as important parts of a wider regional plan. To address this, the NSC has set out to prepare the NSR 2020. A common strategy for the NSR can assist in facilitating such an approach. It follows the inspiration from the EU Strategy for the Baltic Sea Region (BSR) and the Danube Region, now being implemented, underlining an integrated approach to sustainable development. The Baltic Sea Region experience demonstrates that a strategic approach and the actions of the priority can offer a framework for bringing together fragmented actions across levels and sectors. Regions can become new platforms for policy innovation in Europe, leading to development of sustainable growth, improvement of competitiveness and promotion innovation.

It should, however, be emphasised that the rationale for the NSR 2020 is different from the EU strategies for the Baltic Sea and Danube regions. Whereas the EU strategies for these regions are primarily motivated out of a need to improve socio-economic cohesion, competitiveness and environmental performance, the NSR 2020 is designed to

² This paper is based on existing analysis and inputs from the thematic groups of the NSC. No new or dedicated analysis has been made in connection with development of this strategy.

³ Committee of the Regions, Opinion on A Strategy for the North Sea-Channels Area (CdR 99/2010). 5-6 October 2010.

ensure that the North Sea Region competitiveness remains and further develops as a sustainable and attractive region and engine for growth in Europe. The NSR 2020 could therefore also be perceived as a potential pilot for a different kind of macro-regional strategy in Europe – as such, adding value to existing strategies.

The main aim of this present paper is to provide arguments for and demonstrate the added value and benefits of having a strategy for the NSR by identifying challenges, opportunities and priority strategic areas, as well as suggesting concrete measures to be implemented. By way of example, the strategy also points to existing cooperation which can inspire future actions and activities. The objective of the strategy is to focus on those issues which cross borders and where there is added value to working collaboratively. The strategy focuses on those areas of market failure where the intervention of the public sector at the macro-regional scale would bring about accelerated advancement and improvement which otherwise would not be possible or would happen at a significantly slower pace, for example in the creation of a North Sea Energy Grid.

3 Scope

The NSR is a functional area defined by the North Sea (NS). The NSR is more than the North Sea Basin, which physically links the region together, and it is important that a strategy engages and benefits all the communities of the region. Geographically, it concerns the North Sea regions of Denmark, Sweden, Germany, the Netherlands, Belgium, UK, France and Norway⁴. The **geographical scope** within each state could vary based upon the issue being tackled (e.g., coastal defences would be an issue for coastal regions, whereas hinterland transport connections could go quite far inland). The strategy remains open to other partners in the region⁵. Since the North Sea is connected to adjacent bodies of water, it should be coherent with perspectives in these relevant areas.

The NSR 2020 sets out priorities for the development of the NSR, supporting sustainable growth and aiming to reduce energy consumption, increase the use of renewable energies, modernise the transport sector by making it more environmentally friendly and more efficient, and to promote 'green' tourism. It will furthermore aim to remove internal market bottlenecks and improve the business environment. This draft strategy provides a framework for policy integration and coherent development of the North Sea Region. The five priority areas have been developed with the view to support the achievement of EU 2020 objectives. A further detailed action plan will have to be developed in order to specify the concrete actions which should be promoted.

4 Challenges and Opportunities

This strategy proposal follows an intensive period of identification of needs and possible cooperation areas in NSR, as described above. The main message to date has been that existing resources can be better used for common strategic objectives and that a strategy must deliver concrete improvement for the region and its people. It is furthermore paramount that this strategy receives the commitment of the NSR member states, the EU, and is based on the strong involvement of regional and local authorities as well as a wide spectrum of stakeholders.

There is a common cultural heritage in the NSR and a long history of intensive economic (trade and tourism) and human exchange. The NSR countries are stable democracies and can overall be characterised as research intensive knowledge economies through high levels of innovation and Research and Development (R&D) activities.

As a result of its economic position and high skill levels, the NSR has historically had good levels of employment. The North Sea region is one of the most prosperous parts of the EU and has traditionally had good GDP (gross domestic product) development. However, the overall economic performance of the NSR has declined during recent years compared to other OECD (Organisation for Economic Co-operation and Development) countries. Despite the long period of economic growth (until the 2008 financial crisis), most of the countries have faced falling

⁴ The geographical scope could be primarily based on countries which border the North Sea, as the strategy would ideally be adopted by Member States and Norway.

⁵ The CoR concludes that not all areas have to be covered, but that it is important to include the areas which the region shares

productivity rates in the last 10-15 years. In particular within the service sector, but also within manufacturing has this development been significant. The NSR, therefore, faces an overall challenge in terms of the regeneration of the rate of productivity in order to be able to maintain its position as a competitive player on the global market.

Table 1 Key economic indicators in NSR, EU and OECD⁶

	NSR 8	EU 27	OECD 30
GDP Development (2009)	- 3.9	- 4.3	- 3.5
GDP Development (2010)	2.31	1.80	2.93
Labour productivity (2009)	- 1.61	- 0.7	0.2

There are wide disparities within the NSR and the strong economy of the region is to a large extent driven by the south, which is closer to the core of the EU. The more densely populated areas in the south of the NSR have high levels of economic activity and good levels of accessibility compared to the north, which has some of the most sparsely populated areas of the EU, lower levels of economic activity and more limited accessibility. Large parts of the NSR depend on sectors such as agriculture and fishery with shrinking labour markets, or on declining traditional industrial sectors. As a result, the northern area experiences high levels of outward migration. In addition, urban economies have benefited from the shift towards higher-value knowledge based activities, both in the service and manufacturing sectors, bringing more, and better-paid, employment opportunities. In other parts of the NSR, the problem is one of lower-paid jobs, such as in the tourism sector, rather than a lack of employment, contributing to sluggish development.

A number of challenges have been identified as outlined in Table 2. To address all these challenges, there is a need for cooperation between the national, regional and local authorities, the business sector and universities and other knowledge producing institutions in order to be able to address these challenges with sustainable solutions. These challenges are best addressed together, identifying priorities, agreeing and implementing actions. For example, developers and conservationists must find innovative solutions, resolving together the most difficult issues for the benefit of the whole region.

The North Sea Region has considerable resources and possibilities for innovation and further development of human resources etc. The integration of and network between the north and south of the NSR are relatively underdeveloped and overcoming this offers real opportunities for the continued strength of the NSR. There is an immense development potential as well as a potential for developing solutions which can be transferred to the rest of the EU. Making the most of these opportunities also requires increased cooperation, joint planning and investment, and developing crucial links. Focus on innovation as a cross-cutting issue in all business sectors as well as in the public service is a prerequisite. The region is characterised by the opportunities listed in Table 2.

⁶ OECD Statsextracts: Economic outlook 89 June 11, labour productivity growth in the total economy.

Table 2 Challenges and opportunities for the NSR

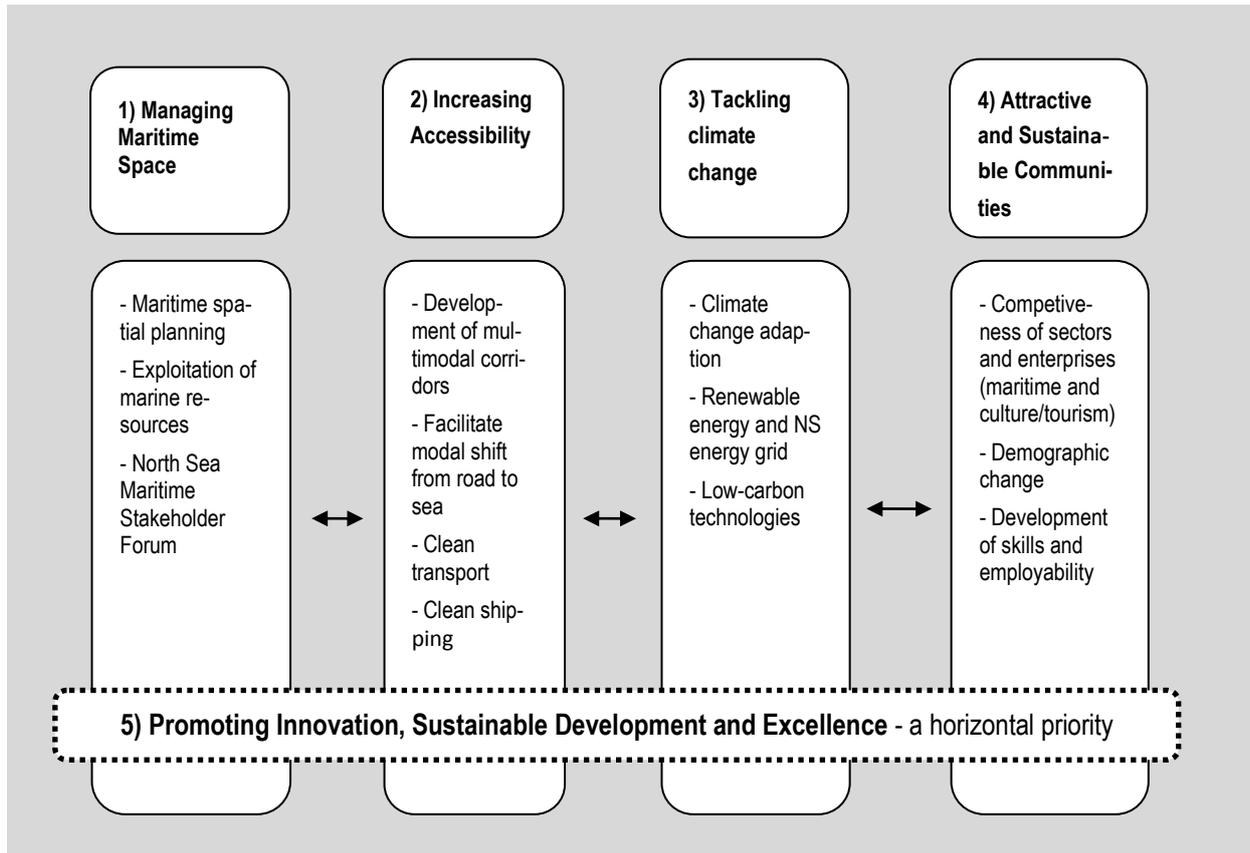
Challenges	Opportunities
<ul style="list-style-type: none"> • Mobility: The efficiency and costs of freight transport are hampered by congestion in and around the biggest ports in the Hamburg – Le Havre range. At the same time most peripheral parts of the North Sea Region suffer from poor accessibility due to low cargo volumes and long distances to the markets. It is a barrier to modal shift that sea-based intermodal transport is perceived as complicated and less reliable than road transport. There is therefore a need to improve the framework conditions of maritime transport to make it more competitive compared to road transport. • Energy: As the extraction of oil and natural gas will continue to be promoted in the North Sea, stringent common safety standards and systems to counter and limit threats are required to reduce the risks as much as possible and to enable a swift and effective response when needed. Given the rapid expansion of offshore wind farms, standards for their construction, safety, noise and pollution must be agreed. A precondition for climate adapted utilisation of these energy resources will be an interconnected grid which can help switching to renewable sources and using these in an optimal manner. Large investments will be required to reach this target. • Environment: Economic development and the increasing incursions of man have placed a great burden on the ecosystem and led to major environmental problems: the contamination of sea and beaches (including plastic waste contamination), increased pollution of waters with chemicals and heavy metals and from shipping and the extraction of natural gas and oil in the sea. Other problems include eutrophication of the coasts, breeding failure of birds, impacts of climate change (1-2° C). Further economic development will leave Nature 2000 sites in estuaries and coastal zones conflicting with the need to increase capacity of the ports. • Risks: The rise in the sea level and the increased danger to coastal areas from flooding caused by climate change will have an effect on the countries bordering the North Sea. Climate change can also put a further burden on the marine ecosystem through warming, water acidification and the influx of new species. Also exhaustion of natural resources like oil, gas and fish poses an issue for the region and, e.g., over-fishing of many kinds in many regions has left many stocks below the biological limit. Competing activities in the region, for example, the massive increase in the number and size of offshore wind farms expected over coming years means that wind turbines risk becoming a real obstruction for shipping, fisheries and other users of the sea. • Socio-economic: NSR faces challenges in terms of demography as well as securing that the region continues to be an attractive place to live. The coastal regions in the North Sea area have been impacted by the economic decline, especially in shipbuilding and fishing. On the other hand, as the economic climate changes, key sectors such as maritime transport and offshore operations should again become more important which will lead to tougher international competition for highly skilled labour. • Safety: Growth in offshore wind parks requires new focus on maritime safety and joint civil defence strategies to avoid risk scenarios. Furthermore, the sea bed of the North Sea is still littered with large amounts of munitions (estimated at 1 million tonnes) from the time of the Second World War, which presents a significant danger to shipping, the environment and people. 	<ul style="list-style-type: none"> • Transport and trade links: The comprehensive trade in the NSR and the availability of large ports constitute a significant potential for efficient and sustainable freight transport by sea. Short sea transport and motorways of the sea can be developed and better connected with inland waterways in the region; Planning for a North Sea grid – a comprehensive energy transport network – has been set in motion to realise the full potential of renewable forms of energy. Collaboration between Member States, regions and private partners could foster the necessary progress towards smart grids and the strengths of renewable energy generation, making the area a pilot region for e-Mobility; • Energy resources: Because of the geographical conditions, the North Sea has great potential for renewable energy, the expansion of which is crucial to a successful climate policy and for future economic growth and jobs. Energy from wind, waves, tide and currents needs to be further developed, researched and promoted. It is important for the region that the economic operators adapt to the environmental goals and that other stakeholders contribute to their implementation. • Environmental assets: The natural and territorial characteristics of the North Sea and the coastal areas have a huge potential. Prime among them are: a distinct and uniform ecosystem and the threats that beset it; climate and geology (use for renewable energies such as wind and tidal energy). Issues such as exhaustion of natural resources like oil, gas and fish need to be tackled collectively in order to prepare the basis for a future sustainable development. Planned in a stable, transparent and predictable manner, the opportunity to provide a sustainable development will increase. A joint spatial planning can make sure that the space available is used in the best possible manner. • Innovation/economic development. Innovation is a key feature of the region as the European Innovation scoreboard 2010 shows: all the EU countries of the NSR were among the 10 best performing⁷ countries of the EU 27. With improved cooperation, this innovative feature of the North Sea can become a centre of excellence if combined to a larger extent, instead of regions investing separately in wave power and trials of other renewable energy sources. The future lies in knowledge sharing in order to lead on green industry and being the first to market new products. • Cultural and human resources: Coastal regions around the North Sea have been intimately connected politically and culturally for two thousand years – through migration flows, close trade relations and through shared maritime traditions. The creative and cultural economy in many regions of the North Sea Region will assume increasing importance for growth and employment in this area, notably by cultural and academic exchange programmes and the link between culture and sustainable tourism across the area. Cross-thematic research initiatives for the region could be launched, geared to gather knowledge about the North Sea Region from all disciplines to underpin the innovation culture and the economic development.

⁷ <http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010>

5 Response: Priority strategic areas⁸

Five priority strategic areas address the major challenges and opportunities identified. Each comprises focus areas and distinct fields of action. Promotion of innovation and excellence will function as a horizontal priority running through all identified areas. The priority areas are closely connected and interdependent: e.g., the development of the tourism industry is connected and depends on, e.g., developments under accessibility. These five priority areas are outlined in Figure 1:

Figure 1 Priority areas and their interconnections



⁸ The descriptions of the sectors and the focus areas are preliminary and will require additional data collection, analysis and identification.

5.1 Managing Maritime Space

The North Sea is a very complex and open marine ecosystem, providing a nursery for fish and a migratory and wintering area for many species of birds. It is also one of the most heavily used seas, supporting fishing, shipping, trade, energy, sand mining, defence and recreation. Increasing economic activity in the sea, such as growing shipping traffic and the development of offshore wind farms, leads to increasing competition between users of the sea. A key challenge in the North Sea is the management of conflicts between competing and potentially conflicting activities like renewable energy, fishing and shipping, while securing a sustainable development for the environment and recreational activities.

It is widely recognised that the Common Fisheries Policy (CFP) in the EU has so far fallen short of its targets and is up against considerable challenges: over-fishing of many kinds and in many regions, too high fishing capacities, and illegal and unregulated fishing which has so far not been effectively curbed. The CFP has not supported the delivery of sustainable fishing and has been characterised by a system of short-time focus and imprecise policy objectives. However, much has been done and achieved in the North Sea to address many of the above mentioned challenges both by the fishing industry and national administrations. For instance, real time closures of fishing areas, cod avoidance plans, technical measures (square mesh panels and increased fishing net mesh size), and long-term management plans for specific fish stocks⁹. The over capacity of the fishing fleets in the North Sea has greatly diminished over the past decade, mainly due to decommissioning. Many of the fishing fleets are already undertaking some form of re-structuring and some fleets have been cut by 50 %. On the matter of discards, the industry is currently testing three different fishing nets to try and eliminate discards from the nephrops¹⁰ fisheries. The North Sea Regional Advisory Council (NSRAC) has produced advice on the discards in the whiting fisheries and has prepared and approved a resolution on the elimination of discards and Illegal, unreported and unregulated fishing (IUU).

Particular concerns exist regarding the impacts of offshore energy infrastructure, such as cables, pipelines, wind and CO₂ (Carbon capture and storage - CCS) sites, on safe shipping and the ecosystem. Understanding the risks and improving safety in the North Sea will become more and more important given the increasing pressure on space. Spatial planning needs to be extended to integrated maritime planning, and a holistic approach to the activities and the impact of irreversible climate changes is necessary¹¹. At the moment, four countries in the NSR have a framework for Maritime Spatial Planning (MSP) or are developing one¹². The EU Road Map¹³ sets forward 10 principles which should govern maritime spatial planning: using MSP according to areas and type of activity, objective to guide MSP, transparency and stakeholder participation, coordination within MS, legal effects in relation to national MSP, cross-border cooperation and consultation, monitoring and evaluation and coherence between terrestrial and maritime spatial planning and the relation with Integrated coastal zone management (ICZM).

If a truly Integrated Maritime Policy is to be achieved, dialogue between all the users of the North Sea is needed. In order to facilitate access to marine resources, a space or forum must be created to promote discourse between all users of the North Sea, where common interests can be developed and identified; and in turn used to influence and support governments and other decision makers. Thus, the immediate requirement is for a forum to address each other's concerns, especially regarding the expansion of economic and commercial activities in the North Sea. Being perhaps the most heavily used sea basin in the World, the North Sea is an ideal sea basin for piloting such an informal integrated maritime forum.

Priority focus:

- The need for **Maritime Spatial Planning** and comprehensive resource management is therefore urgent due to the intensive use of the North Sea, in order to reduce the increasing potential for conflicts between

⁹ Information on the mentioned measures can be found on: www.nsr.ag.eu

¹⁰ **Nephrops** is a genus of lobsters comprising a single extant species, *Nephrops norvegicus*

¹¹ Maritime Spatial Planning in the EU - Achievements and Future Development. COM (2010) 771. 17.12.2010.

¹² Ibid.

¹³ Ibid.

users of the sea. Harmonised plans and policies would lead to more effective use of space and the available resources. In order for the NSR to fully exploit the sea without affecting the fragile ecosystem, while also preserving the economic and socio-economic importance of fisheries to the region, a coordinated approach is needed which will take cross-border issues into account and ensure effectiveness of national and EU policies and reduce the cost of regulation. A close integration and coordination between MSP and ICZM is also paramount as coastal zone "hinges" between terrestrial and maritime systems.

- **Exploitation of marine resources:** Fishing areas need to be studied and assessed to ascertain which form of management best suits the sea region, the kinds of fish caught and the type of fleet. The revision of the CFP offers a real possibility to include MSP in the sustainable management of the maritime resources in the North Sea, particularly if responsibility for its delivery is devolved to the regional sea-basin level. Other challenges to be taken into consideration in the reform of the CFP are the reduction/elimination of discards and the engagement of wider stakeholders in fisheries management. Partnership working between scientists and other stakeholders should also be a priority to improve the quality of fisheries scientific advice and combat data deficiency.
- The **North Sea Maritime Stakeholder Forum** should be formed and organised by stakeholders themselves – as a partnership. Activities could begin with cross-sectoral working groups considering current and future issues. Thus, the immediate requirement is for a forum to address concerns, especially regarding the expansion of economic and commercial activities in the North Sea. Such a Forum could also provide a platform to look at the impacts upon all sectors of implementing the Marine Strategy Framework Directive, Marine Spatial Planning, the bringing forward of proposals for Marine Protected Areas and the proposed reform of the CFP; Fisheries; Oil & Gas; Renewable Energy; Ports; Shipping; Environmental NGOs; Regional & Local Authorities (through the NSC); Scientists & other experts; Maritime Heritage; Training Institutes.

List 1 Important measures under the priority Management of Maritime Space

- Promote a coordinated approach which will take cross-border issues into account and ensure effectiveness of national and EU policies¹⁴ and reduce the cost of regulation.
- Promote harmonised plans¹⁵ and policies, leading to more effective use of space and the available resources, i.e. MSP and ICZM.
- Fishing areas need to be studied and assessed to ascertain which form of management best suits the sea region, the kinds of fish caught and the type of fleet.
- Promote dialogue between all the users of the North Sea to facilitate integration of the full range of EU policies.
- Facilitate access to marine resources by creating a space or forum where common interests and conflicts can be identified, which can then be used to influence and support governments and other decision makers.
- Ensure a proper balance of activities across the North Sea, without one sector dominating others, seeking integration and compatibility of interests.
- Persuade member states to engage with each other to discuss problems extending across national boundaries. For example, issues over management measures to be adopted at Natura 2000 sites.
- Pay due attention to the differences between the Common Fisheries Policy, which falls within the exclusive competence of the Commission, where there is a common approach, and the varied implementation of other directives, which is the responsibility of member states.
- Facilitate involvement of third countries like Norway, the Faeroes, Iceland and Russia.

¹⁴ Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU. COM (2008) 791. 25.11.2008.

¹⁵ At the moment, four countries in the NSR have a framework for MSP or are developing one.

Box 1 Examples of actions and cooperation projects in relation to Management of Maritime Space

- **North Sea Regional Advisory Council.** The aim of the NSRAC is to work towards integrated and sustainable management of fisheries in the wider context of the sustainability of the marine environment. The NSRAC has so far provided advice to the European Commission on a wide range of subjects including discards; Total Allowable Catches and quotas; cod recovery, Maximum Sustainable Yield, Real Time Closures and technical measures. Its present work is focused on developing Long-Term Management Plans for key species; Maritime Spatial Planning; and tackling deficiencies in available scientific data¹⁶.
- **Living North Sea (LNS)** project will solve problems surrounding the management of fish species which rely on moving between the North Sea and freshwater systems of partner countries. These species are under considerable threat, some even in hazardous decline. Living North Sea brings together representatives from across the NSR countries, in a project that will make long lasting changes to the way that migratory fish species, whose stocks are shared between nations, are managed in the region. A permanent management group for migratory fish of these habitats should be created by working collaboratively and integrated in future policies on the national and EU level¹⁷.
- **Sustainable Coastal Development in Practice (SUSCOD)** aims to make a step change in the application of integrated coastal zone management (ICZM). Partners from five countries will develop an innovative Integrated Coastal Zone Management (ICZM) 'assistant'. SUSCOD brings together partners that want to change this through a well coordinated transnational team approach. This practical web based tool will allow coastal development practitioners to fully realise coastal potentials: economic, social and environmental¹⁸.
- **Tidal River Development (TIDE)** considers tidally influenced NSR estuaries with large sediment transportation which are used as shipping channels to large harbours. TIDE will lead towards a more sustainable and effective use of large-scale investments made in mitigation and compensation measures in NSR estuaries by applying, for the first time, a unified ecosystem approach to guide the process of integrated participatory management planning. Thus, TIDE will not only improve the effectiveness of European, national and regional policy and provide instruments for regional development, but will make an essential contribution towards a more sustainable and effective use of investment in North Sea estuaries¹⁹.

¹⁶ www.nsrac.org.

¹⁷ Interreg IVB NSR: www.livingnorthsea.eu

¹⁸ Interreg IVB NSR: www.suscod.eu

¹⁹ Interreg IVB NSR: www.tide-project.eu

5.2 Increasing Accessibility and Clean Transport

The countries around the North Sea constitute a potential market of over 252 million consumers, and industry and consumer demand creates large flows of both imports and exports. Due to road congestion in Europe and the benefits of short sea shipping (SSS), as a sustainable part of the logistics chain, a demand has emerged for the extension of the North Sea short sea network. The North Sea is one of the busiest maritime regions²⁰ in the world and central to this activity is short sea shipping. Short sea shipping in the North Sea Region totalled some 600 million tonnes in 2006. Economic development in NSR and in the global economy is likely to further increase traffic.

The North Sea Region has a unique position in terms of logistics in Europe, playing a key role as Europe's largest transport hub and is at the heart of this economic activity. In this picture, the seaports play a major role as logistics centres. However, maritime transport suffers from time-consuming and complex administrative handling procedures where the data flows are too often paper based. The majority of the small ports have no electronic data transmission in general. As a result, the interoperability between different ports and different information systems used in the ports is not satisfactory, limiting the possibilities for integrating new joint services and creating economies of scale.

Substantial progress has been made during the last decade to enhance the environmental performance of transport; however, the transport system is still not sustainable. Transport has become more energy efficient, but still depends on oil and oil products for 96 % of its energy needs. It is clear that transport cannot develop along the same path if EU emission targets are to be achieved. A reduction of at least 60 % of Green House Gases (GHGs) by 2050 with respect to 1990²¹ is required from the transport sector, which is a significant and still growing source of GHGs. By 2030, the goal for transport will be to reduce GHG emissions to around 20 % below the 2008 level. Urban transport is responsible for about a quarter of CO₂ emissions from transport, and 69 % of road accidents occur in cities.

Although maritime transport is one of the most environmentally friendly modes of transport in terms of energy consumption per transported unit, the increase in global volumes nevertheless makes shipping a significant source of air pollution. Ships are the largest single emission source for nitrogen oxide, particulate matter and sulphur oxide emissions in the transport sector. Ports suffer from air pollution not only due to the arrival/departure of ships, but also due to emissions during their stays at berth. Today, new regulations have been set into force. Besides the international MARPOL (maritime pollution) regulation of the IMO (International Maritime Organization), the EU has introduced the Directive on sulphur content of marine fuels.

Priority focus:

- **Promote development of multimodal transport corridors and facilitate modal shift from road to sea.** The efficient movement of goods and passengers depends upon well-functioning transport corridors and effective mechanisms for transfers across transport modes, e.g., road – rail – sea. Corridor concepts like Motorways of the Sea (MoS) and short sea shipping can reduce congestion by transferring the transport of goods from road to sea, improve the accessibility of peripheral regions and stimulate regional competitiveness. The competitiveness of maritime transport is vital to ensure transfer of cargo from road to sea. A superior, simpler and fairer policy mechanism could be to focus on the internalization of external costs for road transport, aiming at greater cost recovery of infrastructure costs through user charging mechanisms. In order to facilitate a modal shift from road to sea, it is even more important to allow for incentives to minimize the financial risks for players in the sector, e.g., port authorities, ship owners, freight forwarders and other haulage companies.
- **Optimising performance of multimodal logistic chains.** Supporting the continuous development of the logistics sector as a whole, particularly the technologies underpinning distribution systems, is critical to im-

²⁰ 260,000 ship movements per year (and estimated to grow by 14-31 % in the coming years).

²¹ This would correspond to emissions cuts of around 70 % below 2008 levels.

proving levels of accessibility across the North Sea Region. The cost savings achieved and improved access to markets benefit businesses across the Region, whilst local markets benefit from greater choice and competition. Developing more efficient and effective logistical processes, including intermodal technologies, also offers benefits in areas of transport congestion by increasing the capacity of the existing infrastructure. Innovations in Intelligent Transport Systems (ITS), such as rail traffic management systems (ERTMS), intelligent transport systems for road, River Information Services (RIS), EU's maritime information systems SafeSeaNet and Long Range Identification and tracking of vessels would exploit the capacity of the transport system in a better way. Devices to track the location of vessels and cargo would also improve transparency and reduce perceived barriers to use of maritime transport

- **Clean transport.** A mix of different measures is required to make transport cleaner. Demand and mobility management and the optimisation of multimodal logistic chains may reduce people's travel need, and minimise distances and volumes for freight. The introduction of greener fuels will reduce GHG emissions. In urban transport, the use of smaller, lighter and more specialised road passenger vehicles would be a solution. These could make a substantial contribution in reducing the carbon intensity of urban transport while providing a test bed for new technologies and an opportunity for early market deployment. Innovative devices like integrated ticketing and traffic information systems across various forms of public transport, i.e. buses, trains, vessels and planes, would furthermore simplify combined transport and contribute to increased occupancy rate²². Innovation and research on the effective deployment of new technologies on fuels (i.e. Liquid Natural Gas - LNG, hydrogen, shore side electricity) and vehicles will be key to lowering transport emissions from all modes of transport, including shipping.
- **Clean shipping:** It is important that shipping becomes more sustainable and environmentally friendly so that it remains a reliable and cost-effective mode of transport. Particular support, measures and incentives are needed to take forward strategies such as Clean Shipping, the Zero Emissions Ship and Green Harbour. The North Sea is a prime location for maritime pilot projects with global implications to improve environmental and safety standards of maritime transport and the promotion of Short Sea Shipping. With its network of ports and commercial shipping, as well as public agencies operating in national contexts, it is an ideal testing ground for solutions which can be applied world-wide through collaboration with shipping institutes such as the International Maritime Organization. Efforts to reduce sulphur levels in fuel, by application of Annex VI of the IMO's MARPOL Convention should be continued, but the EU must make efforts to try and offset the increased costs incurred by these regulations for ship owners operating in the Baltic Sea, English Channel and North Sea, which have been declared special Emission Control Areas (ECAs) by the IMO.

²² The percentage of the total capacity for passengers.

List 2 Important measures under the priority Accessibility and Clean Transport

- Implement measures to counteract the uneven playing field between transport modes, currently disfavoured maritime transport. In particular, implement the EU concept for “maritime space without borders”, under which administrative formalities like customs for intra-European shipping shall be simplified on equal footing with what applies for land-based modes.
- Focus on the internalization of external costs for road transport, aiming at greater cost recovery of infrastructure costs through user charging mechanisms, in accordance with the “user & polluter pay principle”.
- Good access to the future Trans European Network - Transport (TEN-T) core network for peripheral and maritime regions with weaker transport flows, fewer route and service options and higher transport costs.
- The future TEN-T guidelines also need to put stronger focus on the cohesion objective of MoS – currently disfavoured applications from peripheral regions.
- Allow for stronger incentives to minimize the financial risks involved in starting up new or improving existing sea-based services.
- A package of European measures needs to be introduced, simplifying the framework for public grants through the Motorways of the Sea scheme and an upgrading of the Marco Polo programme.
- Invest in the development of supplementary infrastructure measures such as Intelligent Transport Systems and innovations in vehicles and green fuels technologies with a potential for optimising the capacity and decarbonising the transport system.
- Introduce particular support, measures and incentives to improve the environmental performance of shipping needed to take forward strategies such as Clean Shipping, the Zero Emissions Ship and Green Harbour.

Box 2 Examples of actions and cooperation projects in relation to Accessibility and Clean Transport

- **The Northern Maritime Corridor (NMC) project** promoted a sea based transportation corridor stretching from Northern Norway and North West Russia to the UK and European continent. The projects produced various sea transport solutions like Short Sea Shipping development initiatives and concepts for transport of sea food and petroleum products. A comprehensive network with Russia to promote the NMC as an alternative route to Russia. Furthermore, NMC phase II contributed to the acceptance by the European Commission to extend the ‘motorways of the sea’ network into the Barents region²³.
- **The StratMoS project** has produced concrete tools to facilitate the implementation of the Motorways of the Sea concept. Such tools make it easier for maritime transport actors to benefit from the MoS funding instruments, in turn promoting a shift of freight from road to sea. The project has specifically drafted criteria for MoS applications in peripheral areas as a way of promoting funding applications from such areas.
- ICT²⁴ mechanism to monitor the security status of the container to reduce handling time and costs through ports and terminals, in particular Russian ports/terminals. The mechanism has been developed by the **StratMoS project** and is currently tested on door to door transports between Flanders and Russia. With this tool, the cargo owner may easily trace the whereabouts of the cargo at any time, whereas the port on the receiving end in Russia is pre-notified about the arrival of the shipment (what and when)²⁵.
- Dry ports - adding capacity to sea ports and facilitating more sustainable modes. Dry ports, understood as intermodal terminals situated some 30-200 km into the hinterland, serve to improve performance of multimodal logistics chains by adding capacity to sea ports and by facilitating the use of more sustainable modes like rail. **Dryport** is a project examining the development, design and effective operation of dry ports. A dry port in Fallköping, Sweden, was established by the **SustAccess project** under the Interreg IIIB North Sea Programme²⁶.
- **Clean North Sea Shipping (CNSS)** contributes to the large scale installation of “clean shipping” technology around the North Sea e.g. by developing cost-effective implementation concepts (show-cases). These concepts are comprising testing and installation of shore side electricity infrastructure in ports, as well as the uptake of Liquid Natural Gas (LNG) as ships fuel. Furthermore CNSS wants to pave the way for an incentive and regulatory framework which causes an increased use of environmentally friendly technologies and fuels in shipping²⁷.

²³ Interreg IIIB North Sea Programme: www.northernmaritimecorridor.no

²⁴ Information and communication technology

²⁵ Interreg IVB NSR: www.stratmos.com/home/dp4---secured-trade-lanes-in-the-north---continent-Russia-corridor

²⁶ Interreg IVB NSR Programme: www.dryport.org/index.php?page=10, and in www.sustaccess.org/

²⁷ Interreg IVB NSR: www.northsearegion.eu/ivb/projects/details/&tid=130&back=yes

5.3 Tackling Climate Change

One of the main challenges facing the North Sea Region is climate change, with the adaptation and mitigation measures that this will require. Increased precipitation and flooding in the North (parts of the North Sea will be under sea level), coupled with increased temperatures and aridity in the South will cause significant changes to both physical and human geography in Europe. The severity of the impacts of climate change varies by region. Rising sea levels and the increased danger to coastal areas from flooding at times of extreme weather conditions have a specific and similar effect on the countries bordering the North Sea. Climate change will add stress to fisheries and aquaculture sectors as well as have severe effects on costs and marine systems. The coastal zones erosion rate will increase and existing defences may provide insufficient protection. For the North Sea, these are all very important issues which impact the key economic section and therefore need to be addressed and tackled with common strategies and approaches across policy areas.

While all the countries in the NSR have or are planning to adopt a national climate strategy as foreseen by the UNFCCC²⁸, there will be a need for coordination and development of a common approach to climate change in the NSR as a shared common resource. Developing the knowledge base through common research, sharing of data, cross-border studies etc. will be paramount to the development of a common and innovative approach to adaptation. Dealing with climate change also means investing in the development of a low-carbon economy promoting innovative ideas within energy efficiency and green technologies. One of the key issues will be to raise awareness of the issue among the public and the business community and explain the link between the actions and climate change.

With these challenges also come opportunities, and the NSR can position itself to adapt to a new climate and build industries around this. Due to its geographical conditions, the North Sea has a huge potential for renewable energy from wind, waves, tide and currents. Taking advantage of a natural shift towards renewable energy as fossil resources become depleted, the NSR is ideal for large-scale wind, wave and tidal energy projects given its natural assets and technological expertise. The cost of renewable energy technologies remains high and a joint strategy could boost their development and competitiveness. The EU Directive on renewable energy sets ambitious targets for all Member States, such that the EU will reach a 20 % share of energy from renewable sources by 2020. These energies will play an essential role in meeting the EU climate and energy targets. In its communication "Energy infrastructure priorities for 2020 and beyond", the European Commission acknowledges the energy production capacities in the Northern Seas and proposes that an offshore grid in the northern seas with connection to Northern as well as Central Europe is among the priority corridors which will make Europe's electricity grids fit for 2020. On this basis, nine EU North Sea countries (about 90 % of all EU offshore wind development) as well as Norway chose a regional approach and signed a Memorandum of Understanding (MoU)²⁹ with the objective to coordinate offshore wind and infrastructure developments in the North Sea.

Priority focus:

- **Climate change adaption³⁰.** As a common resource, the regions and countries of the North Sea have a joint responsibility and need to tackle climate change together by means of common and coordinates efforts and measures. The first step in climate adaption is to develop a knowledge base³¹ as well as assess the impact of different climate change scenarios. In order to do this, efforts will be needed to develop the knowledge, skills and methods as well as share information with other regions in the EU and in general. The second step will be to asses which institutional and regulatory measures need to be taken to tackle the climate change. A key issue will be to promote strategies which increase the resilience of other policies (e.g., health, social, agriculture, biodiversity) to climate change. The North Sea possesses unique experi-

²⁸ United Nations Framework Convention on Climate Change

²⁹ The North Sea Countries' Offshore Grid Initiative - Memorandum of Understanding.

³⁰ Adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderate, harm or exploit beneficial opportunities (IPPC 2001b: Annex b).

³¹ European Commission. White Paper. Adapting to climate change: Towards a European Framework for action. CO; (2009)147 Final.

ence in dealing with the changes in sea level that climate change may provoke and should be able to tackle these challenges by prioritising joint research projects, the exchange of salient information and the coordination of tangible coastal protection measures. It will furthermore be required to raise awareness of both climate change itself and the impacts, and even more importantly to provide the knowledge of the adaptation measures and possible strategies at all levels of government as well as with the general public.

- **Low-carbon technologies and energy efficiency/green technologies.** Climate change is influenced by and influences more or less every aspect of life in an industrialised society. There are climate aspects related to food, travel, living and jobs. Focus should be on promoting innovations in low-carbon technologies in sectors such as transport, energy efficiency, climate-proofing land use and planning regulations, community capacity building and green procurement. The potential for innovations and development is significant and green growth should be promoted in the NSR. An important aspect of this is to promote and develop innovative solutions across borders, e.g., developing common systems for charge in electrical cars, which also can be exported to other regions.
- **Renewable energy and North Sea energy grid.** The energy challenge is one of the greatest tests facing today's Europe. The NRS should substantially contribute to the reduction of greenhouse gases and other pollutants. Depleted oil and gas fields may have the potential to be used to store greenhouse gases. A coordinated approach in the NSR in response to the growth and demand for renewable energy could lead to economies of scale, making renewable energy more accessible to all of Europe. This brings with it a pressing need for collaboration between Member States, regions and private partners on energy and major power generation infrastructure³². If the necessary progress towards smart grids takes place, the strengths of renewable energy generation could make the NSR a pilot region for e-Mobility.

List 3 Important measures under the priority Climate Change

- Identification of the vulnerable areas in the NSR, including scenario for climate and socio-economic scenarios, assessment of vulnerability of key economic sectors, and prioritisation of risks and possibilities related to climate and climate adaptation.
- Development of a catalogue and action plan for climate adaptation in the NSR (mainstreaming of programmes in relation to national and EU programmes)³³.
- Raise awareness and provide access to knowledge of climate adoptions throughout local regional and national levels as well in the general public.
- Raise the adaptive capacity of regions by stimulating and acting collectively for Climate Proof Areas (CPA).
- Promotion of innovations and green growth in low-carbon technologies in sectors such as transport, energy efficiency, climate-proofing land use and planning regulations, community capacity building and green procurement.
- Promotion of solutions across borders, e.g. common system for recharging of electrical cars.
- Securing energy supplies, an efficient use of resources as well as innovative solutions are crucial to a long-term sustainable growth, job creation and quality of life in Europe.
- Foster strong regional approach for planning and developing of grids.
- Promotion of joint and cross-sectoral approach could help to ensure that developments such as wind farms can complement and enhance, rather than threaten other maritime activities.
- Planning for a North Sea grid³⁴ – a comprehensive energy transport network – to realise the full potential of renewable forms of energy.
- Further development and applications of sound methodologies for building climate and socio-economic scenarios.

³² The North Seas Countries' Offshore Grid Initiative. Memorandum of Understanding. February 2010.

³³ White Paper. Adapting to climate change: Toward a European framework for action. COM (COM 2009) 01.04.2009.

³⁴ Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network. COM (2010) 677/4.

Box 3

Examples of actions and cooperation projects in relation to Climate Change

- **Climate Proof Areas.** CPA aims to create a portfolio of climate adoption strategies for the North Sea Region. This will be done by carrying out multi-focused pilot projects across the NSR in order to analyse the impacts of climate changes as a first step. Subsequently, diverse climate adoption strategies will be developed, implemented and tested. In addition, the project will foster political support established by the Memorandum of Understanding of the North Sea Commission, triggering future investments on a transnational level³⁵.
- **CCS.** The project aims at identifying a basis for a common infrastructure and solutions for capture, transport and storage of CO₂ from large sources in the region. The project also identifies the prerequisites for the industry using this infrastructure. Develop competence and knowledge on the value chain from leak to capture to transport and storage to find common solutions and thereby contribute to reduction of CO₂ in the region³⁶.
- **Cradle to Cradle Islands (C2CI).** The project will focus on the development of new and sustainable energy-related technologies and strategies on islands around the North Sea Region. C2CI will develop and implement the cradle-to-cradle (C2C) methodology for NSR islands, i.e. designing intelligent products and materials that can be used over and over again and thus replace the concept of waste. Three development clusters that focus on sustainable energy in relation to mobility, water and materials will create relevant networks and deliver sustainable innovations for the islands' environments. Incubator centres on the partner islands will foster further development and implementation³⁷.
- **A North Sea Way to Energy-Efficient Regions.** The 2007 "Energy Policy for Europe" aims to improve energy efficiency by 20 % by 2020. The project promotes the reduction of carbon emissions through increased energy efficiency amongst businesses and communities within the North Sea Region. Promoting changes in practice by addressing attitudes and behaviour of businesses and societies, therefore leading to a reduction in energy use (and hence in carbon footprint). A Climate Barometer Monitoring Tool which will be used to monitor and visualise the real time energy and climate performance of the participating communities and SMEs³⁸.
- **Carbon Responsible Transport Strategies for the North Sea Region. The Care North project** aims to develop a comprehensive, strategic and practical approach to urban and regional transport/accessibility in the North Sea Region in the context of climate change and declining oil supplies. The project has presented the first electric VW Golf version and charging infrastructure in Bremen, and ten telematics systems in different car models/makes have been installed in Gothenburg. As a direct result of the project's participation at EXPO 2010 in Shanghai, a Chinese taxi company decided to adopt the methodology developed by the project on electrical cars³⁹.

³⁵ Interreg IVB NSR: www.climateproofareas.com

³⁶ Interreg IVA Øresund-KattegatSkagerrak Programme: www.ccs-skagerrakkattegat.eu

³⁷ Interreg IVB NSR: Programme: www.c2cislands.org

³⁸ Interreg IVB NSR: www.answerproject.eu

³⁹ Interreg IVB NST: www.care-north.eu

5.4 Attractive and Sustainable Communities

The NSR needs to be equipped to respond to and recover from the global economic crisis to allow industries and communities to prosper. One of the weaknesses of the region has been its reliance on traditional sectors such as fisheries and agriculture in large parts. Some parts of the region are top performers with regard to highly educated people, and expenditures on Research and Development⁴⁰ and innovation are also key features of the region. The fisheries and shipping sectors have been affected by decreasing demand for goods and services, putting jobs at risk, and it is therefore important to strengthen these sectors. The potential of emerging sectors such as tourism, renewable energy, research and innovation should be strengthened through a common approach. By increasing the diversity and knowledge-base of the economy, the North Sea Region can better compete globally.

Europe 2020 identifies the **maritime sector** as one of Europe's strengths to contribute to sustainable economic growth. In a historical perspective, the maritime sector has been the driver of economic development in the NSR and the North Sea has provided the European food industry with high quality fish. In more recent years, oil and gas have become a major North Sea industry anchored in regions around the North Sea. Shipping enables world trade which characterises many of the regions around the North Sea. The North Sea - with its strong winds, huge waves and currents - will be an important provider of renewable energy not just for the region, but for the whole of Europe. There are opportunities for economic growth within highly specialised maritime clusters comprising cutting edge technology in various fields, notably geared to the environment and favouring green growth. These factors could be better developed, better connected and made more mobile throughout the region, making the region a thoroughly innovative region, a centre for excellence and best practices.

Tourism is an important part of EU 2020 and a specific proposal was developed by the EU commission in 2010⁴¹. Through its 8 million people directly employed in the EU tourism sector, tourism's direct contribution in terms of jobs is particularly significant in some tourism-intensive economies. It also has an important indirect effect on employment in related services. Some sources estimate that travel and tourism jobs in the EU will increase by 2 million in the coming 10 years. Tourism is seen as a major opportunity for job creation over the coming years, in particular in less developed and peripheral regions. The European tourism sector faces a number of challenges, in particular global competition. The key competition for the NSR is the Mediterranean area and well as other emerging tourism destinations. The NSR is not well known as tourism destination, but has nevertheless the potential to develop into an interesting destination for tourists. Key factors promoting this are low cost flights and a changing demand for different vacation types. The key markets will be countries close to the NSR as well as intra-regional tourism.

The NSR has a very diverse and **complex demographic pattern**, covering some of most sparse and densely populated areas in the EU. Despite this diversity, the regions in the NSR share many of the same pressing challenges with regard to general demographic trends, falling and ageing populations, migration to metropolitan areas, and rapidly rising immigration. For example, in Aberdeenshire, it is projected that there will be almost more people over 75 than in the age group between 65-75 in 2028⁴². The changing population structure brings with it a shift in demands, which impacts the vitality and sustainability of communities. One challenge will be to continue to support and enhance the strengths of urban and rural areas and their mutual links on the macro regional level. Economic growth and attractiveness of the region's communities need to be promoted to sustain liveability.

In the NSR, as one of the most developed regions, the **lack of qualified employees** is even larger than in less developed regions. In the NSR, this development has great consequences, especially for the maritime workforce. The maritime workforce is ageing and an insufficient number of young people are motivated and educated to replace those who leave. The barriers for the NSR workforce concern accreditation of national degrees and securing transferable skills, but also lack of capitalising knowledge and supporting entrepreneurship and self-employment.

⁴⁰ Trends in Economic Performance of European Regions 2000-2006. MAP 2. September 2010.

⁴¹ Europe, the world's No. 1 tourist destination - a new political framework for tourism in Europe (Communication from the Commission to the European Parliament the Council, The European Economic and Social Committee and the Committee of the Regions - COM (2010) 353 final. 20.06.2010.

⁴² Aberdeen City and Shire. Strategic Forecast 2006-2031. Strategic Forecast 2006-2031. September 2007.

The challenge of the shrinking workforce and the requirement of a huge number of high qualified employees can only be managed by a close cooperation and an intense coordination between the different regions of the NSR.

Priority focus:

- **Competitiveness of sectors and enterprises.** In order to increase competitiveness in the NSR, collaborative working, innovation and education/skills development should be promoted in potential growth sectors. Energy, marine, transport and logistics, tourism (and experience economy), food and drink etc. as well as traditional sectors (agriculture and fish etc), could be targeted. A high rate of innovation will be necessary to stay competitive in the global economy. Sectors such as maritime and culture and tourism can become growth sectors/clusters when strategically targeted and developed:
 - The **maritime cluster** around the North Sea is ranked at the very top in the global competition. With shipping and maritime products and service as the base, high quality suppliers of technology, maintenance and service for the offshore industry represent important innovation and engineering skills in the North Sea that have been able to establish themselves on a global offshore market. Previous experiences of the North Sea as a working environment with oil and gas will help companies to establish themselves as important contributors to development of (renewable) energy utilities that have already started their ocean operations. Besides energy, the food and biomaterials sector continues to be an important business area. Aquaculture, marine biotechnology and cleantech are growth areas where new opportunities emerge as new knowledge and demand meet. The challenges in using the resources of the seas demand cooperation between the maritime business sector, the research institutes and the provision of education, training and infrastructure from the public sector.
 - The **culture and tourism** around the North Sea is an important sector which can contribute to the development of the region and offer different kinds of tourism: historical/cultural importance, ancestral tourism, regeneration, defence against water and business tourism. Development and promotion of the sector will require a better understanding of the culture and history in order to strengthen NSR identity and profile the region. The tourism market is changing with new countries of origin and different types of tourists (older and more individualistic). An increase in competitiveness will demand that the European and North Sea tourism industries offer sustainable and high-quality tourism. Tourism depends on the development of other sectors and it is therefore important that tourism concerns are integrated into the process when other sector policies and initiatives are developed. Joint development of the tourism and culture industry, with innovative products, services and common branding of the region, will be needed to compete in the global market.
- **Demography.** Key issues in the NSR with regard to demography are: ageing populations and migration, likely to increase by 2020, increasing rural urban division (migration to urban areas), changing demands for service for different groups (aging population, families, etc.). To manage the challenges, there will be a need to address issues relating to social integration and access to the labour market. In order to secure a stable workforce for the region, it will be necessary to better integrate all groups into the workforce (younger, older, women and immigrants). The key to maintaining an efficient and effective workforce of the highest quality is to educate, recruit and retain young practitioners while reinvesting in mature workforce. Lifelong learning processes, including e-learning methods, will have to be strengthened. The demographic patterns need to be addressed across policy areas and the NSR could gain by exchanging experience and developing common approaches in relation to addressing the fast urbanisation and declining rural areas, and overall ageing populations.
- **Development of skills and employability.** To develop the maritime sector and promote “blue growth”, the different fields of shipping and logistic, shipbuilding, renewable energies and maritime industries need to have access to high quality human resources. This challenge can only be managed by a close cooperation and intense coordination between the different regions of the NSR in the fields of: recruitment, education

and training, cross-border mobility, language acquisition, mutual recognition of professional qualifications, cooperation with the social partners, learning from examples of best practice. Based on the well-developed cross-border networks, mutual learning processes can be enhanced. Mobility of professionals in the NSR, between the EU member states and in and out of the EU has to be fostered and migration should be defined as an opportunity. Mobility in the labour force is important to make innovation possible, but in order to increase mobility it is necessary to take away barriers (bringing EU policy on this field into action).

List 4 Important measures under the priority Attractive and Sustainable Communities

- Promote the maritime cluster to continue to play an important role as a provider of jobs, growth and innovation.
- Focus on the development of (or further developing) clusters by linking existing networks in particular areas - maritime, tourism in energy, food, biomaterials, aqua culture, marine biotechnology and cleantech.
- Encourage the improvement and linking of business support agencies, cluster organisations, chambers of commerce and industry, using existing forums.
- Foster cooperation and knowledge exchange, smart specialisation strategies.
- Identify opportunities for culture and tourism (development of an action plan) for the region and provide a political framework for future cooperation.
- Development and/or extension of North Sea cultural tourism/heritage routes.
- Development of a forum for culture and tourism with the industry and other stakeholders.
- Encourage that considerations regarding tourism are included when developing other sector policies.
- Promote close cooperation of labour market institutions (European Qualifications Framework).
- Instruments for enterprises to engage in increasing the capacity and productivity of their workforces.
- Address cross border barriers and bottlenecks to people and business.
- Foster cooperation between key stakeholders of the labour market, education and research policies.
- Promote the mobility of workers, researchers and students through implementing the European Qualifications Framework.
- Address urban-rural divides, ageing population and immigration and the changing demands on services and spatial development.
- Improve cross-sector policy coordination to address demographic and migration challenges.
- Initiate mapping of skills and competences for the future (e.g., technological and environmental developments, lingual skills, mobility) and take forward corresponding recruitment and retention strategies have to be developed.
- Development of Career Path Mapping of maritime careers with mobility between phases on sea and onshore.
- Raise awareness of the large range of careers in the maritime sector in schools to motivate more young people to start an apprenticeship in this sector.

Box 4 Examples of actions and cooperation projects in relation to Attractive and Sustainable Communities

- **Developing the North Sea Offshore Wind Power Cluster.** The POWER cluster is centred on the development of a strong Offshore Wind Industry (OWI) cluster in the NSR. Core activities include a strengthened stakeholder and business-to-business network, energy grid reinforcement across the NSR, developed skills training courses (including higher education and addressing unemployment) and raising acceptance among the wider public as a basis for wider roll-out of wind energy installations⁴³.
- **Cruise Gateway** seeks to develop the recognition and attractiveness of the NSR by highlighting the cultural richness as well as sustainable, economic development. The NSR has a unique chance to set the course for success while at the same time taking into consideration aspects of sustainability right from the start. Cruise Gateway focuses on: Building a concept of the NSR as an attractive cruise destination by developing and launching the brand Green Cruise North Sea; Generate innovative marketing activities to promote the NSR as an attractive cruise destination⁴⁴.
- **Sustainable Urban Fringes (SURF)** focuses on the urban fringe (social/economic/environmental) and developing instruments in which to manage a sustainable urban fringe (UF). In most cases, the UFs act as the hinterland of the urban centres, have complex shapes with a scattered landscape, are administratively fragmented and do not have a distinct identity. Overall, UFs are the areas under pressure facing unsustainable growth and expansion. The partnership brings together various partners across the NSR and city region⁴⁵.
- **Northern Maritime University (NMU)** builds on knowledge and expertise in the North Sea area within a transnational network of universities. The NMU address the needs of the maritime industry: To prepare maritime business managers to cope with growing maritime traffic, port development, and rising environmental challenges, by developing multidisciplinary and internationally oriented qualifications at Bachelors and Masters level. NMU is establishing an Area of Research and Innovation, contributing to Lisbon creating an effective sector and enhanced competitiveness⁴⁶.

⁴³ Interreg IVB NSR: www.power-cluster.net

⁴⁴ Interreg IVB NSR: www.cruisegateway.eu

⁴⁵ Interreg IVB NSR: www.sustainablefringes.eu

⁴⁶ Interreg IVB NSR: www.nm-uni.eu/

5.5 Promoting Innovation, Sustainable Development and Excellence - a horizontal priority

The fifth **horizontal priority**, promoting innovation Sustainable Development and excellence throughout all sector and policy areas is key to the strategic objectives of this strategy. At the heart of the NSR 2020 is the wish to promote and encourage excellence aiming at a better and more intelligent connection for mobility, trade and energy with focus on environment and risk management action. This entails that innovation Sustainable Development and excellence run as common themes through all strategic priorities and action areas, whether the sectors concerned are economic, environmental, social or governance. Under each of the preceding priorities, areas have been mentioned where particular innovation and sustainable development should be promoted. No specific measures/actions are listed under this priority as these are mentioned under each priority area. This priority describes the framework for developing innovation and illustrates with existing example where innovation has been in the centre.

The progression towards a **knowledge based society** and a strong research base have enabled excellence in sectors such as ICT, renewable energies, marine technologies and creative industries. The future challenges in this context will be to capitalise on the region's excellence and to promote and maintain innovation in existing and upcoming sectors. This means stimulating exchange of knowledge and experience between regions, developing innovative clusters (of knowledge and excellence). A focus should be on co-innovation⁴⁷ where innovation across regions at a transnational level is supported and promoted.

The promotion of **innovative solutions** concerns the business sector as well as the public sector. Basically, innovation concerns all aspects of business development: Product, process, market and organization. The overall understanding that the NSR countries can only compete on the global market by focussing innovation in both private as well as public sectors must be enhanced. Methods and new ways of organizing co-operation between clusters and other development projects should be developed. There is a need to further investigate the requirements for improvement of skills of partners co-operating based on Triple Helix principles. It concerns the understanding of each other's (different) roles, whether representing the business community, a university or other knowledge based institutions and regional authorities. Promotion of innovation should be supported by developing common understanding of joint monitoring and evaluation principles and the understanding of different success criteria and time perspective by the partners concerned.

The regional authorities have a special obligation to create an **innovative environment** for business development. It concerns making framework programmes for different projects available, including EU funding. In particular, emphasis should be put on inter alia the universities' cooperation with the private sector in order to reduce the time required to make research results available and useful for the business sector.

Furthermore, innovation should be enhanced in relation to entrepreneurship at all levels of the educational system – supporting the “Youth on the move” flagship in EU 2020. The NSR countries could assist each other in promoting best practices in different countries/regions in integrating entrepreneurship at all levels. Understanding and practising innovative methods should be improved in young, small private companies (growth entrepreneurs) that intend to develop according to growth strategies. This can be done by developing joint support programmes based on best practice in the NSR countries.

When planning for innovation and growth in the NSR 2020, **sustainable development** must be emphasised. In looking forwards 2020, a main focus will be on sustainable economic growth. Sustainable development is about meeting the needs of people today without compromising the needs of future generations. For the NSR 2020 this will involve using innovative solutions to deliver a low carbon economy, improved quality of life for all and an enhanced and protected environment as described under the different priorities.

⁴⁷ The Pull of the True North. Professor dr. Frank M. Go. North Sea Commission Conference, Middelburg, 10th March 2011.

Box 5 Examples of actions and cooperation in relation to Promoting Innovation, Sustainable Development and Excellence

- An example of regional cooperation based on Tripe Helix principles is the **Brains Business partnership** ICT North Denmark, which is a private/public partnership within ICT. The purpose of the collaboration is to support and develop the North Denmark ICT cluster. The aim is to 1) facilitate innovation, growth and jobs by working across institutional borders, 2) generate knowledge sharing and dissemination—both among companies and between research and knowledge institutions and companies, and 3) make the various ICT competences of the region even more visible⁴⁸.
- **North Sea Screen Partnership** (NSSP) seeks to tap the potential of the creative industries (e.g., the film industry) to promote innovation and growth in the NSR and increase the region's competitiveness in a global context. Transnational cooperation is concentrated on common challenges, such as marketing, financing and SME (small and medium enterprises) support. The project aims to tackle issues such as fragmented national markets inhibiting critical mass creation (developing economies of scale), lack of coherence and coordination of actors and actions across the NSR, and loss of talents in more peripheral areas⁴⁹.
- **Smart Cities** aims to create an innovation network between governments and academia in six countries to promote excellence in the domain of e-services (development and take-up) in order to set a new standard for e-service delivery in the whole NSR. The transnational working method (pooling expertise and joint model development) is proposed to equip decision-makers to achieve further innovation in the delivery of e-enabled public services⁵⁰.
- **Women in Business** aims to strengthen the competitive conditions for the Kattegat/Skagerrak region through innovation, development and viable growth in SMEs led by women. New knowledge of the factors that influence expansion and development for female entrepreneurs, and create and implement new methodology and practices for the regional authority that addresses business development will be developed. A joint network within a Triple Helix framework between regional authorities, female entrepreneurs and scientists, knowledge and expertise will be achieved in addition to an increase in the number of SMEs⁵¹.

⁴⁸ www.briansbusiness.dk

⁴⁹ Interreg IVB NSR: www.northseascreen.eu

⁵⁰ Interreg IVB NSR: www.smartcities.info

⁵¹ Interreg IVA KASK: www.womeninbusiness.no

6 Implementation, cooperation and coordination

Implementation

In order to implement the strategy, it will be necessary to develop an **action plan** with specific actions and identification of funding needs, sources and bodies responsible for the implementation. In connection with developing the action plan, a thorough analysis of the challenges and opportunities in each priority area including an update of the statistical data⁵² for the NSR should be carried out. The action plan should also address the issue of the priorities and their ranking, some of the issues may be more pertinent than others. A timeline and implementation outline should follow this. The plan should be a rolling plan where actions are replaced as they are completed. The action plan should include actions/projects which demonstrate direct and visible benefits for the people in the region, or have an impact on the macro-region (or a significant part of it). Actions should in general promote sustainable development and cover several regions and countries, be coherent and mutually supportive, creating a win-win solution; and be realistic (technically feasible and with credible funding).

In order to be able to **monitor the implementation** of the action plan, a number of **overall targets** will have to be developed in consultation with stakeholders and in connection with the development of a detailed action plan. Targets could come from: EU Directive on renewable energy, EU 2020, Lisbon Strategy, energy and climate targets, national climate plans, and national renewable energy action plans CFP, MFSD, Natura 2000, ICZM, Habitat and birds directive, transport, tourism policies and more.

The strategy is based on the principle that no new EU funds, no new EU legislation, and no new EU structures are needed, but that the strategy itself might attract international, national, regional or private funds, although better use of existing funds is emphasised. The implementation is through existing bodies, whose complementarities must be maximised.

Cooperation

There is a need to develop the existing cooperation efforts, ideas and needs in the NSR. While many regional cooperation projects are individually excellent, they tend to arise in isolation rather than as important parts of a wider regional plan. The Baltic Sea Region experience demonstrates that a strategic approach and the actions of the priority can offer a framework for bringing together fragmented actions across levels of government and sectors. To address these issues and implement the strategy, it is necessary to improve regional co-operation in NSR and the regional role in multi-level governance framework. Governance mechanisms should satisfy the concerns for cross-sectoral coordination (in particular with regards to the challenges related to managing maritime space) and multi-level governance, also allowing for bottom-up involvement.

Transnational cooperation is currently addressed in the region by cooperation bodies such as the North Sea Commission addressing a broad range of issues. Other relevant bodies include Local Authorities International Environmental Organisation (Kommunenenes Internasjonale Miljøorganisasjon, KIMO), the North Sea Regional Advisory Council (NSRAC) and the OSPAR⁵³ Commission. North Sea Motorways of the Sea Task Force consisting of all member states, Norway and stakeholders related to ports and shipping⁵⁴ addresses specific issues. The Interreg IVB North Sea Region Programme is also an important actor in this respect and a future programme (2014-2020) is regarded as an important source of funding for the actions defined on the basis of NSR 2020.

Development of frameworks for cooperation such as the “North Sea Maritime Stakeholder Forum” is regarded as an example of a governance mechanism in this respect. Such forums can promote discourse, consultations with

⁵² The current data available, especially at regional level is from 2006/2005 or earlier. This does provide a sufficient basis for planning actions in 2011.

⁵³ Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) has been signed by Belgium, Denmark, the European Community, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland and by Luxembourg and Switzerland.

⁵⁴ The aim of the Task Force is to draw up a framework for the implementation of the Motorways of the Sea concept in the North Sea Region, and to prepare calls for proposals under TEN-T.

and engagement of relevant stakeholder at all levels in the North Sea. Thematic forums would aim to address areas of concern or conflict; agree a position on cross-sectoral issues, and; communicate this position when appropriate to decision makers, or indeed those decision makers could ask the forum to discuss and offer a view on specific issues. The North Sea is an ideal area for piloting informal integrated forums. Membership of the informal forums would include representation of the below from all North Sea countries: Observer status would be offered to National Administrations, the European Commission, the EU Parliament, and third countries like Norway.

Coordination

To reinforce the integration of the NSR, the NSR 2020 aims to strengthen policies and legislation implementation in the area. It aims at providing political support to current initiatives and raising their visibility. Introduction of priority coordinators to strengthen links between policies and a wide range of stakeholders as in the BSR and Danube strategies will be considered also for the NSR.

Box 6 Important policies, strategies and organisations to ensure coordination with

- **Europe 2020** is the key EU commitment to jobs and smart, sustainable, inclusive growth, which the strategy will support the implementation of. It has five headline targets: promoting employment; improving the conditions for innovation, research and development; meeting climate change and energy objectives; improving education levels; and promoting social inclusion in particular through the reduction of poverty, and addressing the challenges of ageing.
- Coordination with **National Strategic Reference Programmes** existing in all of the EU members states.
- **Consistency with EU legislation** and policies is at the core of the NSR 2020 such as:
 - Strategy for the Single Market (Single Market Act) and the Digital Agenda;
 - TENT (currently under revision), White Paper on Transport, energy (TEN-E) networks;
 - The EU post-2010 biodiversity target and strategy, with its 2050 vision and a 2020 target, is also reinforced; Water Framework Directive;
 - Marine Strategy Framework Directive; Common Fisheries Policy;
 - Energy policy: Renewable Energy Directive; Communication on Offshore Wind Energy; CCS.
- **Other international cooperation** such as OSPAR, IMO, et al.

7 Conclusions and the way ahead for the NSR 2020

This draft strategy intends to provide a framework for policy integration and coherent development of the NSR. The strategy sets out to promote the performance in selected target areas and to tackle priorities for the development of the NSR. It aims to remove internal market bottlenecks and improve the business environment. It sets out priority actions in order to achieve EU 2020 objectives and each of the priorities supports several of the EU 2020 flagships as illustrated in Table 3.

Table 3 Contribution of NSR 2020 to EU 2020 flagships

Priorities of NSR 2020	1 managing maritime space	2 Increase accessibility and clean transport ²	3 Tackling climate Change	4 Attractive and Sustainable Communities	5 Promoting Innovation and Excellence
EU 2020 Flagships					
Innovation Union	✓	✓	✓	✓	✓
Youth on the Move				✓	✓
A digital agenda for Europe		✓			✓
Resource efficient Europe	✓	✓	✓	✓	✓
An industrial policy of the globalisation era	✓	✓	✓	✓	✓
An agenda for new skills and jobs			✓	✓	✓
European Platform against poverty				✓	✓

This draft document will be presented to the NSC General Assembly on June 21, 2011. NSC members will be able to provide comments to the document before a final version is completed in the autumn of 2011 with a view to including this in the agenda of the Danish Presidency of the EU (1st half of 2012).