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**The inventory of activities in the framework of developing a European Union Arctic
Policy**

Accompanying the document

**JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE
COUNCIL**

**Developing a European Union Policy towards the Arctic Region: progress since 2008
and next steps**

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INTRODUCTION

This staff working document accompanies the Joint Communication to the European Parliament and the Council on Developing a European Union Policy towards the Arctic Region: progress since 2008 and next steps. The purpose of the staff document is to give detailed information about the progress outlined since the Communication of 20 November 2008 on ‘The European Union and the Arctic Region’¹. It covers activities undertaken by the Commission services, the relevant European agencies and the European External Action Service (EEAS) on the proposals set out in the 2008 Communication as addressed under the guidance of the 2009 Council Conclusions² and the 2011 European Parliament Resolution³, in consultation with the EU Member States and in dialogue with the other Arctic states and other Arctic stakeholders.

THE INVENTORY OF ACTIVITIES IN THE FRAMEWORK OF DEVELOPING AN EU ARCTIC POLICY

1. PROTECTING AND PRESERVING THE ARCTIC IN UNISON WITH ITS POPULATION

As part of its engagement for sustainable development in the Arctic, the EU takes into account the potential impact of its policies and initiatives on the environment and the population of the region, as it strives to minimize negative effects and maximize its positive involvement and actions.

1.1 *Climate change and environment*

The 2008 Communication suggested promoting high environmental standards and strengthening efforts to mitigate climate change; working on disaster prevention, preparedness and response; and promoting an eco-system approach to marine and environmental management.

The impact of climate change on the Arctic environment is of major concern as it affects not only society and key economic sectors of the European Union but the climate system of the planet as a whole.

Global action addressing these climate change impacts on the Arctic urgently requires reduction of greenhouse gas (GHG) emissions at global scale by all major emitters. Forging a legally-binding global regime to reduce greenhouse gas emissions is at therefore the core of the EUs international strategy. The Cancun agreement - (16th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2010) achieved the global agreement that global warming must be kept less than two degrees Celsius above the pre-industrial temperature. In December 2011 the EU helped to forge at UNFCCC COP 17 the

¹ COM(2008)763 of 20.11.2008.

² Council Conclusions on Arctic Issues, 2985th Foreign Affairs Council Meeting, Brussels, 8 December 2009.

³ P7_TA(2011)0024.

Durban Platform for Enhanced Action: a negotiating roadmap for a new comprehensive legal instrument to be agreed by 2015, which will be implemented as of 2020. Domestically the EU is taking already ambitious action and planning its next steps to fight climate change. It is on track to meet its Kyoto target, has incorporated its 20% GHG reduction commitment into law and is committed to the long-term target of 80-95% reduction of its emissions by 2050. The Commission finalised "A Roadmap for moving to a competitive low carbon economy in 2050"⁴ to that end.

Consequently Arctic research was among the key priorities of the Sixth and Seventh Framework Programme (FP6, FP7) of the EU. EU research is implemented via a number of projects that analyse the Arctic environment and the impact of climate change. All of these projects analyse the state and processes of the natural environment, whilst some go beyond and assess the socio-economic impacts of changes in the Arctic natural environment on Arctic populations and Europe. The research projects with an Arctic dimension financially supported by the EU are described more fully in section 1.3 and listed in Annex 1. The EU contribution to these projects has amounted to about €20 million per year.

Recent work undertaken by the European Commission's Joint Research Centre in cooperation with UN Environment Programme (UNEP) and the World Meteorological Organisation (WMO), has led to identification of emission reduction measures of short-lived pollutant species (particularly black carbon) that could mitigate near-term climate change and reduce snow and ice melting in the Arctic.⁵ The European Commission joined in April 2012 the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants. This initiative should complement the necessary UN efforts to reduce global greenhouse gas emissions.

The European Environment Agency (EEA) published its report "European environment – state and outlook 2010"⁶ in November 2010. The report addresses a number of Arctic issues, including climate change in the Arctic under the theme "understanding climate change".

The Commission systematically assesses and takes account of environmental and other impacts in developing and implementing its policies, projects, plans and programmes. It has deepened its understanding of the EU's footprint on the Arctic region through dialogues with Arctic stakeholders, participation in the Arctic Council working groups, and research to identify and measure those impacts. The first attempt to identify the EU's environmental footprint on the Arctic region, to analyse how this might develop up to 2030, and to identify policy options was completed through the "Arctic Footprint and Policy Assessment" project funded by the EU. The report published in January 2011 gives an overview of the EU impact up to 2030 in nine areas relevant to the Arctic, including biodiversity, transport, energy,

⁴ COM(2011) 112 final, 8 March 2011.

⁵ UNEP and WMO (2011): Integrated Assessment of Black Carbon and Tropospheric Ozone; http://www.unep.org/dewa/Portals/67/pdf/BlackCarbon_report.pdf. Furthermore a research article based on this same work was recently published in the Science Journal: Shindell et al. (2012): Simultaneously mitigating near-term climate change and improving human health and food security. Science, 335 (6065) pp. 183-189. <http://www.sciencemag.org/content/335/6065/183.abstract>

⁶ <http://www.eea.europa.eu/soer>

exploitation of resources and climate change⁷. The impact takes into account the source of pollutants reaching the Arctic and the destination of resources such as fish or minerals that are taken from the Arctic. It then identifies policy options. The findings of the study are being taken into account by the Commission in reviewing relevant policies. A three-year EU project to provide initial funding (€300,000) for the establishment of an NGO dialogue on Arctic environmental issues was launched in July 2011. An NGO forum convened for the first time in January 2012, with the aim of meeting twice a year. The Commission has intensified dialogue with Arctic stakeholders on environmental policy in the framework of the UN regular process on global reporting and assessment of the state of the marine environment, which recently became operational. The EU has continued its efforts at international level to promote the use of impact assessments, in particular through compliance with the Espoo Convention on environmental impact assessment in a transboundary context and its protocol on strategic environmental assessment. More specifically, it has collaborated closely on these issues with the Russian Federation which in July 2011 launched internal procedures to ratify the Espoo Convention.

The EU has continued to play a prominent part in international efforts to reduce pollution from Persistent Organic Pollutants through the Stockholm Convention and the Protocol of the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution (UNECE LRTAP). The EU is committed to establishing a comprehensive global legally binding instrument to cover the whole life-cycle of mercury use through the current negotiations under the auspices of UNEP. The EU is launching a €7 million project on improving capacities to eliminate obsolete pesticides as a model for tackling stockpiles of hazardous chemicals in the former Soviet Union (2012-15). In addition the EEA has hosted and contributed to two international initiatives on climate change and short lived climate forcers, namely the UNECE LRTAP⁸ expert group and the Arctic Council task-force on short lived climate forcers. It has also contributed to the understanding of tipping points in the Arctic environment.

The Commission, EEA and European Maritime Safety Agency (EMSA) have contributed to the ongoing work in the Arctic Council working groups and to the specific initiative of conducting an Arctic Ocean Review as well as the scoping workshop on the Swedish Arctic Council Chairmanship initiative on an Arctic resilience report.

The Commission continues efforts to ensure effective protection of whales especially within the framework of the International Whaling Commission (IWC), including in the Arctic context. Since 2008 the progress in IWC as regards decision towards improved conservation and management of whales has been rather limited. The OSPAR Convention is working on a comprehensive overview of underwater acoustic impact from relevant activities. In October 2008, the IMO Marine Environmental Protection Committee established a high priority programme on minimising the introduction of incidental noise from commercial shipping operations in the marine environment. A Resolution, proposed by the Commission, on "Adverse

⁷ <http://arctic-footprint.eu/>

⁸ United Nations Economic Commission for Europe, Convention on Long-Range Transboundary Air Pollution

anthropogenic ocean/marine noise impacts on cetaceans and other biota" was adopted under the Convention on Migratory Species (Bonn Convention) on 9 December 2008. This calls for comprehensive action (including mitigation measures, exchange of data and stakeholder consultation) to control the impact of man-made pollution in the habitats where vulnerable species and marine mammals may be concentrated.

Northern Dimension Environmental Partnership (NDEP)

The NDEP supports several projects in the Arctic with grants from its Support Fund, for both its environmental and nuclear windows. The EU is the largest single contributor to the NDEP Support Fund. In November 2010, the Commission signed an agreement with the European Bank for Reconstruction and Development (EBRD), the NDEP Fund manager, to replenish the Fund's environmental window with €14 million.

In the environmental window, work continued on the Archangelsk Municipal Water and Wastewater Services project (€8.2 million grant). The estimated completion year is 2012. The project will reduce direct discharges of wastewater in the region and improve energy efficiency and ensure compliance with Russia's and the EU's environmental standards. A grant (€6 million) was also approved in December 2010 by the Assembly of Contributors, chaired by the Commission, for the Murmansk water and wastewater infrastructure rehabilitation project, which will substantially decrease water pollution into the Kola Bay and in the Russian part of the Barents Sea.

In the nuclear window, implementation of the eight grants signed between 2005 and 2008 continued. Four further grant allocations were approved by the Assembly of Contributors in December 2010, and are now being implemented. All of the projects in this window deal with issues arising in the Barents and Arctic region due to the nuclear legacy of the Soviet Northern Fleet. Two of the allocations relate to the decommissioning of the "Lepse" ship currently moored in Atomflot, Murmansk, extending a previous grant agreement for €10 million to carry out additional tasks and allocating a new grant of €1.5 million for technical support to the Russian authorities. The third project concerns a system for handling and transporting spent nuclear fuel at Andreeva Bay, Kola Peninsula (extending a previous grant by €35 million). The fourth project supports the construction of a cask storage facility for highly enriched spent fuels from Alfa-class submarines enabling the removal of these fuels from their location in Gremikha on the Kola Peninsula (€1.8 million).

Civil protection

The PRETEAR project⁹ (Preparation for Threats to Environments in Arctic Regions, 2009-11) aimed to identify the probability of accidents to the fragile coastal ecosystem in the northern regions due to activities on exploration, production and transportation of oil and gas and the subsequent increased maritime transport. The study identified gaps in training needs on prevention, preparedness and disaster

⁹ Outcomes of PRETEAR project:
http://www.pretear.no/index.php?option=com_content&view=article&id=10&Itemid=24&lang=en

response. It focused on cross-border issues and improving the effectiveness of emergency response. The €10 000 project is co-financed under the EU Financial instrument for civil protection under the prevention and preparedness with €460 000.

The agreement on emergency prevention and response in the Barents region, negotiated in the framework of the Barents Euro-Arctic Council (BEAC), was signed by the relevant states in 2009 and subsequently ratified. It entered into force on 17 May 2012.

1.2 Support to indigenous peoples and local population

The 2008 Communication proposed engaging the Arctic indigenous peoples in regular dialogue, providing opportunities to protect their lifestyles while taking account of EU concerns over whale and seal hunting.

Indigenous issues are an integral part of the EU's human rights policy. The EU engagement towards indigenous peoples takes place in the context of the United Nations Declaration on the Rights of Indigenous Peoples of 2007, the adoption of which was supported by the EU¹⁰. The EU seeks to integrate human rights, including indigenous issues, into all aspects of its external policies, including its political dialogues with third countries and regional organisations, and multilateral fora such as the United Nations, and by providing financial support. Indigenous issues are consistently mainstreamed in EU development cooperation strategies. In addition, the Commission gives direct support to civil society organisations working on indigenous issues, in particular through the European Instrument for Democracy and Human Rights (EIDHR); the latest contribution concerning Arctic/sub-Arctic indigenous peoples is EIDHR/2009/227865 - Capacity building, to pursue traditional livelihoods in the Russian Federation with €120 000.

The EU provides a significant amount of funding through various initiatives to indigenous groups and local populations:

- The 2007-2013 European Regional Development Fund (ERDF) under the European Territorial Cooperation objective (ETC) sets aside €4.3 million to “Sápmi - borderless development”, a subprogramme to the cross-border Interreg IVA North programme. It supports the Sami population in Sweden, Finland, Norway and to some extent in Russia in developing its cultural life and industry in a sustainable manner.
- The North programme¹¹ as a whole, (with EU funding €34 million out of €57 million) has the objective of strengthening the attractiveness and competitiveness of the northernmost regions of Finland, Sweden and Norway for the benefit of the local people. Similar objectives govern the programmes Botnia-Atlantica¹² in Finland, Sweden and Norway (EU funding €34.4 million out of €60.9 million)

¹⁰ The EU has welcomed the Canadian endorsement in November 2007 of this UN Declaration.

¹¹ <http://www.interregnord.com/en/projects.aspx>

¹² <http://www.botnia-atlantica.eu>

and Interreg IVA Sweden-Norway¹³ (EU funding of €37 million out of €68 million).

- In the 2007-2013 period ERDF invests € 243 million in the North Sweden programme and €177 million in the Mid-North Sweden programme to increase the competitiveness of the regions.¹⁴ Sami issues are integrated into the different priority areas;
- The Northern Finland ERDF Programme¹⁵ is operating with an overall budget of €1.1 billion, of which €311.3 million comes from the EU budget. The priorities of the programme include measures specifically designed for the Sami, supporting entrepreneurship and business based on the Sami culture;
- The Northern Periphery Programme¹⁶ involving Ireland, Finland, Sweden and the United Kingdom as well as the Faroe Islands, Greenland, Iceland and Norway, with possible participation of the Russian Federation and Canada, has a budget of €9 billion, of which EU funding amounts to €3.5 billion. The Programme aims to help remote communities in northern Europe develop their economic, social and environmental potential.
- The Kolarctic programme¹⁷ is one of 13 cross-border cooperation programmes currently co-funded under the European Neighbourhood and Partnership Instrument (ENPI) and ERDF. The 2007-2013 budget of the programme amounts to €70.48 million, of which €28.24 million is EU funding. Northern regions of Finland, Sweden, Norway and the Russian Federation participate in the programme.
- In the sub-Arctic part of the Barents region, another cross-border cooperation programme – the Karelia programme¹⁸ - is operating with an overall budget of €46.5 million, of which €3.2 comes from the EU budget and the remaining part consists of contributions from Member States and the Russian Federation;
- The Baltic Sea Region Programme¹⁹ (joint ETC/ENPI EU funding €17 out of €78 million) finances the Bothnian Green Logistic Corridor, which aims at integration of northern Scandinavia and Barents, with the industrial chain and end markets in the Baltic Sea Region and central Europe.

The Commission has entered into a regular dialogue with the indigenous communities of the Arctic Region. On 9 March 2010 the Commission hosted the 'Arctic Dialogue' workshop²⁰ that gathered representatives of indigenous stakeholders from the Arctic. The goal of the workshop was to establish a

¹³ <http://www.interreg-sverige-norge.com/>

¹⁴ <http://www.tillvaxtverket.se/huvudmeny/euprogram/programomraden/ovrenorrland> and <http://www.tillvaxtverket.se/huvudmeny/euprogram/programomraden/mellerstanorrland>

¹⁵ http://ec.europa.eu/regional_policy/atlas2007/finland/fi1a_en.htm?4

¹⁶ <http://www.northernperiphery.eu/en/projects/main/>

¹⁷ <http://www.kolarcticenpi.info/ourprojects>

¹⁸ <http://www.kareliaenpi.eu/en>

¹⁹ http://eu.baltic.net/Project_Database.5308.html?&&contentid=70&contentaction=single

²⁰ <https://webgate.ec.europa.eu/maritimeforum/content/1831>

constructive dialogue on areas and means of cooperation with Arctic indigenous peoples from the entire circumpolar area, while guaranteeing full transparency vis-à-vis the Arctic governments. The initiative was well received by the participants. The speakers underlined the importance of involving indigenous peoples' representatives effectively in all decision-making processes that affect them. Several associations present expressed their disappointment with the approach taken by the EU on the regulation on trade in seal products²¹. The Commission met again with representatives of the Arctic indigenous peoples in Tromsø, Norway, in January 2011 to follow up the dialogue and exchange information on funding opportunities, views and concerns.

The Commission also took part in various events organised by the indigenous peoples' organisations. In April 2010 the Commission participated in the Arctic Leaders' Summit in Moscow which brought together high-level indigenous representatives. In the Moscow Declaration, the Arctic indigenous leaders state that they "acknowledge and will continue to participate in the ongoing dialogue between Arctic Indigenous Peoples and the EU". Further meetings with the representatives of the Arctic Council Indigenous Peoples Secretariat and some Arctic indigenous peoples took place in Brussels in November 2011 and in Tromsø in January 2012.

In 2009 the EEA held informal discussions with Arctic indigenous peoples' groups to identify possible areas of using traditional knowledge in future EEA environmental reports and products. As a concrete follow-up, the EEA initiated a study into how decision-makers use or could use local and traditional knowledge when assessing the state of the environment and implementing decisions, which will be part of a larger study into using lay, local and traditional knowledge in general. In June 2011 the EEA hosted the first of a series of seminars, including participation of Arctic indigenous peoples, with the aim to explore further the use of traditional knowledge in the Arctic.

On the issue of sealing, there was widespread public consultation²², including with indigenous peoples, prior to the adoption of EU Regulation 1007/2009 on trade in seal products. The legislation grants an exemption for seal products from hunts traditionally conducted by Inuit and other indigenous communities and contribute to their subsistence. Challenges to the legislation have been made by the members of Inuit community. One application was rejected in September 2011 by the Court of Justice of the EU on the grounds of inadmissibility²³; a second case is pending. A World Trade Organisation panel has also been constituted to review the ban at the request of Canada and Norway. As required by the legislation, the Commission will report on the implementation of the legislation on trade in seal products before the end of 2012.

Health and social well-being of indigenous people are a part of the Northern Dimension Partnership in Public Health and Social Well-being (NDPHS) agenda. The Declaration concerning the establishment of the NDPHS (the Oslo Declaration²⁴ from 2003) calls upon the Partners to take into account cross-cutting themes,

²¹ COM(2008) 469, 23.7.2008.

²² http://ec.europa.eu/environment/biodiversity/animal_welfare/seals/seal_hunting.htm

²³ Order of the General Court, 6 September 2011, Case T-18/10.

²⁴ http://www.ndphs.org/internalfiles/File/About_NDPHS/Oslo_Declaration.pdf

including indigenous peoples. Further, Goal 11 in the NDPHS Strategy²⁵ calls for improvement of public health and social well-being among indigenous peoples in the Northern Dimension area. To that end, a work plan focused on improving mental health, preventing addictions, and promoting child development and family/community health among indigenous peoples has been established. Efforts to develop a joint project for the Task Group are ongoing, and the recent re-engagement of partners to advance this work is encouraging. The NDPHS Task Group on Indigenous Mental Health, Addiction and Parenting (IMHAP TG) was established in June 2010. Its work plan covers the following key activities:

- Best Practices for Indigenous people parenting and associated counselling skills;
- Development of common indicators for Indigenous mental health services;
- Telemedicine: how it can benefit and enhance mental health services;
- Producing fact sheets and diagnostic of mental health status (Sámi, Inuit, First Nations, others) with a focus on these priority areas.

The Task Group will invite the Arctic Council to IMHAP meetings in order to coordinate activities and avoid duplication.

The Commission is also supporting knowledge to protect the Arctic indigenous peoples' lifestyle through a number of research projects funded under the Seventh Framework Programme described in section 1.3.

1.3 Research, monitoring and assessments

The 2008 Communication proposed that research programmes should address the state and evolution of the Arctic environment, enhance monitoring and surveillance capabilities and develop technologies that can be deployed under Arctic conditions.

An ensemble of research projects supported by the Commission through FP6 and FP7²⁶, are listed under Annex I. They provide a good overview of EU priorities for Arctic research. The EU and its Member States have made a leading contribution to Arctic research over the last 10 years. Around €200 million of EU funds has been allocated to Arctic research. The EU promotes research aimed at furthering the understanding of natural processes affecting the Arctic, including climate change and its impact on local populations and economic activity. It also supports strengthening research networks and infrastructures, and has therefore contributed to international research efforts such as the Intergovernmental Panel on Climate Change Assessment Reports and the International Polar Year 2007-2009.

Most research projects on Arctic issues launched by the Commission in the last two years are multi- and interdisciplinary in nature combining different disciplines within the natural and environmental sciences; others go beyond and combine elements from the natural and environmental sciences with health, socio-economics and public policy considerations.

Climate change

²⁵ Strategy adopted by the Annual Conference, Oslo, 25 November 2009:
http://www.ndphs.org//documents/1911/NDPHS_Strategy.pdf

²⁶ FP6 and F7 projects information: http://ec.europa.eu/research/environment/index_en.cfm?pg=projects

At least nine running FP7 research projects have as their main aim to further our understanding of the Arctic environment and climate change by studying its atmosphere, cryosphere, hydrosphere and/or ecosystems, and analysing their interplay with climate change. They build on previous successful projects i.a. **DAMOCLES**, **SEARCH** for **DAMOCLES** and **HERMES**.

For instance, the **RECONCILE** project (€3.5 million) studies the atmosphere in the Arctic in order to better quantify the effects of climate change on stratospheric ozone depletion. Specifically, this project contributed to the recent discovery of the depletion of the ozone layer over the Arctic. Another project, **PAGE21** (€ 6.9 million) is studying Arctic permafrost and its interplay with climate change, and will shed light on the feedbacks between permafrost melting, atmospheric processes and climate change. The **ice2sea** project (€ 10 million) meanwhile is addressing the single most important source of uncertainty in projections of future sea-level rise by advancing the understanding of melting continental ice-sheets and glaciers in the polar regions. A different project, **THOR** (€9.3million), is exploring the effects of the melting of the Greenland ice sheet on the global ocean circulation patterns. By the end of the project a reliable system to forecast changes in the circulation patterns due to melting ice-sheets will be in place, and estimates of the probability of extreme climate events in the European and North Atlantic region will be produced. Finally, the **HYPOX** project (€3.5 million) is enhancing monitoring of oxygen depletion due to global warming and eutrophication in various water bodies, including the Arctic Ocean.

HERMIONE (€8 million), **ATP** (€5 million) and **EUROBASIN** (€7 million) study how climate and global change will affect marine ecosystems in the Arctic. Since its launch, **HERMIONE** has established itself as a main provider of deep-sea marine ecosystem knowledge in Europe. **ATP** and **EUROBASIN** go one step beyond the understanding of ecosystems, and investigate the implications of changes in marine ecosystems for socio-economic activities. More specifically, **ATP** will identify potential tipping points due to climate change which may have severe consequences for fishing in the region; and **EUROBASIN** takes account of the effects of human activities as well as natural change on marine ecosystems.

Both **ATP** and **HERMIONE** were launched in early 2009 and the results of these projects and their impact are already available. **ATP** for instance was at the centre of the influential Arctic Frontiers Conference in January 2011. In contrast, **EUROBASIN** only started in 2011 and is thus in its early stages.

The **ACCESS** project (€11 million) under the “Ocean of tomorrow” part of the FP7 looks at climate change as an opportunity to develop economic activities such as transport, fisheries, oil and gas extraction in the Arctic region. It will take into account the effects of these activities on climate change and propose mitigation measures as well as options for more involvement of local populations in decision-making processes.

Contaminants and health

EU research projects on screening and monitoring of chemicals in the Arctic, launched in November 2008, include tasks that investigate climate induced changes in contaminant mobility, distribution and transfer in the Arctic, as well as and the

consequences of these changes for local populations and economic activities in the region.

ArcRisk (€3.5 million) and **CLEAR** (€2.4 million) investigate the links between climate change, environmental contaminants and the health of Arctic populations: **ArcRisk** focuses on the impacts of climatic changes on human health via long-range transport of contaminants and the food chain; **CLEAR** meanwhile addresses the links between climate change, environmental contaminants, and reproductive health. **CLEAR** bridges a critical gap in knowledge by monitoring early-life exposure to chemical pollutants and investigating its long-term effects on reproductive health

Infrastructure

The Commission has developed research infrastructures to help close gaps in long-term monitoring, coordination and data availability on natural and anthropogenic processes in the Arctic region. It has devoted substantial resources to create or develop appropriate observatory networks, and to facilitate access to research facilities in the Arctic to scientists from Europe and beyond. The European Strategy Forum for Research Infrastructures (ESFRI) has identified in its roadmap several new pan-European research infrastructures that are relevant to Arctic research: **SIOS**, **EMSO and ICOS**. The preparatory phase of these new infrastructures supported under FP7, aim at political, financial and strategic convergence among interested countries and setting up the legal and financial framework for subsequent implementation. **SIOS** (€4 million) will seek to establish the legal and managerial framework to build the necessary infrastructure to integrate all research facilities on the Norwegian Svalbard archipelago with a view to establishing a key knowledge hub on these islands. Meanwhile, EMSO's preparatory phase (€3.9 million) is furthering the development of the ESONET network (see below) towards a pan-European infrastructure. **ICOS** (€4.3 million) is a new research infrastructure to decipher the greenhouse gas balance of Europe and adjacent regions, including a number of stations in the Arctic.

Through the Framework Programmes, the Commission has contributed to Arctic research infrastructures by funding projects such as the following: **ARCFAC** (€1.8 million), which in the four years to 2010, has supported multidisciplinary research in the environmental sciences, terrestrial and marine biology, and geosciences by providing access to nearly 400 researchers from 19 different EU countries to use the research facilities of the European Centre for Arctic Environmental Research on Ny-Ålesund. **INTERACT** (€7 million), launched in January 2011, will build a circum-arctic network of terrestrial field bases to create more efficient networks to monitor changing environmental conditions in the region and simplify data storage and accessibility. In its short life it has already secured support from SAON, established a station managers' forum and elicited considerable interest from potential users. Further, **ESONET** (€7 million), a network of excellence launched in 2007, is implementing, operating and maintaining a network of ocean observatories in deep waters around Europe, including the Arctic. In addition, the **EUROSITES** project (€7 million) is helping to maintain and enhance two deep sea moorings, off Southern Greenland and off the Norwegian coast, where measurements of physical and geobiochemical properties of ocean waters are being taken. Ample data on the exchanges between the Arctic ocean on the one hand, and the North Atlantic Ocean and the Norwegian Sea on the other, has been gathered to date at these two sites. The

ERICON-AB preparatory phase project (€4.5 million) is addressing the strategic, legal, financial and organisational frameworks ahead of the construction and operation of the European Polar Research Icebreaker Aurora Borealis. Enhancing data storage and sharing systems is another EU objective in the Arctic served by FP7 funded projects. For instance, **THOR** will contribute to the European Earth Observation Programme GMES and other global observation systems, such as Global Earth Observing System of Systems (GEOSS). Similarly, **ACOBAR** (€3 million), **HYPOX** and **HERMIONE** will support the development of GEOSS databases. **INTERACT** will offer free access to Arctic field data; and **SIOS** and **RECONCILE** will contribute to open access to information from Arctic monitoring and research in accordance with the principle of the Shared Environmental Information System (SEIS).

Environmental technologies

Through FP7, the Commission is also funding the development of technologies to support research in the Arctic's unique environmental conditions. For instance, the **ACOBAR** project (€3 million) launched in November 2008 is developing a technology specifically to overcome the limitations set by sea ice cover on underwater measurements. This technology will make it possible to take measurements of ocean properties in ice-covered seas. The technology developed by this project will supply underwater real-time data of the Arctic via satellite. **ACOBAR** builds on other FP funded projects such as **DAMOCLES** and **ESONET**, and is currently carrying out key experiments in the high Arctic.

International research cooperation and capacity building

The EU has strong cooperation links on research with all non-EU Arctic states. Iceland and Norway are associated countries of the EU's FP6 and FP7 programmes for research and development. They have contributed financially to these programme and their rights as beneficiaries are analogous to those of EU Member States. In addition, the EU has long standing bilateral agreements for cooperation in research – **Science and Technology agreements** – with Canada, Russia and the United States of America. These agreements constitute the framework and a privileged forum to identify common interests and priorities, and to establish a policy dialogue on the necessary tools for collaboration in research.

At the project level, the **EuRuCAS** project, to be launched in 2012, specifically aims at enhancing EU-Russia collaboration on Arctic research. It will extend, consolidate and strengthen scientific cooperation between researchers from the EU Member States and Associated Countries with those from Russia. It will do so by providing access to the Nansen International Environmental and Remote Sensing Centre (NIERSC) established in St. Petersburg, Russia, for joint studies of climate and environmental changes in the Arctic and Sub-Arctic in the 21st century and their socio-economic impact

Furthermore, participation in FP7 research projects and fellowships is open to all countries. Many research organisations from non-EU countries, including Canada, Greenland, Iceland, Norway, Russia and USA, participate in FP7 projects and actions.

In addition, most projects on Arctic research launched by the EU since November 2008 specifically comprise components fostering either research cooperation, or dissemination and outreach activities, or both. For instance, **ACOBAR** will develop new technologies, and both this and the *ice2sea* projects will contribute towards fostering technology and know-how transfer by making results accessible to a wide audience. **INTERACT** meanwhile is not only building circum-arctic research facilities but also inviting new research teams to use them. The **ARCFAC** action supports teams with little previous experience of research on Svalbard to carry out research at the Ny-Aleslund Research and Monitoring Facility. Since 2007, over 30 international collaborations from Europe and beyond have received free access to the Ny-Ålesund facilities for a total of nearly 2000 man-days of research. **EUROBASIN** will set up an International Office which will include members from US and Canada and other non-EU countries with the purpose to facilitate collaborations and foster integration with parallel non-EU initiatives.

The **SEARCH for DAMOCLES** initiative (2006-2011) was a joint initiative attracting €0.6 million in EU contribution and designed to bridge two major independent Arctic research programmes in North America and Europe: **SEARCH** (Study of Environmental Arctic Change, USA) and **DAMOCLES** (Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies, EU).

A symposium entitled *The Arctic climate system, its present status, future evolution and potential impacts* took place in late 2009 as part of the **DAMOCLES** project (EU contribution to the project overall: €16.5 million). Participation was open to all experts on Arctic issues, and 46 partners from across Europe and Russia took part. The symposium produced a joint declaration concerning the future of climate research in the Arctic region.

Reporting, Monitoring and Mapping

FP7 is contributing financially to the Global Earth Observation (GEO) initiative and to the development of the Global Earth Observation System of Systems (GEOSS). Some of the projects supported by FP7, e. g. **ACOBAR**, **HYPOX**, **EUROSITES**, directly contribute to understanding the impact of climate change on the Arctic environment and to GEOSS. Through its participation in GEO and GEOSS, the EU is also engaged with their future plans for the Arctic, including on Arctic policy, sustaining arctic observing networks, and the development of sustained and coordinated pan-Arctic observing and data sharing systems.

European Environmental Agency (EEA)

The Shared Environmental Information System (SEIS), will modernise the current reporting systems towards a network of decentralised systems providing online access to data that are managed as close to the source as possible and improving quality and timeliness of information. This includes environmental monitoring data from the Arctic region. The EEA and the European Environment Information and Observation Network (Eionet) will work together with the Commission and other international stakeholders to implement the system, including countries and partners in the wider pan-European area and members of the UNECE that signed up to SEIS at the Astana ministerial conference in September 2011. The EEA will achieve this

by building further on the systems and tools developed for reporting (Reportnet); the emerging initiatives related to e-Government; the Infrastructure for Spatial Information in Europe (INSPIRE); and GMES and GEOSS. In this regard, the EEA is now represented in the Advisory Board to the Arctic Spatial Data Infrastructure Initiative on sharing spatial data in the Arctic region and in addition the Eye-on-Earth platform being developed by EEA might play a key role in the future work. The EEA in May 2009 held a high-level meeting on 'A global setting for European environmental monitoring - measuring what we must manage' with the aim to explore concrete ideas for building a sustainable and focused observing capacity that would best satisfy ongoing European needs, and provide inputs from Global Monitoring for Environment and Security initiative and other programmes to the GEO and the GEOSS, including in the Arctic region.

The EEA has been actively involved in the process of establishing a Sustained Arctic Observing Network (SAON), through interventions and presentations on Eionet at a number of SAON workshops and by hosting and participating in a SAON Steering Group meeting under the auspices of the Arctic Council. EEA/Eionet could become a central building block of SAON, not least as the five Nordic countries can benefit from reusing this network when establishing SAON. The EEA's Eye-on-Earth platform will continue to be developed as a tool for data sharing and two-way communication with the local users in the community, including in the Arctic, since Iceland and Norway are full members of EEA, in addition to the three Arctic EU Member States Denmark, Sweden and Finland.

The EEA has engaged in a dialogue with the Arctic Council working group on Conservation of Arctic Flora and Fauna (CAFF) on possible cooperation on the Arctic Biodiversity Assessment (ABA) and the Circumpolar Biodiversity Monitoring Programme (CBMP).

As a priority under the EU-Russia Partnership for Modernisation, cooperation has been intensified on environmental monitoring, including in the Arctic region. The EEA, has held the first of a series of workshops together with Russian partners on joint environmental monitoring, particularly in the Arctic, including forest and land cover monitoring, the creation of a system to collect and share environmental pollution monitoring data from water and air, long range transport of pollutants and improved management of waste and hazardous chemicals. The EEA has similarly in November 2010 signed a cooperation agreement with Greenland on establishing closer cooperation with regard to sharing environmental monitoring data in the Arctic. This work should in due time enable EEA to produce more comprehensive assessments of the environmental state of the Arctic region and in return Greenland will be able to draw on capacity and lessons learnt in Europe. The first concrete example of this cooperation is in the form of a film aimed at children on waste management challenges in Greenland. The film is being supported by education material which will be used in Greenlandic schools.

In January 2012 the EEA and the Greenland Ministry of Health signed a co-operation agreement covering environmental and health issues, including cooperation on monitoring and assessment of health issues related to chemicals and hazardous substances, human consequences of waste management, and health impacts due to climate change.

Finally, the EEA has made an extensive Arctic-related multimedia library available on its web site.²⁷

Space

The remoteness, low population density, marked seasonal variability²⁸ and harsh meteorological conditions in the Arctic mean that earth-orbiting satellites are essential tools communication, navigation and observation in the region.

Mindful of this, the Space and the Arctic workshop was organised on 20 to 21 October 2009 in Stockholm, Sweden by the Swedish National Space Board and the Swedish Meteorological and Hydrological Institute together with the European Space Agency (ESA), EUMETSAT and the European Commission. The participants issued a set of recommendations and the Commission services have reported on progress in implementing these recommendations in a working paper produced at the same time as this present paper.

The document describes how the EU Global Monitoring for Environment and Security initiative, GMES, will provide a permanent observational capacity for the planet. The planned Sentinel satellites will monitor sea-ice, glaciers, permafrost and other essential Arctic parameters. It is hard to assess the cost of this because monitoring the Arctic only forms part of the satellite's mission. Nevertheless the estimated cost of the Sentinel programme's Arctic component is approximately €80 million per year. This is partly paid from the EU budget.

For more information please consult the staff working document 'Space and the Arctic'.

Soil

In 2010, the European Commission's Joint Research Centre, together with partners from northern EU countries, as well as Norway, Iceland, Greenland, Canada, the USA and Russia provided a first detailed overview of circumpolar soil resources. The aim of the Soil Atlas of the Northern Circumpolar Region²⁹ is to inform the general public, policy makers, land managers, teachers and the general scientific community of the unique characteristics of northern soil and raise awareness of its environmental importance and global significance. The northern latitudes store up to half of the Earth's soil carbon, which forms about twice the amount of carbon stored in the atmosphere. The Atlas will contribute to management of agriculture, forests, water, land use, infrastructure, housing and energy transport networks.

²⁷

For example:

Films/interviews: <http://www.eea.europa.eu/multimedia/all#c7=arctic>

Photos (Arctic): <http://www.eea.europa.eu/signals/galleries/the-arctic/>

Photos (reindeer herding): <http://www.eea.europa.eu/atlas/eea/rain-on-snow/photos/>

Photos (ice roads): <http://www.eea.europa.eu/atlas/eea/baltic-ice-road/photos/>

Two Feature films (One degree matters + Our Arctic Challenge): <http://www.eea.europa.eu/multimedia>

²⁸

The sea-ice cover varies considerably between summer and winter

²⁹

<http://eusoiils.jrc.ec.europa.eu/library/maps/Circumpolar/>

Another project, *PAGE21* (receiving €6.9 million of FP7 funding) is studying Arctic permafrost and its interplay with climate change, and will shed light on the feedbacks between permafrost melting, atmospheric processes and climate change.

2. PROMOTING SUSTAINABLE MANAGEMENT AND USE OF RESOURCES

2.1 *Hydrocarbons and minerals*

The 2008 Communication proposed strengthening international cooperation on environmental standards for extraction and transportation of Arctic hydrocarbons, and promoting research on offshore technologies that could be deployed in harsh climates and deep waters.

EU energy policy aims at ensuring the uninterrupted physical availability of energy products and services on the market, at a price which is affordable for all consumers, while pursuing the EU's wider social and climate goals. The primary goals for energy policy (security of supply, competitiveness, and sustainability) are now embodied in the Lisbon Treaty³⁰.

The European Council adopted in 2007 ambitious energy and climate objectives for 2020 – to reduce greenhouse gas emissions by 20%, rising to 30% if the conditions are right³¹, to increase the share of renewable energy to 20% and to make a 20% improvement in energy efficiency. The European Parliament has continuously supported these goals. The European Council has also given a long-term commitment to the decarbonisation path with a target for the EU and other industrialised countries of 80-95% cuts in emissions by 2050. The Commission therefore seeks increased dialogue on energy sources in unison with the need and wishes of the local populations.

EU energy goals have been incorporated into the "Europe 2020 Strategy for smart, sustainable and inclusive growth", adopted by the European Council in June 2010³².

On 7 September 2011 the Commission adopted a Communication "The EU Energy Policy: Engaging with Partners beyond Our Borders"³³, setting out for the first time a comprehensive strategy for the EU's external relations in energy through improving transparency among EU Member States on their energy agreements with third countries, strengthening coordination and developing comprehensive energy partnerships with key partner countries.

Raw materials have become an essential element of the Europe 2020 Strategy and an integral part of the EU's industrial policy. On 2 February 2011, the Commission adopted a Communication on Commodities and Raw Materials. This Communication confirms the approach of the Raw Materials Initiative, launched in 2008, and calls

³⁰ Article 194 of the Treaty on the functioning of the European Union (TFUE).

³¹ The European Council specified: "provided that other developed countries commit themselves to comparable emission reductions and economically more advanced developing countries to contributing adequately according to their responsibilities and respective capabilities"

³² http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/115346.pdf

³³ COM(2011) 539 of 7.09.2011

for a reinforcement of its 3 pillars: supply of raw materials from global markets, sustainable supply from sources in the EU and recycling and resource efficiency.

In this context, the Commission has initiated a comprehensive dialogue with the Government of Greenland during 2011, with the aim of exploring the possibilities of a future cooperation within the area of natural resources, including raw materials.

Improving offshore safety in the EU

The EU has a vital interest in ensuring maximum safety for workers in the offshore oil and gas industry and protection of the environment. The explosion of the Deepwater Horizon drilling rig in the Gulf of Mexico on 20 April 2010 and the subsequent leak from the oil well on the sea bottom led the Commission to assess current procedures in Europe in order to prevent the occurrence of a similar incident in its own waters.

In May 2010 the Commission launched an assessment of safety in the exploration and production of oil and gas in European waters. It adopted in October 2010 the Communication "Facing the challenge of the safety of offshore oil and gas activities"³⁴, which included the finding that the offshore oil and gas industry is governed by heterogeneous health, safety and environmental regimes that may not provide adequate response to the risks posed, nor legal clarity about the obligations of the industry. It was concluded that further action is needed to ensure that best available practises are followed throughout the EU.

Consequently, the Commission invited the Council and the European Parliament to express their views on the specific actions proposed. These actions focussed on five areas: 1) thorough licensing procedures, 2) improved controls by public authorities, 3) closing gaps in applicable legislation, 4) reinforcing EU disaster response and 5) international cooperation to promote offshore safety and response capacities. Subsequently the Council and the European Parliament issued their findings on the document and recommendations for further work to address the challenges identified.

Within the framework outlined by its Communication and positions taken by the Council and the Parliament, the Commission completed the impact assessment. As part of this activity, the Commission opened a public consultation to gather the views of stakeholders and other interested parties inside and outside the EU on the safety, health and environmental aspects and transparency of offshore oil and gas operations in the EU. On 27 October 2011 the Commission has proposed a new law on safety of offshore oil and gas prospecting, exploration and production activities³⁵. The Commission proposed among others to promote high safety standards for offshore oil and gas operations at international level at appropriate global and regional fora..

Dialogue with non-EU partners on the safety of offshore drilling

In the framework of regular contact with the European countries most relevant for the Arctic activities, such as Norway (e.g. activities in the Lofoten area) and

³⁴ (2010) 560 of 13.10.2010.

³⁵ COM(2011) 688 of 27.10.2011

Denmark/Greenland³⁶/Faroe Islands, the Commission services organised and participated in a number of meetings focused on the safety of offshore oil and gas operations in the most challenging environments. Avoiding negative environmental effects in the sensitive Arctic is crucial. There has recently been a rapid development of new safety techniques and procedures related to global review of the regulation of offshore drilling, triggered by the accident in the Gulf of Mexico in April 2010.

The Commission maintains close contact with the industry to keep up with the rapid development of technology and expertise in the challenging area of offshore drilling. Individual companies and industrial associations, such as the International Association of Oil and Gas Producers (OGP), are useful sources of information. The consultations with relevant companies, such as the Norwegian Statoil, are focused directly on the Arctic region.

An uncompromising "safety first" policy in the industry is a fundamental requirement, but there is no substitute for rigorous and qualified supervision and regulation by national authorities. That is why the Commission is in close contacts with national regulators and follows regularly the activities of Member States in this field. The Commission regularly calls meetings with national regulators to discuss existing best practices and changes in procedures and technology that could help to minimise the risk of negative environmental impact of offshore activities. The Commission also regularly attends, as an observer, the meetings of UK's Oil Spill Prevention and Response Advisory Group (OSPRAG) which works proactively to identify and address cross industry issues with respect to well control and oil spill response on the UK continental shelf. Many of the wells operate in challenging environments so the output will therefore be a useful means for improving the safety of operations in the Arctic region.

The recent G-20 activity on the safety of offshore oil and gas operations is focused on global identification and sharing of best practices. The initiative was launched by Russia, which has strong Arctic ambition, and involves major offshore producing countries as well as the Commission. The recent report by the US administration's Oil Spill Commission contains strong recommendation for the Arctic region which suggest that also the US will take a more active role in related international activities. In this context, while the G-20 initiative does not target one particular region, the improvement of safety of operations will be of special interest in the most demanding regions.

Promotion of sustainable energy

The EU recognises the importance of international cooperation for promotion of sustainable use of energy sources. Promotion of energy efficiency, energy savings and renewable energy sources is an important priority for EU cooperation with

³⁶ The dialogue between the European Commission and Denmark/Greenland takes place within the general framework of the existing partnership agreements between the European Union, the Kingdom of Denmark and the Government of Greenland (The Fisheries Partnership Agreement (2006/1006/EC) and the Partnership Agreement ('Council decision on relations between the European Community on the one hand and Greenland and the Kingdom of Denmark on the other'; 20 June 2006; 9802/06). See below Chapter 4.

partners in the Arctic in the framework of bilateral dialogues, as well as in multilateral energy cooperation frameworks.

Dialogue with European partners

Norway has indicated its intention to implement the Renewable Energy Directive and agree to produce more renewables above the current share (60% of its total energy and 100% of its electricity needs from renewable energy sources). Norway has also a strong commitment to development of Carbon Capture and Storage technology.

Dialogues with US and Canada

At the EU-US Summit of 3 November 2009 it was decided to establish an Energy Council at ministerial level. The inaugural meeting of this EU-US Energy Council took place in Washington on 4 November 2009. A second meeting was held in Lisbon on 19 November 2010 and a third one in Washington on 28 November 2011. This framework has provided an opportunity for an exchange of views and coordination of actors, including the establishment of working groups, on global energy issues and developments as well as on energy policy initiatives planned or underway in the EU and the US. The Energy Council is also promoting energy efficiency bilaterally and globally as well as co-operation on energy technologies, research and deployment.

The EU also has had two High-Level Energy Dialogues with Canada since the EU-Canada Summit in 2007. The dialogues focused on energy efficiency, renewable energy, and the implementation of cleaner energy technologies, with Carbon Capture and Storage (CCS), bio-energy, and distributed generation and smart electricity networks identified as priority areas for collaboration in research, development and demonstration. The dialogues will allow Arctic energy issues of mutual interest or concern to be addressed in the future.

Barents Euro-Arctic Council (BEAC)

The Commission is a BEAC member and participates in the Joint Working group on Energy. Following a Norwegian initiative the work in this group will give priority to energy efficiency and renewable energy. The Group serves as a catalyst for cooperative activities among the energy systems of the Region. The main focus is the promotion of measures to improve energy efficiency and renewable energy in the Barents region.

EU-Russia Energy Dialogue

The EU-Russia Energy Dialogue, established at the sixth Summit between the EU and Russia in Paris on 30 October 2000, is a key instrument to further develop EU–Russia cooperation in the energy sector. The objective of the dialogue is to provide reliability, security and predictability of energy relations of the free market in the long term and to increase mutual confidence and transparency. In 2010, the Energy Dialogue marked its 10th anniversary with a high-level conference on 22 November in Brussels.

The work of the Energy Dialogue is carried out in three Thematic Groups: 1. Energy Strategies, Forecasts and Scenarios, 2. Market Developments, and 3. Energy

Efficiency, and in three Sub-groups: on Energy Economic Issues, on Investments and on Infrastructure. Thematic groups involve experts nominated by the EU Member States and Russia, from the European industry, international financial institutions and from the Commission. Organisational work in each Thematic Group is handled by a Secretariat, which consists of representatives of the Commission's DG Energy and of the Russian Ministry of Energy.

See Annex II for a list of relevant EU-Russia projects.

Multilateral cooperation with the Arctic countries

The EU and the Arctic countries are partners in many multilateral organisations, partnerships of international energy cooperation, such as G8, the International Energy Agency, International Partnership for Energy Efficiency Cooperation, Methane to Markets, Carbon Sequestration Leadership Forum, The International Partnership for Hydrogen and Fuel Cells in the Economy etc.

The EU recognises the importance of promoting and developing renewable sources of energy in the Arctic region. The Commission therefore seeks increased dialogue to promote these alternative sources of energy in unison with the needs and wishes of the local populations.

The Commission and the EMSA also follow discussions in the Arctic Council (EPPR Working Group) related to the development of a new Instrument on Arctic Marine Oil Pollution Preparedness and Response.

2.2 Fisheries

The 2008 Communication proposed putting in place a conservation and management regime for fisheries in the Arctic before new fishing opportunities arise.

Changing climatic conditions in the Arctic are affecting fisheries dynamics. The EU supports the objective of ensuring the exploitation of Arctic fisheries resources at sustainable levels, whilst respecting the rights of local coastal communities. The Commission advocates a precautionary approach whereby, prior to any new fishing opportunities arising, a regulatory framework for the conservation and management of fish stocks should be established for those parts of the Arctic high seas not yet covered by an international conservation and management system. Arctic fisheries management was discussed for the first time in the Arctic Council at the Senior Arctic Officials (SAO) meeting in Narvik in November 2007. Following the US Senate resolution of August 2007 on the Arctic fisheries management organisation, the US administration launched a discussion on the need for an agreement for managing migratory and trans-boundary fish stocks in the Arctic Ocean. The resolution argued that, in light of declining commercial fish stocks worldwide and the likelihood of new biological opportunities due to climate change, commercial fishing should be restricted until such an agreement is set up. The majority of the Arctic Ocean coastal states argued that the existing Regional Fisheries Management Organisations (RFMOs), North East Atlantic Fisheries Commission (NEAFC) and North Atlantic Salmon Conservation Organization (NASCO), are well functioning and, if commercial fishing in the Arctic will increase, these RFMOs could extend their geographical scope.

The matter was also raised by the Commission at the North Atlantic Fisheries Ministers Conference in Kaliningrad, Russian Federation, in June 2009 and was again discussed at the NEAFC meeting in November 2009 in London. The Commission continues to strive to include this issue in all relevant meetings of international organisations, including the United Nations. In 2009, the EU presented a proposal for a paragraph for the UNGA Resolution on Sustainable Fisheries concerning the need for increased scientific research in the Arctic to examine the effects of climate change on fisheries in the Arctic Ocean.

The most significant fisheries in the Arctic presently take place in the Barents Sea off the coasts of Norway and Russia, as well as in the Norwegian Sea. However, there are also fisheries taking place off the coast of Greenland. The EU, through its various bilateral arrangements, particularly with Norway and Greenland, is able to access some of these valuable resources and has benefited through cooperation from the significantly increased availability of certain species in recent years.

2.3 Transport

The 2008 Communication proposed that International Maritime Organisation (IMO) rules and obligations should be implemented as regards environmental and safety standards. It also suggested exploring support for some Arctic navigation routes to be designated as particularly sensitive areas under IMO rules. The Communication also suggested that maritime surveillance capacities be improved and that east-west land and air transport infrastructures should be developed.

Maritime transport in the Arctic has become a widely discussed issue. It is helpful to distinguish different types of shipping activities in the Arctic. Cruise ship tourism has steadily increased over the past years intra-Arctic transport has been ongoing for many decades: trans-Arctic maritime transport has only occurred on a small scale, but reduced sea ice cover is likely to change this in years to come.

Maritime Safety and Environment Protection in Arctic, work in IMO, new Polar Code

IMO, the UN body responsible for global regulation of maritime transport, launched a process for the development of a mandatory international code for safety of ships operating in polar waters (the Polar Code) in February 2010. First discussions were held in the Ship Design and Equipment Sub-Committee meeting (DE 53), attended by the Commission under its IMO observer status. Progress has gradually been achieved in subsequent meetings (DE 54, DE 55) and correspondence groups in which the Commission, assisted by the European Maritime Safety Agency (EMSA) participated. Other IMO committees and sub-committees, with the Commission closely associated, have also addressed Arctic issues for improved safety and environmental protection. The Commission, with the assistance of EMSA, has actively followed IMO work, seeking coordination and arranging meetings with EU Member States, prior to IMO sessions, in order to build EU common positions on EU relevant topics.

Full compliance with international law and principles as defined by the United Nation Convention on the Law of the Sea (UNCLOS)

As highlighted in the 2008 Communication "The EU and the Arctic Region", an important policy objective for transport and shipping is full compliance with international law and principles as defined in UNCLOS. Freedom of navigation and the right of innocent passage (transit passage also being stated in the Council conclusions) are essential principles that need to be respected as new Arctic and trans-Arctic routes are gradually opening up for navigation.

The Commission has been closely following the latest developments in Arctic sea transport, in particular cargo and passenger ships taking the North-West Passage, as well as the Northern Sea Route, and the increasing presence of cruise ships in the Arctic. This monitoring has also included regulations and practices in place or introduced by Arctic coastal states with possible effects on international navigation. This exercise has partly taken place through regular contacts with industry representatives (shipping companies, classification societies, global associations) and with EU Member States, for instance through the participation in relevant Council meetings on the Law of the Sea where Member States have also expressed their views. A study on "Legal Aspects of Arctic shipping" was completed in April 2010³⁷.

Canada exercised its right to legislate to the limit of its Exclusive Economic Zone, provided by article 234 of UNCLOS (on ice-covered waters), when it launched its NORDREG regulation which came into force on 1 July 2010. It requires mandatory reporting and clearance from merchant ships entering the zone. The matter was submitted by Canada to the IMO in October 2010 for recognition. The IMO Maritime and Safety Committee 88 considered the regulation, but objections were raised by some delegations, and Canada was encouraged to resubmit its paper for reconsideration and possible adoption. At the last IMO Assembly in November 2011, concerns were again raised over Canada's NORDREG, including by some EU Member States.

The Northern Sea Route (NSR) saw several successful trans-Arctic ventures accomplished by EU/European Economic Area and Russian maritime companies during the summers of 2009 and 2010. The number of ships sailing through the NSR significantly increased in the summer of 2011 and according to plans for the summer of 2012 the number of ships sailing through the NSR from Europe to Asia or vice-versa could easily triple as compared to 2011. This route shortens the oceanic route from Europe to Asia and has potential for significant cost savings and reduction in shipping days needed. These developments have drawn interest from the shipping community and from exporting and importing countries as an opportunity to increase their global competitiveness. The Commission, EU Member States and industry have also been following developments affecting shipping and navigation along the Northern Sea Route as well as for the North-West Passage especially regarding adopted practices or requirements in place.

Reinforced infrastructure and presence in the Arctic Search and Rescue (SAR)

The Arctic Council's Task Force on SAR made good progress and the Arctic States adopted an important legally binding agreement on Cooperation in Aeronautical and

³⁷ <https://webgate.ec.europa.eu/maritimeforum/content/2396>

Maritime Search and Rescue in the Arctic at the Nuuk Arctic Council Ministerial meeting of 12 May 2011. Although the Task Force was only open to Arctic Council members, the Commission contributed to the discussions during the Arctic Council's Deputy Foreign Ministers' meeting in Copenhagen in May 2010. Some EU Member States, present as permanent observers in that meeting, suggested that discussions on Arctic SAR plans and needs should be extended to include non-Arctic countries that could possibly contribute to a joint effort. The EU can provide technical and surveillance means upon request by a third country, in the event of an incident or emergency in the Arctic. Means such as SafeSeaNet, Automated Identification System (AIS), Long Range Identification and Tracking of ships (LRIT) and CleanSeaNet can help to track and trace ships and oil spills.

Satellite systems to reinforce Arctic maritime surveillance, traffic monitoring, safety and search and rescue capabilities

The EU's Galileo satellite system for global navigation and positioning is currently being deployed and will provide early services as of 2014. Galileo will contribute to safety, navigation and positioning in Arctic waters, both of ships and air traffic through its various services and possibilities i.e. open free service, commercial, Safety of Life, Public Regulated, and Search and Rescue services.

(Please refer to the staff working document on "Space and the Arctic" for further details.)

Participation in Arctic Council, bilateral contacts, third countries and stakeholders

The Commission and EMSA have taken part in several meetings, mainly in the PAME (Protection of the Arctic Marine Environment) and more recently the EPPR (Emergency Prevention Preparedness and Response) Working Groups to share experiences in marine safety. In the March 2012 at the PAME Working Group meeting, EMSA made a presentation on its ship tracking and monitoring systems that are or may be deployed by Arctic countries to support implementation of the Arctic Marine Shipping Assessment³⁸. PAME agreed to explore how it might work with and benefit from the work of EMSA.

Progress has been made with Russia towards an agreement on starting a pilot project - involving the Commission and EMSA - for the improvement and further cooperation on vessel traffic monitoring in the Baltic Sea and the Barents Sea. The Commission has also developed contacts and cooperation with Canada on Arctic and shipping related matters, such as Port State Control, as Canada is part of the Paris Memorandum of Understanding for its North-East Atlantic coast ports. Arctic matters have also been raised in regular Commission contacts with relevant maritime industries, associations (ship owners, ports, shipyards) and stakeholders, and participation in Arctic events has enabled to Commission to keep good contact with relevant Arctic authorities. The Arctic was also included in the programme of an international shipping conference jointly organised by the Commission and Denmark in May 2010 in Copenhagen, in the context of the Commission presenting its Maritime Transport Strategy until 2018 to the global shipping community.

³⁸ <http://arctic-council.org/filearchive/AMSA%20Scenarios%20of%20the%20Future%20-%20Narratives%20Report.pdf>

Arctic transport infrastructure other than maritime

The eleven countries belonging to the Northern Dimension Partnership for Transport and Logistics (NDPTL) (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden, Norway, Belarus, and Russia) agreed in June 2010 to establish a secretariat for the Partnership to be hosted in the headquarters of the Nordic Investment Bank in Helsinki and had signed the Secretariat Agreement by December 2010. The NDPTL secretariat began its activities in February 2011. It was an important step in the context of efforts to establish trans-European (multi-modal) connections in Europe's High North. It will also contribute to addressing the lack of East-West connections for several modes of transport, including railways. In addition, Memorandum of understanding on the Northern Dimension Partnership on Transport and Logistics (NDPTL) is now entering in its operational phase, with the identification (for future endorsement by the partners) of an infrastructure network and potential priorities on transport related projects. The EU regional development policy, with its projects and infrastructure development, and the Trans-European Transport Network programme remain crucial tools to developing the Arctic region. The EU has also achieved significant progress in the field of civil aviation with cooperation and agreements reached with third countries all over the world, including Arctic states.

2.4 Tourism

The 2008 Communication signalled support for sustainable tourism that protects the environment and benefits local communities. It also suggested that the safety of cruise ships should be enhanced, and their access to highly vulnerable areas be restricted.

Arctic tourism, in particular cruise ship activities, has been steadily increasing in recent years. The Commission has addressed options for enhancing safety standards and establishing best practice through work, for instance, with the Associations of Cruise Operators (AECO), most notably at a conference in Rome in 2009. Industry is itself exploring options with classification societies and flag states. At Arctic Council level, the PAME working group has discussed best practices for operators under the follow-up action of the Arctic Marine Shipping Assessment³⁹, with the involvement of the Commission and EMSA. The Commission reflects in various fora, in parallel to the ongoing development of IMO's mandatory Polar Code, on how the risks incurred by cruise passenger ships operating in Arctic waters, and their passengers on board, can be reduced.

Discussions, involving the Commission, have taken place on solutions for crucial safety issues that a number of cruise passenger vessels in the Arctic are confronted with, in terms of bad or dangerous practices. These include navigating in uncharted waters, approaching icebergs and other hazards, or not coordinating voyages with other ships in Arctic areas with particularly limited Search and Rescue (SAR) availability. The Commission has had discussions on possible initiatives for risk reduction in the Arctic with the cruise ship industry and other relevant actors.

³⁹ <http://arctic-council.org/filearchive/AMSA%20Scenarios%20of%20the%20Future%20-%20Narratives%20Report.pdf>

The legally-binding SAR agreement adopted by the eight Arctic States at the Nuuk Ministerial meeting of 12 May 2011 is an important development in terms of reinforced cooperation and coordination between Arctic States, increasing safety in the Arctic.

EU cross-border and transnational programmes for the Arctic regions of the EU and neighbouring areas support several projects developing new approaches to tourism in the Arctic⁴⁰, such as the project Tourist Guide for Northern Periphery,⁴¹ which is developing innovative information services for tourists.

3. CONTRIBUTING TO ENHANCED ARCTIC COOPERATION

The Commission's 2008 Communication suggested that greater input should be made to the workings of the Arctic Council and increased dialogue should take place with regional partners. It also suggested that the possibilities of integrated ecosystem management in the Arctic should be explored.

Since 2008 the EU has substantially increased its involvement in Arctic cooperation, notably through its engagement with the **Arctic Council** and Arctic Council members. The Arctic Council remains the most important forum for international cooperation in the region, and its recent agreement on Cooperation in Aeronautical and Maritime Search and Rescue in the Arctic is an important indicator of its development. The Commission applied, on behalf of the EU, to become a permanent observer to the Arctic Council on 1 December 2008. Since criteria for the admission of observers were adopted in May 2011, updated information was submitted by the Commission in a letter co-signed by Vice President Ashton and Commissioner Damanaki to the Chair of the Arctic Council, Swedish Foreign Minister Carl Bildt. The Arctic Council will decide on applications for observer status at its next ministerial in May 2013.

Currently all six observer states are EU Member States, i.e. France, Germany, Netherlands, Poland, Spain, and the United Kingdom. Italy has also applied to become an observer. The Commission was invited and attended the ministerial meetings in 2009 and 2011 as well as the May 2010 deputy foreign ministers meeting and the Information Day with observers in Copenhagen. Contacts and dialogue with the consecutive Norwegian, Danish and Swedish chairmanships, as well as with the Arctic Council Secretariat in Tromsø, have been frequent and constructive.

The Commission services, the European External Action Service (EEAS) and EU agencies have participated as ad hoc observers in Arctic Council meetings and engaged actively in its working groups. EEA staff members were part of the external team that conducted a review of the achievements to date of the Arctic Council working group on the Arctic Monitoring and Assessment Programme (AMAP). AMAP is also the official co-ordinator of the FP7 project ArcRisk described in chapter 2. Similarly the Commission and the EEA have contributed to the Arctic Council initiative on an Arctic Ocean Review which addresses issues of marine

⁴⁰ <http://www.interregnord.com/en/projects/north/1-trade-and-industry-development.aspx>

⁴¹ <http://www.northernperiphery.eu/en/projects/show/&tid=82>

governance and identifies gaps and areas for further improvement in the Arctic. The EU also contributes to work on marine safety and offshore oil and gas activities taking place under the Arctic Council, specifically under the Protection of the Arctic Marine Environment (PAME) and the Emergency Prevention, Preparedness & Response (EPPR) Working Groups

The Northern Dimension (ND) remains a successful common policy of the EU, Iceland, Norway and Russia. The Northern Dimension Policy Framework Document was adopted at the 2006 Northern Dimension Summit and entered into force on 1 January 2007. The policy covers a broad geographic area “from the European Arctic and Sub-Arctic areas to the southern shores of the Baltic Sea, including the countries in its vicinity and from North-West Russia in the east to Iceland and Greenland in the west. While North-West Russia remains the focus, the “extensive Arctic and sub-Arctic areas including the Barents Region” are considered as “priority areas”. This formulation, together with the fact that both the Arctic Council and the Barents Euro-Arctic Council are considered as “participants” of the ND Policy, establishes the basic parameters for the Arctic Window of the Northern Dimension.

The Northern Dimension Steering Group has repeatedly discussed ways and means to further define the Arctic Window. The meeting of the ND Senior Officials on 12 November 2009 adopted a Joint Statement which instructed the Steering Group “to consider ways to develop the ND Arctic Window without duplicating work within the mandates of the Arctic Council or the Barents Euro-Arctic Council. In particular they noted that further consideration would be needed on how indigenous peoples could be included in the deliberations of the ND Arctic Window.” Following the Senior Officials Meeting the Steering Group invited representatives of the Indigenous Peoples to participate in meetings and also requested all the ND Partnerships and initiatives to consider what additional action they could undertake with regard to the Arctic region.

At the 11th meeting of the ND Steering Group in Reykjavik on 21 June 2010, all Northern Dimension Partnerships and initiatives were invited to consider to what extent increased attention could be given to Arctic issues in their respective domains. Preliminary results of these contributions were discussed in Oslo on 23 September 2010 and the Steering Group decided to request that all ND Partnerships and initiatives submit written contributions on their views on how they could pay increased attention to the Arctic region. Norway undertook to prepare a concept paper on the ways and means to better involve the indigenous peoples in the practical implementation of the Northern Dimension Policy. The ministers also adopted a Joint Statement which referred to the the untapped potential of the Arctic Window

In addition to the well-established ND Partnerships on Environment (NDEP) and in Public Health and Social Well-Being (NDPHS) two other Partnerships have been set up respectively on Transport and Logistics (NDPTL) and on Culture (NDPC) during the period 2009-2011. The Nordic Investment Bank hosts the secretariat of the NDPTL and the Nordic Council of Ministers hosts the NDPC secretariat. Other ND initiatives are the Northern Dimension Institute (NDI), set up in 2010 between 19 universities and research centres, and the Northern Dimension Business Council providing a cooperation platform for businesses in the ND region. Canada is a partner in the NDEP and an associated partner in the NDPHS. Although it was a founding partner of the NDPHS, it withdrew from it as a full partner in 2010.

The Northern Dimension has also been a useful umbrella to facilitate cooperation between the *Four Councils of the North*, i.e. the Arctic Council, the Barents Euro-Arctic Council, the Council of the Baltic Sea States and the Nordic Council of Ministers. An annual coordination meeting is held between the presidencies of the councils and the Commission. Russia and Norway took the initiative to organise a deputy foreign ministers' meeting of the four council chairmen and the Commission respectively in St. Petersburg in September 2009 and in Oslo in January 2012. These meetings led to a closer look at ways to avoid overlap and promote synergy among the four councils.

The Commission has been a member of *Barents Euro-Arctic Council (BEAC)* since its foundation in 1993. The EU supports the BEAC role in facilitating cross-border cooperation in the High North, in which EU programmes in collaboration with the Nordic Council of Ministers (NCM) play an important role.

The NCM is a close partner of the EU on Arctic and Barents cooperation. A workshop to identify concrete areas for developing common initiatives took place on 8 April 2011⁴².

Arctic cooperation is now regularly included in the agendas of *bilateral meetings* with the Arctic states, notably Canada, Iceland, Norway, Russian Federation and the US. The visits of the High Representative / Vice President Ashton and Commissioner Damanaki in the Arctic areas in Finland, Sweden, Norway, including Svalbard, and Greenland underlined the importance of the region and provided opportunity for firsthand assessment of the changes as well as possibility to discuss the challenges with local populations, Saami and Inuit representatives and Arctic experts. Specific missions on bilateral Arctic policy implementation were carried out by Commission and EEAS officials to the governments of Canada, Greenland, US and Russia.

In addition, the EU Delegations in Arctic states have a significant role in communicating relevant EU policy to governments and the public as well as informing EU on national Arctic activities of relevance in the Arctic states.

Iceland applied to join the EU in June 2009. The European Council subsequently decided in June 2010 to open accession negotiations, and the Inter-Governmental Conference (IGC) began negotiations in June 2011.

EU-Greenland Relations: In 2009, Greenland, an autonomous territory of the Kingdom of Denmark, increased its autonomy, when the Self Government Act took over from the 1979 Home Rule arrangement. The Act contains the possibility of the devolution to the Government of Greenland of most of the (internal) competencies hitherto in the hands of the Danish government. Furthermore, it recognizes the right of the people of Greenland to self-determination under international law, as well as defining the natural resources located in Greenland, as being the property of the Greenlandic people. Greenland's relations with the EU are defined by the Overseas Association Decision and the comprehensive Greenland-EU partnership, which provide the framework for cooperation between Greenland, Denmark and the EU.

⁴² <http://www.norden.org/en/nordic-council-of-ministers/ministers-for-co-operation-mr-sam/the-arctic/calender/nordic-council-of-ministers-eu-seminar-an-arctic-agenda>

In the context of the Overseas Association, Greenland has the ambition to play a leading role in the discussions between the Overseas Countries and Territories (OCTs), the Member States to which they are associated and the EU on issues related to environment and climate change. On 29–30 March 2011 the Government of Greenland organized a Climate Change workshop in Brussels. Greenland co-chairs the partnership working party on environment, climate change, prevention and management of natural disasters and thus plays an active role in defining environmental themes of relevance in the context of the ongoing revision of the Overseas Association Decision, which expires at the end of 2013. The aim of this revision of the Overseas Association Decision is to modernise and adapt the association relationship to the needs of the OCTs. Greenland and the Commission hosted an OCT Association meeting in March 2010 and Greenland chairs the Overseas Countries and Territories Association (OCTA) during the Danish EU Presidency in 2012.

Regarding Greenland, the current partnership allows for policy dialogue on areas of mutual interests, beyond targeted financial aid, such as research, raw materials and energy. During the period 2007-2013, Greenland will receive EU financial support amounting to €25 million per year in 2006 prices. Greenland ministerial delegations have met with Commissioners to discuss the Greenland-EU partnership in 2009, 2010 and 2011, where the need to strengthen the partnership has been an important issue. A mid-term review of the partnership was undertaken in 2010. The targeted sector for financial cooperation in the period 2007-2013 is education and both Greenland and Denmark has expressed an interest in maintaining that focal sector for the future financial period (2014-2020). On 7 December 2011, the Commission submitted a legislative proposal to renew the partnership for the period 2014-2020⁴³. As part of the future partnership, the Commission has proposed an enhanced dialogue on Arctic issues as well as natural resources, including raw materials. Hence, intensive dialogue has been initiated in 2011 between the Government of Greenland and all relevant Commission services.

The EU-Greenland Partnership is complementary to the EU-Greenland Fisheries Partnership Agreement (FPA), and defines the EU's financial contribution for development beyond the area of fisheries. Given that the current protocol to the FPA will expire end of 2012, a new three-year protocol was successfully initialled in February 2012. Under the terms of the new protocol, the EU will annually provide a financial contribution, including sectoral support, to Greenland, to a maximum amount of €7.8 million. In 2010, the EEA and Greenland signed a cooperation agreement to support sustainable development and to protect and improve the environment through targeted, relevant and reliable information to policymakers in Greenland and Europe. In January 2012, the EEA and the Greenland Ministry of Health signed a cooperation agreement covering environment and health issues.

International legal frameworks. UNCLOS, the widely recognized international legal framework, and the IMO remain the major basis for Arctic cooperation concerning maritime issues; the EU remains fully attached to both and to their respective principles.

⁴³

COM(2011) 846, 7 December 2011

The EU is promoting integrated ecosystem-based management of human activities in the Arctic in the framework of the Oslo and Paris Conventions for the protection of the marine environment of the North-East Atlantic (OSPAR) which is working to establish a network of well-managed marine protected areas by 2012. The EU cooperates also in the framework of OSPAR to assess the suitability of existing measures to manage oil and gas activities in the Arctic, including drilling in extreme conditions and their relevance to potential environmental impacts. Based on this assessment, OSPAR will conclude on the need for action within the scope of the OSPAR Convention.

The EU has continued to put forward within competent UN fora the concept that biodiversity in areas beyond national jurisdiction needs to be properly addressed. The EU believes that this should be done through an implementing agreement of UNCLOS and based on the obligations of States under the Convention to protect and preserve the marine environment and to cooperate on a global and regional level in order to achieve this. This could have relevance to the Arctic. At the fourth meeting of the "UN Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction" which took place from 31 May to 3 June 2011, growing support at international level on exploring such an option was noted, though this continued to be opposed by some key international partners.

The Commission remains in contact with Iceland and Norway on possible integration of the Marine Strategy Framework Directive into the European Economic Area Agreement.

The Arctic TRANSFORM project funded by the European Commission engaged experts in a transatlantic discussion of five Arctic-related thematic areas: indigenous peoples, environmental governance, fisheries, offshore hydrocarbon activities, and shipping. Expert working groups addressed each thematic area with the goal of developing the international and EU policy options for addressing the rapid changes underway in the Arctic marine area⁴⁴.

Communication and coherence. Following the Commission's proposal to explore the possibilities of setting up a European Arctic Information Centre and its endorsement by the Council of the European Union (December 2009) and European Parliament (January 2011), the Commission has been in contact with relevant European entities. The Commission has also presented its views on the concepts of the possible information centre through answers to parliamentary questions⁴⁵.

The Commission is preparing to implement a preparatory action, approved by the Budgetary Authority with a budget of €1 million, for a strategic assessment of the impact of development in the Arctic. The project will also follow up the suggestion in the 2008 Communication to explore possibilities for creating a European Arctic Information Centre and, for this purpose, will test the feasibility of an Arctic information platform based on a network of leading Arctic research centres and universities within and outside the EU. Arctic policy and Arctic cooperation is the

⁴⁴ <http://arctic-transform.org/docs.html>
⁴⁵ P-7657/2010 – Diana Wallis (ALDE)

subject of intensive coordination between the Commission services and the EEAS. The Arctic inter-service group (AISG) established in early 2008 continues to meet regularly and serves as an important channel for regular and continuous information exchange between the Commission, the EEAS and agencies (EEA and EMSA). The AISG members participated and presented the EU's Arctic policy at several conferences devoted to Arctic issues. The various sections on the Europa website⁴⁶ and the Maritime Forum⁴⁷ now include special thematic pages on the Arctic which will be continuously updated and expanded.

⁴⁶ http://eeas.europa.eu/arctic_region/index_en.htm; http://ec.europa.eu/environment/enlarg/arctic_en.htm;
http://ec.europa.eu/maritimeaffairs/policy/sea_basins/arctic_ocean/index_en.htm;
http://ec.europa.eu/research/environment/newsanddoc/article_2993_en.htm

⁴⁶ http://eeas.europa.eu/arctic_region/index_en.htm

⁴⁷ <https://webgate.ec.europa.eu/maritimeforum/taxonomy/term/95>

GLOSSARY

Acronym	Definition
ABA	Arctic Biodiversity Assessment
AC	Arctic Council
ACCESS	Arctic Climate Change, Economy and Society (collaborative research project supported by FP7)
ACOBAR	Acoustic Technology for Observing the interior of the Arctic Ocean (collaborative research project supported by FP7)
AIS	Automatic identification system. Anti-collision system for ships, also used for vessel traffic monitoring (VTMIS).
AMAP	Arctic Monitoring and Assessment Programme. Arctic Council working group
AMSA	Arctic Marine Shipping Assessment
ARCFAC	European Centre for Arctic Environmental Research (research infrastructures project supported by FP6)
ArcRisk	Arctic health risks: Impacts on health in the Arctic and Europe owing to climate-induced changes in contaminant cycling (collaborative research project supported by FP7)
ATP	Arctic Tipping Points (collaborative research project supported by FP7)
BEAC	Barents Euro-Arctic Council. A forum for intergovernmental cooperation in the Barents Region established in 1993.
CAFF	Arctic Council working group on Conservation of Arctic Flora and Fauna
CBC	Cross-border cooperation programmes funded under the European Neighbourhood and Partnership Instrument and the European Regional Development fund
CBMP	Circumpolar Biodiversity Monitoring Programme. An international network of scientists, government agencies, Indigenous organizations and conservation groups working together to harmonize and integrate efforts to monitor the Arctic's living resources.
CBSS	Council of the Baltic Sea States
CCS	Carbon Capture and Storage
CleanSeaNet	Near-real-time satellite-based oil spill and vessel monitoring service

Acronym	Definition
CLEAR	Climate Change, Environmental Contaminants and Reproductive Health (collaborative research project supported by FP7)
CPAR	Standing Committee of Parliamentarians of the Arctic Region
DAMOCLES	Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies (collaborative research project supported by FP6)
EBRD	European Bank for Reconstruction and Development
EEA	European Environment Agency
EEAS	European External Action Service
EIDHR	European Instrument for Democracy and Human Rights
EMSA	European Maritime Safety Agency based in Lisbon, Portugal
EMSO	European Multidisciplinary Seafloor Observatory
ENPI	European Neighbourhood and Partnership Instrument
ENRTP	A programme for external cooperation to promote environmental and sustainable management of natural resources, including energy. In the world and especially in developing countries.
EPPR	Arctic Council working group on Emergency Prevention, Preparedness and Response
ERDF	European Regional Development Fund
ERICON-AB	The European Polar Research Icebreaker Consortium Aurora Borealis (research infrastructures integrating activity supported by FP7)
ESA	European Space Agency
ESFRI	European Strategy Forum on Research Infrastructures
ESONET	European Seafloor Observatory Network
ETC	European Territorial Cooperation
EUROBASIN	European Basin-scale Analysis, Synthesis & Integration (collaborative research project corresponding to the European branch of the international project <i>Basin-scale Analysis, Synthesis and Integration</i> . Supported by FP7.)
EuroSITES	Integration and enhancement of key existing European deep-ocean observatories (research infrastructures project supported by FP7)

Acronym	Definition
EuRuCAS	European-Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research (international research cooperation action supported by FP7)
FP6	Europe's Sixth Framework Programme for sixth framework programme of the European Community for research, technological development and demonstration activities, covering the period 2002-2006
FP7	Europe's Seventh Framework Programme for Research and Development, covering the period 2007-2013
GEO	Intergovernmental Group on Earth Observations
GEOSS	Global Earth Observation System of Systems, coordinated by the intergovernmental group GEO
GHG	greenhouse gases
GLONASS	A satellite navigation system operated by the Russian Federal Space Agency.
GMES	Global Monitoring for Environment and Security is the European Earth monitoring programme that allows for the collection, assimilation and production of information about planet Earth's physical, chemical and biological systems.
GPS	The Global Positioning System (GPS) is the United States space-based global navigation satellite system (GNSS)
HERMES	Hotspot Ecosystem Research on the Margins of European Seas (collaborative research project supported by FP6)
HERMIONE	Hotspot ecosystem research and Man's impact on European seas (collaborative research project supported by FP7)
HYPOX	<i>In situ</i> Monitoring of Oxygen Depletion in Hypoxic Ecosystems of Coastal and Open seas, and Land-locked Water Bodies (collaborative research project supported by FP7)
Ice2sea	Estimating the Future Contribution of Continental Ice to Sea-level Rise (collaborative research project supported by FP7)
ICOS	Integrated Carbon Observation System
IMHAP	The Northern Dimension Partnership in Public Health and Social Well-being Task Group on Indigenous Mental Health, Addiction and Parenting
IMO	International Maritime Organisation

Acronym	Definition
INSPIRE	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community
INTERACT	International Network for Terrestrial Research and Monitoring in the Arctic (networking action supported by FP7)
IPCC	Intergovernmental Panel on Climate Change
IPCC AR5	IPCC's Fifth Assessment Report
LRIT	Long Range Identification and Tracking. A system allowing ships to report their position by satellite.
LRTAP	Convention on Long-Range Transboundary Air Pollution
NASCO	North Atlantic Salmon Conservation Organization
NCM	Nordic Council of Ministers
NDEP	Northern Dimension Environmental Partnership
NDI	Northern Dimension Institute
NDPC	Northern Dimension Partnership on Culture
NDPHS	The Northern Dimension Partnership in Public Health and Social Well-being
NDPTL	The Northern Dimension Partnership on Transport and Logistics
NEAFC	North East Atlantic Fisheries Commission
NORDREG	Northern Canada Vessel Traffic Services Zone
OCT	Overseas Countries and Territories
OCTA	Overseas Countries and Territories Association
OGP	The International Association of Oil & Gas producers
OSPRAG	UK's Oil Spill Prevention and Response Advisory Group
PAGE21	Changing Permafrost in the Arctic and its Global Effects in the 21st Century (collaborative research project supported by FP7)
PAME	Arctic Council working Group for Protection of the Marine Environment
PCW	Polar Communications and Weather satellite. A potential new Canadian space mission called which would provide 24/7 two-way

Acronym	Definition
	communications capability to the Canadian north and near-real time meteorological information products about the north to government users throughout Canada
PRETEAR	Preparation for Threats to Environments in Arctic Regions. Project co-funded by the EU's Civil Protection Financial Instrument
RAIPON	Federation of Arctic Indigenous Peoples of the North
RECONCILE	Reconciliation of Essential Process Parameters for an Enhanced Predictability of Arctic Stratospheric Ozone Loss and its Climate Interactions (collaborative research project supported by FP7)
SafeSeaNet	A European Platform for Maritime Data Exchange between EU Member States' maritime authorities, and including the European Economic Area States
SAO	Senior Arctic Officials
SAON	Sustaining Arctic Observing Networks
SAR	Search and Rescue
SCPAR	Standing Committee of Parliamentarians of the Arctic Region
SEARCH DAMOCLES	for SEARCH for DAMOCLES (S4D) is a joint initiative designed to bridge two independent Arctic research programmes, SEARCH (USA) and DAMOCLES (EU) (networking activity supported by FP6).
SEIS	Shared Environmental Information System
SIOS	Svalbard Integrated Arctic Earth Observing System
STCW	Standards of Training, Certification and Watch-Keeping for mariners
TACIS	TACIS is an abbreviation of "Technical Assistance to the Commonwealth of Independent States", a programme implemented by the European Commission to help members of the Commonwealth of Independent States (as well as Mongolia), in their transition to democratic market-oriented economies.
TEN-T	Trans European Transport Networks
THC	Atlantic thermohaline circulation
THOR	Thermohaline overturning - at risk? (collaborative research project supported by FP7)
UNCLOS	The United Nations Convention on the Law of the Sea

Acronym	Definition
UNFCCC	United Nations Framework Convention on Climate Change
UNECE	United Nations Economic Commission for Europe. It is one of five regional commissions of the United Nations.
UNGA	United Nations General Assembly
WWF	World Wildlife Fund

ANNEX I

Key research projects with an Arctic dimension (2008-2012)

Seventh Framework Programme Grants to collaborative research projects with an Arctic dimension, started and/or ongoing 2008-2012

Grant	Project Title	Start /End	EU Contribution (€million)	Project Objectives
ACCESS	Arctic Climate Change, Economy and Society	2011-2015	11.0	ACCESS will assess climate change impacts on key economic sectors (maritime transport, fisheries, tourism and resource extraction) and how the development of these sectors could affect the Arctic environment and climate feedbacks. It will produce scenarios to assist policy makers in their strategic choices. The project will also consider Arctic governance issues, including the United Nations Convention for the Law of the Sea framework. www.access-eu.org
ACOBAR	Acoustic Technology for Observing the interior of the Arctic Ocean	2008-2012	3.0	ACOBAR has developed an observation system for environmental monitoring of the Arctic Ocean using underwater acoustic methods. http://acobar.nersc.no
ArcRisk	Arctic Health Risks: Impacts on health in the Arctic and Europe owing to climate induced changes in contaminant cycling	2009-2013	3.5	ArcRisk seeks to understand a) what influence climate change is having on the long-range transport of contaminants; b) how contaminants travel through the food web; and c) what impact this is having on the health of human populations, including Arctic populations. This project is coordinated by the Arctic Monitoring and Assessment Programme, a working group of the Arctic Council. www.arcrisk.eu
ATP	Arctic Tipping Points	2009-2012	5.0	ATP has identified and assessed potential critical thresholds at which minor climate change driven perturbations can irreversibly change the Arctic marine ecosystems. www.eu-atp.org
CLEAR	Climate Change, Environmental Contaminants and Reproductive Health	2010-2014	2.4	CLEAR is investigating the possible impact of global climate change on reproductive health in the Arctic and in two local European populations. The key questions it addresses are: a) how may climate change impact on human exposure to widespread environmental contaminants; and b) how may contaminants impact on occurrence of reproductive disorders as sensitive indicators of health. www.inuendo.dk/clear
DAMOCLES	Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies	2005-2010	16.5	DAMOCLES shed light on the changes in sea-ice, atmosphere and ocean of the Arctic and sub-Arctic domain. It improved modelling and identified appropriate adaptation strategies. www.damocles-eu.org

Grant	Project Title	Start /End	EU Contribution (€million)	Project Objectives
EPOCA	European Project on Ocean Acidification	2008-2012	6.5	EPOCA improved our understanding of past and present spatio-temporal changes of ocean acidification; of the impacts of ocean acidification on marine biota; and of future changes in ocean chemistry and biogeochemical feedbacks in terms of hotspots, uncertainties, thresholds. It shed light on tipping points. www.epoca-project.eu
EUROBASIN	European Union Basin-scale Analysis, Synthesis and Integration	2010-2014	7.0	EUROBASIN seeks to understand the potential impacts and feedbacks of global change and anthropogenic forcing on the sea ecosystems of the North Atlantic, including the associated Arctic shelf, with a view to furthering our capacity to manage these systems in a sustainable manner. EURO-BASIN is part of a multidisciplinary international effort (BASIN) linked with similar activities in the US and Canada. www.euro-basin.eu
HERMIONE	Hotspot Ecosystem Research and Man's Impact on European Seas	2009-2012	8.0	HERMIONE is advancing knowledge on the functioning of EU deep-sea ecosystems and their contribution to the production of goods and services. It considers the combined effects of climate change and human activities such as fishing, resource extraction, seabed installations and pollution. It comprises a component looking at the impact of global warming in the Arctic on deep sea ecosystems. www.eu-hermione.net
HYPOX	In situ monitoring of oxygen depletion in hypoxic ecosystems of coastal and open seas, and land-locked water bodies	2009-2012	3.5	HYPOX monitors oxygen depletion and associated processes in aquatic systems due to global warming and eutrophication in open waters and land-locked systems. The Arctic is one of several regions studied. This project improves our capacity to monitor oxygen depletion globally by implementing reliable long-term sensors to different platforms for <i>in situ</i> monitoring. It will use a state of the art data centre and comply with GEOSS standards. www.hypox.net
Ice2sea	Estimating the future contribution of continental ice to sea-level rise	2009-2013	10.0	Ice2sea will enhance global sea-level rise projections by improving the understanding of the interactions between climate, ice and oceans. Specifically, it studies the contribution that the loss of continental glaciers and ice sheets stands to make to sea level rise, thus reducing a key source of uncertainty in the projections. This project will help to build a scientific foundation for policy development and decision-making in this area. www.ice2sea.eu
PAGE21	Changing Permafrost in the Arctic and its Global Effects in the 21st Century	2011-2015	6.9	PAGE21 will improve the understanding of the processes and dynamics affecting the size of the Arctic permafrost carbon and nitrogen pools, and assess their vulnerability to climate change. It will improve datasets and modelling, and further the understanding of uncertainties and of feedbacks involving permafrost and global change. It will also explore stabilisation scenarios. www.page21.eu

Grant	Project Title	Start /End	EU Contribution (€million)	Project Objectives
RECONCILE	Reconciliation of essential process parameters for an enhanced predictability of Arctic stratospheric ozone loss and its climate interactions	2009-2013	3.5	RECONCILE improves our understanding of key processes dominating polar ozone loss. Through direct implementation of a chemistry climate model (CCM), the project strengthens our predictive capabilities in terms of feedbacks between stratospheric ozone and global climate change, in particular in the polar regions. www.fp7-reconcile.eu
SEARCH for DAMOCLES	Study of environmental Arctic Change - Developing Arctic Modelling and observing capability for long-term environment studies	2006-2010	0.6	This was a joint initiative designed to foster a partnership between two major Arctic research programs, SEARCH (USA) and DAMOCLES (EU) to exploit synergies on account of their shared scientific objectives. The latter included large-scale observations of the Arctic Ocean sea-ice cover, circulation and atmospheric processes, integration and assimilation of observations with models, assessment of environmental and human impacts. www.damocles-eu.org
THOR	Thermohaline overturning – at risk?	2008-2012	9.3	THOR combines modelling with observations to provide improved quantification of the risk, time horizon and possible scenarios for Thermohaline Circulation breakdown, and related abrupt climate change for Europe and the Arctic/sub-Arctic region in the medium term. THOR will also develop strategies for the establishment of a medium term climate forecast service for Europe to assist planning in both the public and the private sectors. www.eu-thor.eu

Seventh Framework Programme Grants to projects building capacity for research on the Arctic, started and/or ongoing 2008-2012

Grant	Project Title	Start/End	EU Contribution (€million)	Project Objectives
EISCAT_3D_2	Upgrade of the EISCAT facility for ionospheric and space weather research	2010-2014	4.5	EISCAT_3D is a next generation incoherent scatter radar system for high-latitude atmosphere and geo-space studies. The facility will consist of multiple large phased-array antenna transmitters/receivers in three countries, comprising tens of thousands of individual antenna elements. The new radars will collect data from the upper stratosphere to the magnetosphere and beyond. www.eiscat.se
EMSO	European Multidisciplinary Seafloor Observatory	2008-2012	3.9	EMSO establishes the legal, financial and governance framework of a new European Multidisciplinary Seafloor Observatory as identified in the ESFRI roadmap. This preparatory phase project will aim at the foundation of a European Research Infrastructure Consortium as the legal entity that will manage EMSO distributed research infrastructures. www.emso-eu.org
ERICON-AB	The European polar research icebreaker consortium Aurora Borealis	2008-2012	4.5	ERICON-AB is generating the strategic, legal, financial and organisational frameworks as a basis for developing and implementing the European polar research icebreaker Aurora Borealis. www.eri-aurora-borealis.eu
ESONET	European Seas Observatory Network	2007-2011	7.0	ESONET is creating an organisation capable of implementing, operating and maintaining a network of ocean observatories in deep waters around Europe. It makes continuous real-time observations over a range of time scales. www.esonet-noe.org
EuroSITES	Integration and enhancement of key existing European deep-ocean observatories	2008-2011	3.5	EuroSITES constructs a coherent European network of deep ocean observatories and perform a small number of specific science missions to inform future improved and novel monitoring capability. www.eurosites.info
EuRuCAS	European-Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research	2012-2015	2.0	EuRuCas enhances cooperation on Arctic research between the EU and Russia by providing access for EU researchers to work at the Nansen International Environmental and Remote Sensing Centre (NIERSC) established in St. Petersburg, Russia. Joint studies to focus on climate and environmental changes in the Arctic and Sub-Arctic in the 21st century and their socio-economic impacts will also be supported. Website forthcoming.

Grant	Project Title	Start/End	EU Contribution (€million)	Project Objectives
ICOS	Integrated Carbon Observing System	2008 - 2012	4.3	<p>ICOS provides the long-term observations required to understand the present state and predict future behaviour of climate, the global carbon cycle and greenhouse gases emissions. It tracks carbon fluxes in Europe and adjacent regions by monitoring the ecosystems, the atmosphere and the oceans through integrated networks. Data from several observatories are already available.</p> <p>ICOS monitors from observatories in Northern Eurasia feedbacks specific to high latitudes. www.icos-infrastructure.eu</p>
INTERACT	International Network for Terrestrial Research and Monitoring in the Arctic	2011-2014	7.3	<p>INTERACT is building a circum-arctic network of terrestrial field bases for enhanced capacity for research and monitoring in the Arctic. It fosters access to field stations and data. It has already established equipment to measure biospheric feedbacks at many sites and awarded hundreds of researchers access to 20 research stations. Further, methods for networking sensors and data management have been surveyed. Improved cooperation on biodiversity issues is being sought. www.eu-interact.org</p>
SIOS	Svalbard Integrated Arctic Earth Observing System	2010-2013	4.0	<p>SIOS will provide a unique assembly of observational infrastructures to address the whole spectrum of the natural coupled system in the European Arctic. It will thus be a crucial infrastructure to verify predictions of coupled Arctic, and – ultimately – Earth System Models, either directly or indirectly through validation of satellite observations in this northernmost region. www.sios-svalbard.org</p>

ANNEX II

European Territorial Cooperation (ETC) programmes financing projects in the Arctic and sub-Arctic regions 2007-2013

- Botnia-Atlantica programme,
<http://www.botnia-atlantica.eu>
- Interreg IVA North programme,
<http://www.interregnord.com/en/projects.aspx>
- Interreg IVA Sweden-Norway programme,
<http://www.interreg-sverige-norge.com>
- Northern Periphery Programme,
<http://www.northernperiphery.eu/en/projects/main/>
- Baltic Sea Region Programme,
http://eu.baltic.net/Project_Database.5308.html?&&contentid=70&contentaction=sing

ANNEX III

EU financed joint EU-Russia projects in the energy sector, implemented in 2008 – 2010

- Study on the impact of the financial crisis on the EU-Russia energy cooperation (2009 – 2010, Common Space Facility);
- Study on Renewable Energy Policy and the Rehabilitation of Small Scale Hydro-power Plants (2007 -September 2009, TACIS programme);
- Support to the creation of an energy efficiency management system in the Russian Federation (until December 2009, Common Space Facility);
- Energy efficiency investment projects in Russian regions (2008-2010, TACIS);
- Project "EU-Russia cooperation on energy efficiency indicators in the Russia Federation" (February 2010 – February 2011, Common Space Facility)
- Rehabilitation of District heating in Kaliningrad (Northern Dimension Environment Partnership Project) is ongoing to support investments of the EBRD;
- Several interregional cooperation projects such areas like: energy efficiency in buildings, district heating; sustainable energy management on municipal level, planning and integration of energy efficiency and renewable energy technologies in historic centres etc.