# CERTIFICATION OF SEA PORT FACILITIES IN THE MEDITERRANEAN

## PROJECT CONCEPT

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*The present paper represents the views of WE 2C only.*

### PREAMBLE

The prevention of pollution by oily residues and cargo residues generated on board ships requires the development and operation of adequate port or terminal reception facilities.

Where port or terminal reception facilities for oily and cargo residues are still inadequate, there is a pressing need to improve existing facilities or to establish new ones to meet the demand for the discharge of these residues generated on board ships.

Once oily residues and cargo residues are collected, it is important to manage these residues on land in a proper way. This requires the existence of adequate waste treatment facilities.

It is proposed to develop tools that would enhance the level of transparency, predictability, certainty and transparency in the chain of events from the moment residues generated on board ships are discharged or delivered to an adequate port or terminal reception facility until these materials , qualified as waste, are recycled or disposed of on land. Such tools would include the certification of port facilities, the development of an international standard and improving traceability and information flow regarding the fate of residues once they are discharged in port facilities until they are treated, recycled or disposed of on land.

### BACKGROUND

Over 90% of world trade is carried by the international shipping industry. The world fleet is composed of more than 80 000 vessels of which around 50,000 merchant ships trade internationally. The fleet of oil tankers and dry bulk carriers make up more 70% of the total world fleet. Every ship generates residues during its operation or when transporting cargoes.

The principal categories of residues generated on board ships include: sludge, oily tank washings or slops, garbage from the crew and cargo residues. Depending on its size, a ship can generate a few hundreds tons of oily residues (slops) during its voyage after settling and getting rid of the water through the oil discharge monitoring equipment.

Sometimes, the slops, without the water, would be loaded on top with the next cargo of a crude carrier and therefore there would be no slops to deliver ashore.

The oily effluents originate from the use of fuel (heavy oil bunkers or marine diesel fuel), lubrication for the ship's engine and machinery and the transport of cargo. Oil-water mixtures must be kept on board ships and should be discharged to a port reception facility (when it should not be discharged at sea). Port States are required to provide these facilities and ensure that their operation does not impose undue delays on the ship's voyage.

Many States do not provide these facilities but have private operators or port authorities to ensure such provision. Under MARPOL Annex I (oily residues), ships are required to keep a detailed record of all movements of oil and oily residues on the ship and to the sea or port reception facilities.

Tankers are required to keep a log of all product movement. This information provides a written record of the storage, processing and discharge of oil and oil-water mixtures. Port reception facilities may not accept all types of oily residues (sludge, slop tank oils, etc.), may not be available or accessible during the tight schedule many ships must keep to in port. This could lead to situation where ships cannot or are unwilling to discharge their residues ashore.

Unlike oil, noxious chemical compounds are not generated in the daily operation of a ship. MARPOL Annex II (cargo residues) discharge requirements are differentiated according to the toxicity of chemicals involved. The washing of tanks containing hazardous substances shall take place in port and the wash water discharged at a reception facility.

Annex I slops bear an economic value while Annex II residues often ( there are cases where the receiver can reclaim some cargo washings) represent a cost. Normally, Annex II residues require adequate and qualified or registered disposal operators. Usually, Annex II residues are collected and managed by waste processors or by the cargo receivers on land.

The management of residues generated on board ships is a complex undertaking. It requires a workable sea-land interface. Many stakeholders are involved ( eg; Port State, port authority, port operators, port and terminal reception facilities, port waste management, ship waste handlers and collectors, shipping agents, Flag States, charterers, shipowners, enforcement authorities, environmental authorities, waste processors)

**THE CONCEPT**

In order to close the loop and address the sea-land interface regarding residues generated at sea and their management on land, it would be useful to develop tools that would guarantee that, once oily and cargo residues are discharged or delivered to a port or terminal reception facility, their subsequent management as waste would pursue on land the objectives MARPOL has set for the marine environment in terms of safety and protecting human health and the environment. It would lead to an extension of the principles and intent of international environmental regulations governing shipping by applying the principles and criteria of Environmentally Sound Management currently in use when managing waste on land. This would enhance the relationship, interlinkages and coherence between the goals of MARPOL and those of the Basel Convention.

## PURPOSE

The inadequacy of some port reception facilities or offshore reception terminals is a significant contributing factor to illegal discharge of oil at sea. It can also lead to pollution on land through improper handling of slops and residues. Such inadequacy is still common in many places in the world.

Also, ports may refuse to accept slops or residues, or ships may find it too expensive or time-consuming to discharge their residues at shore.

Once residues are collected and discharged or delivered in a port or terminal facility, often their traceability on land is inadequate. There is simply no common systems in place for monitoring their movements and , in many cases, no systems for monitoring environmental performance and compliance. Several countries have taken measures to ensure that residues generated on board ships should be managed in an environmentally sound way. But, globally, this is not the case.

The purpose is to improve the way waste is managed once a ship, which is in full compliance with current international maritime and environmental regulations, discharges or delivers its slops and cargo residues. This implies that there should be a corresponding existence of adequate, viable and accountable port reception facilities or terminals and storage, recycling or waste disposal facilities, and effective Port State contol agencies (or governmental enforcement agencies).

Any system that could be designed to improve transparency in the management of residues generated at sea would need to take into account the maritime and waste management economic context. In a situation of tight market, any system should aim at efficiency and should not overburden ship crew with administrative tasks nor delay operation of ships unecessarily.

## THE TOOLS

The tools that could be designed and developed to improve the situation would be of preventative nature and would use information technology advances. They could be split in three mutually-supportive pillars:

### *Certification*

The goal would be to provide shipowners, charterers, traders and other maritime operators with an additional opportunity to comply with international maritime and environmental regulations applied to shipping.

The existence of adequate port reception facilities or terminals is a necessary pre-condition for ensuring compliance with MARPOL' s Annexes I and II obligations.

The idea is to design and develop a certification scheme for facilities collecting ship's residues. The certification system would be based on the identification and evaluation of the infrastructure, logistics and know-how at port facilities and terminals to handle MARPOL Annexes I and/or II residues adequately and in compliance with MARPOL rules and procedures. It would provide assurances that ship's residues collected in a certified port reception facility would be adequately handled and managed on land in such a way as

to protect human health and the environment.

One possibility would be to initiate a voluntary scheme where an international independant certifying organisation (preferably with maritime competence) could certify a port reception facility that would meet the technical, institutional, management and environmental standards developed by the International Maritime Organisation, the European Maritime Safety Agency, the European Commission and others.

***International standard***
There would be a need to develop a level-playing field at the international level regarding the adequacy of port reception facilities and terminal to comply with MARPOL. For this purpose one may consider the development of an international standard, or standards, for port reception facilities and terminals handling MARPOL Annex I and/or Annex II residues..

***Traceability***
The other solidarity tool that could be designed and developed would lead to a better and more transparent process in following what is happening on land once residues are discharged or delivered in a port reception facility or terminal and their fate as waste on land.

## ECONOMIC AND SOCIAL PRESSURE ON THE MEDITERRANEAN SEA

Despite nearly 30 years of international efforts to protect the sea, the Mediterranean ecosystems remain fragile and continue to deteriorate as economic and social pressure increase on both the terrestrial and marine environment.

The main source of pressure comes from polluting industry, dumping of oily residues into the sea or oil pollution, unsound management of households waste, inadequate wastewater treatment facilities, agriculture run-offs, uncontrolled urban and coastal development, increased coastal tourism, damming and unregulated and unsustainable fishing.

According to the European Environment Agency (EEA Report No 5/2005), only 69 % of the 601 cities above 10.000 inhabitants operate a wastewater treatment plant while 21% do not possess such treatment plant. More than 80% of landfills in southern and eastern Mediterranean countries are not monitored.

80% of the contamination load of the Mediterranean Sea originates from land sources. The sea is contaminated or polluted with agricultural pesticide waste, solid hazardous waste, persistent toxic chemicals, airborne particles, pathogens, heavy metals, organic pollutants, oils and radioactive substances; marine litter represents a major and growing problem. The other 20% comes from pollution by ships and other floating structures.

According to REMPEC (www.rempec.org), some 2350 oil spills of unknown origin were detected in the Mediterranean in 2000. The majority of those spills are considered to be illicit discharges. According to the provisions of MARPOL Annex I (Oil) and Annex V (Garbage), the Mediterranean Sea is a Special Area where discharge criteria are very strict because of its oceanographical and ecological conditions and of the importance of sea trafic.

The transboundary environmental problems in the Mediterranean are well documented

through the work undertaken by the European Commission, the United Nations Environment Programme (MAP) and the World Bank., i.e. decline of biodiversity, decline in fisheries, decline in seawater quality, human health risks due to pathogens or viral agents and loss of groundwater.

## ENVIRONMENTAL STRATEGIES IN THE MEDITERRANEAN SEA

One striking factor is that there is no shortage of national, regional and global institutions that have supported environmental programs in the Mediterranean in the last 30 years. The environmental problems are known and documented as well as the possible solutions. But the results do not meet the expectations. Although finance is a limiting factor, international cooperation has not been effective enough.

Major efforts have been undertaken by the riparian States, the European Commission, the United Nations and the World Bank to reduce the major sources of pollution of the Mediterranean Sea. As part of these efforts, the global and regional environmental and maritime agreements have played a central role, especially the Barcelona Convention. The Barcelona Convention was amended in 1995 to include coastal areas. The system was further consolidated through the inclusion of a protocol on land-based sources of pollution. The Strategic Action Program (SAP) adopted in 1997 and the specific National Action Plan developed to support the SAP are tools to assist Parties to implement the protocol on land-based sources of pollution.

The European Commission (www.europa.eu) has developed an environmental strategy called « Horizon 2020 » to protect the Mediterranean in cooperation with the Euro-Mediterranean (Euro-Med) partners. The Euro-Med leaders endorsed the initiative Horizon 2020 in Barcelona in 2007.

Four activities are planned:

- Reduction of the most significant source of pollution with focus on industrial emissions, municipal waste and urban wastewater
- Capacity building to help in the development and enforcement of environmental laws
- Development of research
- Development of indicators to monitor the success of Horizon 2020

As part of Horizon 2020, the Commission together with the European Investment Bank has launched the Mediterranean Hot Spot Investment Program.

The Euro-Mediterranean Partnership is supported by a financial cooperation program called MEDA. MEDA is the principal financial instrument of the European Union for the implementation of Euro-Med. The program offers technical and financial support measures to accompany the reform of economic and social structure in the Mediterranean partners

The European Union has a European territorial cooperation program called MED. Transnational cooperation in the MED program identifies four priorities, namely: innovations, environment (water management, energy efficiency, risk prevention and environmental protection), accessibility (to clean transport and telecommunications services) and sustainable urban development.

The World Bank program METAP- The Mediterranean Environmental Technical Assistance Program - is a partnership program between countries of the Mediterranean Region and multilateral donors. Its main objective is to strengthen the capacity of Mediterranean countries to address common environmental issues. METAP focuses on enhancing policy and legislation tools, water quality and wastewater management, coastal zone management and municipal and hazardous waste management (www.metap.org).

The Investment Fund for the Mediterranean Large Marine Ecosystem Partnership led by the World Bank was approved by the United Nations Global Environment Facility (GEF) Council in 2006. It was followed by the Council's approval of a regional component concerning the implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas, led by UNEP, in 2007. These two complementary components constitute the GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem.

The implementation of the Barcelona Convention and its protocols are central to the development of Horizon 2020. The Convention and its protocols are implemented through the UNEP Mediterranean Action Plan (MAP). The MAP system (www.unepmap.org) includes the Mediterranean Commission on Sustainable Development that elaborated a Mediterranean strategy adopted in Slovenia in 2005. The European Commission forms a joint working group with the MAP Secretariat. The MAP Secretariat has also been designated as the Executing Agency for the regional component of the GEF Strategy.

Additionally, France has launched a major political initiative called Union pour la Méditerranée (UPM). The depollution of the Mediterranean Sea has been identified as a priority domain for concrete projects. There are also numerous cooperative ventures undertaken on a bilateral basis and between regions that include an environmental component.

## PORT RECEPTION FACILITIES IN THE MEDITERRANEAN

REMPEC has carried out significant work recently on the issue of port facilities in the Mediterranean. It made an assessment (2002-2004) of the existing situation and needs of coastal States regarding port reception facilities.

The results for oily residues highlighted that there were still a number of ports or oil terminals in the Mediterranean countries not equipped with adequate reception facilities meeting the needs of ships. This a strategic issue since it is estimated that discharges at sea of oily residues from ships amount to 80 000 to 100 000 tons a year.

Some of the deficiencies identified include:

- Lack of sufficient guidance on the technical requirements for providing adequate reception facilities for the different types of oily residues and cargo residues.
- Lack of capacity on land to recycle or dispose of residues generated on board ships in an environmentally sound way. This is a waste management issue. Often, there is no or inappropriate procedures between the port authority and the waste contractors, refineries or other users of fuel oils to ensure the proper handling and disposal of this waste.
- The cost for the provisions of port reception facilities and waste management, and meeting the requirements for reducing pollution represent a challenge for both ports

and maritime operators. If ports or waste management fees would be too high it may act as a disincentive for ships to discharge their residues or may encourage unscrupulous operators to contravene to the MARPOL Convention obligations.

## PROJECT ORIENTATION

A. Guidance document

As a first step, a guidance document could be developed identifying what should constitute environmentally sound management on land for the different type of MARPOL Annexes I and II residues generated on board ships. Such document should be based on existing good practices and guided by the recommended practices for the waste produced on land that has similar characteristics as the residues generated at sea. This guidance elements could also be the basis for developing environmental performance elements or standards that would be used to certify port facilities.

B. Traceability system

An additional element would be to promote an extended responsibility for environmentally sound management from the originator or generator of ship' s residues to port authorities, contractors operating into the port and waste managers who pick up the residues to be recycled or disposed of on land. The development of a traceability system and improvement of information flow would help public and private operators to monitor the entire life-cycle of the residues generated on board ships.

The objective would be to develop a model traceability system that goes beyond local interest and that would not be resticted to a limited number of economic actors. The idea would be to design a system capable of linking the concerned maritime and land-based stakeholders, through modern communication technology networking tools, to enable them to respond effectively and efficiently to an increased trade between ports in the world. Such system would facilitate operational activities of ships while improving the readiness of ports in receiving oily residues or cargo residues in an adequate manner

It would also provide enhanced assurances that the residues collected would be disposed of soundly and safely on land. A traceability system would support the development of an environmentally sound management certification scheme for sea ports facilities.

Many difficulties could be encountered in ensuring that residues generated at sea are managed on land in an environmentally sound way. There could be difficulties in characterising the nature and properties of slops or cargo residues. Ships may have difficulties to get rid of sludges. There are few feed-backs on difficulties experienced by ships when ports or terminals do not provide adequate reception facilities and on possible mismanagement of residues discharged or delivered once the residues leaves the port or harbour areas.

There is a need to improve the flow of information among all stakeholders operating at sea and at shore. This would fluidify the flow of information, help raise awareness among those operating at sea and at shore and provide an overview of the fate of the residues. It would also contribute to assisting in matching the needs for discharge or delivery of residues in port facilities or terminals with the real capacity of waste operators at shore to manage

these residues properly.

C. Certification scheme

The objective would be to establish a system reinforcing existing national or international rules and procedures for the sound collection and subsequent handling on land of residues generated on board ships.The purpose would be to certify those port facilities that qualify for handling such residues in accordance with MARPOL obligations and where assurances would be given that these residues would be managed, as waste, on land, in an environmentally sound way.

A certified port or terminal would represent an incentive for ships to discharge or deliver their slops and other residues. Ships would know in advance what are the capacity of the port or terminal in receiving what type of residues (does not need to wait to having confirmation from ports or terminals that they could handle their slops for instance). It would not delay operation of ships and may even assist in overcoming operational hurdlings and reduce time spent in ports.

Once the residues are discharged and delivered, ships would get a certificate of delivery or reception that would be sufficient for the master or captain to be satisfied with the quality of services provided in the port or at the terminal and that its residues would be handled in accordance with international standard(s).

D. International standard

An international standard would provide specification for reception management systems for
safe and environmentally sound facilities. It would encourage best practises and facilitate the selection of port and terminal reception facilities by ships. This would enable Port States and port authorities to determine a minimal operational and managerial base upon which a reception facility or terminal could be qualified as adequate in terms of MARPOL requirements.This standard would be part of the criteria used to design and develop a certification scheme for port facilities and terminals.

The development of an international standard could serve two distinct purposes, namely:

- It could provide norms for ports or terminals wanting to establish reception facilities so that building contractors engaged by the port or the State would have to achieve the requirements of the international standard.

- It could or should provide operational standard so that users of the port or terminal could be satisfied that the facilities are operated in an environmentally sound way.

Such standard could help in the development of a unified source of reliable information at the international level about the capacity of port for handling MARPOL residues adequately. For this purpose one might consider the development of a performance standard for port reception facilities and terminals handling MARPOL Annex I and/or Annex II residues.

Geographical coverage

It is proposed to initiate a pilot project in the Mediterranean Region to accompany the many environmental initiatives, programmes or projects undertaken so far or planned by

the European Union, the United Nations, the World Bank and the Riparian States .

It is also envisaged to consider launching similar projects in other geographical areas such as the North Sea, the Baltic Sea or the Black Sea, in the seas of Asia as well as in areas covered by the UNEP Regional Seas Conventions, especially the Abidjan and Nairobi Conventions.

Consultations and exchange of information

The following institutions have been involved in information exchange or discussions regarding the possible development of a certification scheme for sea port facilities. The ongoing dialogue with these institutions should culminate during the International conference organised by WE 2C on the environmentally sound management of waste generated at sea that will take place in Marseille from 24-26 November 2008. They are:

- The International Maritime Organisation (IMO)
- The European Sea Ports Organisation (ESPO)
- The European Community Shipowners Association (ECSA)
- INTERTANKO
- Euroshore international
- The Oil Companies International Marine Forum (OCIMF)
- The European Commission
- The European Maritime Safety Agency (EMSA)
- The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)
- The Mediterranean Action Plan (UNEP/MAP)
- The Blue Plan (Mediterranean)
- The International Solid Waste Association (ISWA)
- The Interantional Bureau of Recycling (BIR)
- Organisation Internationale de la Francophonie (OIF)
- Ministry of Ecology and Sustainable Development (MEDAD-France)
- Region Provence-Alpes-Côte d' Azur (PACA)
- Sea Port of Marseille-Fos
- VEOLIA
- Gedden (private company Canada)

## PROJECT PLANNING

The document will continue to evolve based on any further comments received. Using the project concept as a base for discussion, it is envisaged to initiate a stakeholders' consultation during September and October 2008 on what concrete steps could be envisaged to design workable solutions. This preliminary work will feed into the discussion that will take place during the International conference on the environmentally sound management of waste generated at sea (Marseille, 24, 25 and 26 november 2008). It is hoped that the discussions at the conference will help initiating the design of a pilot project in the Mediterranean in 2009.