WMU Journal of Maritime Affairs, Vol. 6 (2007), No.2, 241–247

Climate Change and the Future Maritime Policy for the EU

Martin F. Diez-Picazo*

Maritime Policy Task Force, European Commission

Abstract

A cross-cutting Maritime Policy can ensure that climate change threats and challenges in regards to seas and oceans are dealt with in a wide policy framework that takes into account the impacts that climate change may have on other sectors and vice versa.

This article raises some issues in which the maritime policies could be affected by the effects and impacts of climate change and how an integrated approach to these issues could help to better manage them. This reflection is done in the context of the consultation process opened by the European Commission Green Paper on Maritime Policy.

Key words: Climate Change, European Commission, Green Paper, Maritime Policy

1 Background

Climate change is happening, will continue beyond this century and is one of the biggest challenges facing mankind in the coming years.

Within the last two decades wide scientific evidence has been collected about environmental changes which are happening at all scales, often with deep impacts on seas and coasts. While oceans and seas play a key role in climate and weather patterns acting as climate regulators, seas and coastal areas are particularly sensitive to climate variations.

The marine environment is already facing changes, both at global and regional level, in regards to temperature, salinity, sea level, acidification of the waters or biodiversity and species regimes that will affect maritime activities, economy and industries. Coastal defence, harbours, tourism or fishing activities will be significantly affected by sea level rising, as well as by increasing effects of floods, erosion, extreme weather events or eutrophication.

The effects of climate change in the Arctic deserve special consideration. On average, climate warming of the Arctic region is two or three times more marked than

* Maritime Policy Task Force, European Commission, J-99 07/58, 1049 Brussels, Belgium, email: martin.fernandez-diez---picazo@ec.europa.eu

NOTE: This article, prepared on the occasion of the preparatory workshop of the conference on »Impacts of climate change on the maritime industry«, expresses the personal opinion of the author. The ideas and statements contained on it can only be considered as individual and are not representative of any organism or institution within the European Commission framework.

 ISSN: 1651-436X print/1654-1642 online

elsewhere on the planet and the Arctic pack ice has already shrunken by 15 to 20% over the past 30 years.

2 Present Situation

Climate change is a reality and its effects will be felt worldwide. In Europe, the EU has for several years now been committed to deal with this issue both internally and internationally and has placed it high on the Union's agenda. The European climate change policy, taking action to curb greenhouse gas emissions and creating conditions conducive to research and innovation, the EU Energy Strategy adopted by the European Council last March and the Green Paper on adaptation polices released in July are corner stones of the EU strategy addressing climate change.

Oceans, seas and coasts deserve and receive a special attention in the context of this broader EU strategy. With 185.000 km of coastline, 50% of its population living in the first 50 km of the coast strip and so many key sector policies affected (transport, research, environment, regions, energy, fisheries, external relations, industry or tourism), the links between climate change and maritime issues are being carefully considered.

Such is the case of the Commission's Green Paper "Towards a future Maritime Policy for the Union: a European vision for the oceans and seas," adopted on 6 June, 2007. This document seeks, in the wider maritime sphere, to stimulate growth and jobs under the Lisbon agenda in a sustainable manner, paying special attention to climate change.

Many maritime aspects are affected by the threats and challenges of climate change and need to be fully considered from a cross-cutting approach and a holistic perspective. Only a new vision and an integrated maritime policy can deliver the needed type of response to face these challenges and to overcome these threats. However, so far maritime policies have developed separately and few have examined these policies from a holistic approach.

3 Likely Future Developments

This article raises some issues in which the maritime policies could be affected by the effects and impacts of climate change and how an integrated approach to these issues could help to better manage them. This was done in the context of the consultation process opened by the Green Paper on Maritime Policy. The Green Paper on a future Maritime Policy examined the state of the oceans and seas and the policies dealing with them and launched a wide and intensive public debate on a future Maritime Policy for the EU that treats the oceans and seas in a holistic way, focusing mainly on matters where EU action is required because it adds value to national and local action.

In this light, the Green Paper on Maritime Policy acknowledged the need for urgent, planned and consistent action to curb climate change effects, as it is stated in its chapter 2.4. ("Innovation under changing circumstances") and in its Background Document nº 7 that specifically dealt with climate change issues in the sphere of maritime

affairs. The Green Paper stated that "mitigating climate change is the key to protecting our economy… It is thus essential that Europe continue to play a leadership role on the world stage in tackling climate change."

4 Recommendations

Climate systems are intimately linked to the oceans and seas. Strong efforts must be made to improve the knowledge of these links, and to feed this knowledge into policy-making. The Maritime Policy and the Thematic Strategy for the Protection of the Marine Environment, which is its environmental pillar, must address these challenges and threats and improve the European Union's capacity and ability to deal with them. However, other efforts have to be stepped up at all levels and all Community policies and need to be well co-ordinated.

4.1 Research

There is a clear consensus on the EU need for accurately forecasting climate change and for reducing uncertainties associated with forecasts of possible effects. It is essential to bring forward the introduction of effective climate or weather forecasts which would be of benefit to nearly all economic activities. To this end, deeper research, long-term datasets and high resolution prediction models will help to better know and better predict impacts of climate change.

The enhancement of marine data networks, the promotion of cross-sectoral research projects and the experience acquired from looking at maritime issues from a holistic perspective are fundamental for the right achievement of those goals in the maritime sector. Joint calls on marine research projects in the FP7 context should be applied for climate change studies addressing a complexity of interrelated factors that can not be analysed independently.

A European Marine Observation and Data Network that tackles the question on how the different existing data systems will be coordinated and will not overlap; the promotion of networks to exploit, exchange and consolidate knowledge and experience in many different sectors, but more specifically in the context of climate change research and adaptation projects; a stronger coordination of all the marine research institutions across Europe, pursuing better development and enhancement of marine research activities, in the same direction that the join calls for the FP7 or the recent creation of a marine research coordination function within European Commission's DG RTD could help to improve our knowledge of climate change and provide a better advise to decision-making processes or the implementation of adaptation policies.

4.2 Coastal Adaptation

Britain has doubled spending on flood and coastal defence management to about 1 billion Euros a year. The Netherlands calculates that, to maintain a high level of protection of their coasts, the country would have to commit about 0.2% of its GDP annually, about one billion Euros. In Germany, the assessments indicate an expenditure of 4 millions Euros per kilometre of dike. The economic impact of rising sea levels

and increased intensity and frequency of extreme weather events at the coast needs to be studied. These costs may have an impact on the Community's budget which, traditionally through the structural funds, has supported flood protection measures. If this issue is not addressed pro-actively, flood risks will become a growth impediment to the economy in coastal regions by increasing the costs of the insurance and re-insurance industry and by reducing the willingness of investors.

In this framework, further studies on the present and future plans of coastal regions to strengthen coastal protection, the incorporation of climate change factors in their elaboration, the environmental and economic costs involved of these plans, the impacts they may have on the community budget and on the economy of coastal regions need to be carried out at Community level.

4.3 Tools

The promotion of coherent and integrated planning and management tools of the maritime and coastal areas can provide the appropriate instruments to better manage activities that compete for the same space while, at the same time, provides the needed provision to incorporate climate change adaptation in the planning. In this regard, a new maritime spatial planning framework could be analysed at EU level, while, at the same time, the important role of networks of exchange of knowledge and best practices in ICZM that currently exist is promoted.

4.4 International Context

Climate change needs to be tackled at a global level, both to provide solutions and to face impacts and effects. To this end, the cooperation processes and dialogues that exist in the international context need to be enhanced to favour the inclusion of maritime issues (including climate change) in the external relations of the EU and in its contacts with its neighbours.

As it has already been pointed out, the Arctic has a fundamental implication in the control of global climate while at the same time suffers dramatically its impacts. The effects of climate change in the Arctic take place much quicker than in other parts of the planet. Shrinking of ice caps provides many opportunities but their impacts and implications have to be properly addressed.

Since the Arctic is the "laboratory" for the study of climate change much more attention should be given to research activities in the Arctic. Safeguarding the Arctic region's climate is a very important part of averting global climate change. It is therefore at the centre of the EU strategy to combat climate change and will become a major challenge for the EU Maritime Policy.

4.5 Energy

The dependency on energy in a challenging context of climate change means that the role that oceans and seas can play in ensuring the competitiveness, sustainability and security of Europe's energy supplies deserves attention.

The EU Energy Strategy, adopted by the European Council, set a target of 20% for the share of energy produced from renewable sources by 2020. In this light, the offshore energy sector envisages a dramatic increasing in offshore energy production from renewable sources such as wind, waves or tides. Planning tools and an appropriate policy framework will need to be provided to give certainty to these investments. Deeper research on the technology and materials of offshore installations, the connections to the electric grid or the possibility to use them for other maritime interests such as the protection of the marine environment or aquaculture production should be considered as a cross-cutting issue between actions aimed to reduce climate change and the maritime policy. The newly established Wind Technology Platform and the forthcoming "Strategic Energy Technology Plan" planned for the end of 2007 will help in the large-scale development of offshore wind power in Europe.

The Communication "Limiting Global Climate Change to 2 degrees Celsius" identifies carbon capture and storage in the seabed as an important element in the fight against climate change, having the potential to halve the European Union's carbon emissions by year 2050. The storage of CO_2 in deep geological formations (e.g. underground aquifers, oil and gas fields, saline formations, etc) and the injection of CO_2 into methane hydrate layers under the seabed have to be carefully evaluated and the solutions provided to promote it need to be based on the best scientific advice. A European Maritime Policy will play an important role here by providing the necessary policy framework and promoting the required research on the safe and sustainable development of this technology within the seabed.

4.6 Shipping

Shipping contributes to climate change mainly through ships' exhaust emissions, an issue that needs to be adequately addressed. Initiatives like the CleanShip Project need to be promoted in order to improve knowledge and to develop cutting-edge technology aimed at reducing air pollution from ships, at improving efficiency and at enabling the use of alternative fuels.

The attractiveness of supplying electricity to ships from shore while these are in port could be increased, thus allowing ships to turn off their engines. This would be of interest to the many port regions where the contribution to air pollution from ships can be up to 80% of total for a number of substances. How to support such installations and move towards harmonisation of grid connections for ships are points that need further discussion.

4.7 Fisheries

Similar to most other human activity, fisheries interact with climate in two ways: industrialised fisheries contribute to climate change through the emission of greenhouse gases and fisheries are affected by climate change because the resource base for fisheries, marine ecosystems, are themselves affected by change. Fisheries can contribute to mitigation of climate change by reducing its consumption of fossil fuels and fisheries need to adapt to climate change.

A global analysis of fuel consumption concluded that fisheries account for about 1.2% of global oil consumption and use on average 640 litres of fuel per ton of fish landed. A reduction in fleet capacity would result in increased energy efficiency, not to mention healthier stocks. The fact that fuel for fishing vessels is exempted from taxes has not encouraged energy efficiency. There is the potential to achieve energy savings of up to 20% by improving vessel and gear design and operation. The Commission will shortly set up a website for the collection and dissemination of updated information on energy efficiency in fisheries.

On the other hand, climate change affects fisheries in several ways. Some are fairly direct, such as a change in distributions of fish populations following changing sea temperatures, but there are also many indirect effects resulting from changes in the availability of food organisms, changed oceanographic conditions and increased acidity. These indirect effects may amount to regime shifts where the basic fabric of the ecosystem changes and the conditions for different species change much more than expected from temperature changes alone. Such effects are presently poorly known and need to be further analysed.

4.8 Tourism

Climate change has also dramatic effects on the tourism industry, in particular on maritime and coastal tourism. Recent studies and press releases indicated the change of tourism patterns from the South to the North, the evolution of the North Atlantic and the Baltic to a Riviera and the spread of droughts and lack of water in the south of Europe. The future maritime and tourism policies need to specifically address climate change issues and provide the necessary tools and guidelines for their sustainable development, always taking into account climate change issues.

5 Conclusion

These points of debate and many others concerning the different maritime policies and activities that take place in the European seas and oceans were raised in the Green Paper on a Future Maritime Policy for the EU and in its background papers in order to be used as source of inspiration of an extensive debate among all maritime stakeholders, member states, organisations and citizens.

In the framework of the EU climate change and energy strategies, the forthcoming EU Maritime Policy and the Marine Strategy Directive will cope with climate change issues in the marine environment, mainly through ensuring sustainable development of maritime activities, fostering maritime research and knowledge and implementing programmes and plans factoring in climate considerations and allowing adaptation.

References

Comission of the European Communities (CEC). 2006. *Towards a future Maritime Policy for the Union: a European vision for the oceans and seas.* Green Paper, SEC (2006) 689. Brussels: CEC.

—-. 2006. *Marine and coastal dimension of climate change in Europe*. A report to the European Water Directors. Institute for Environment and Sustainability. Joint Research Centre. Brussels: CEC.

—-. 2007. *Adapting to climate change in Europe – options for EU action.* Green Paper from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, SEC(2007) 849. Brussels: CEC.

—-. 2007. *Projection of Economic impacts of climate change in Sectors of the European Union based on boTtom-up Analysis*. PESETA Project. Institute for Environment and Sustainability. Joint Research Centre. Brussels: CEC.

European Environment Agency (EEA). 2006. *The changing faces of Europe's coastal areas.* EEA Report no. 6/2006. Copenhagen: EEA.

—-. n.d. Corine Land Cover Database. http://dataservice.eea.europa.eu/dataservice/metadetails.asp?id=821.

European Science Foundation (ESF). 2007. *Impacts of Climate Change on the European Marine and Coastal Environment. Ecosystems Approach.* Marine Board Position Paper 9. Strasbourg: ESF.

Marine Climate Change Impacts Partnership (MCCIP). 2006. *Marine Climate Change Impacts*. Annual Report Card 2006. Lowestoft: MCCIP.

Schubert, R., H.-J. Schelinhuber, N. Buchmann, A. Epiney, R. Griesshammer, M. Kulessa, D. Messner, S. Rahmstorf, and J. Schmid. 2006. The future Oceans – Warming Up, Rising High, Turning Sour. Special Report. Berlin: German Advisory Council on Global Change.

Stern, N. 2007. *The Economics of Climate Change. The Stern Review.* New York: Cambridge University Press.