EMSA

# Inventory of EU Member States Policies and Operational Response Capacities for HNS Marine Pollution 2010

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## INTRODUCTION

In accordance with Regulation (EC) No 1891/2006 amending Regulation (EC) No 1406/2002, EMSA is given the task to "draw up on a regular basis a list of the private and state pollution response mechanisms and response capabilities in the various regions of the European Union".

In order to fulfil this task of providing accurate and up to date information on the pollution preparedness and response mechanisms and capabilities of the EU and EFTA coastal States, EMSA contacts the competent authorities in each State and prepares specific inventories such as this Inventory of EU Member States Policies and Operational Response Capacities for HNS* Marine Pollution (HNS Inventory).

This update is based on information provided and verified by the competent national authorities in each Member State, reflecting changes which may have occurred since 2008. It replaces the 2008 HNS inventory and is meant to provide a general description of the status of preparedness and response capabilities to marine incidents involving HNS in coastal EU and EFTA States. It includes a description of the competent authorities, the policies, and the preparatory arrangements of each State. The 2010 update has been expanded and provides additional geo-referenced information with regard to significant marine HNS incidents and specialized HNS response equipment in European waters. In addition to the inclusion of this information in the respective country profiles, GIS-based maps are provided.

Describing the status of the HNS response capability around Europe has proven to be rather difficult. The level of preparedness and availability of specialised resources varies significantly between countries, hence the concept of what can be considered "high" versus "low" capacity is somewhat subjective. This means that what is considered as a very important resource in one country might be almost completely disregarded by another country.

Furthermore, the type of equipment commonly used in marine incidents involving HNS is not as straightforward as in oil pollution response. There are a vast number of chemicals that could potentially be encountered in a marine HNS incident. Since each chemical may behave in a different way once released in the marine environment, a variety of monitoring and response equipment and tools may be needed. This equipment is not necessarily stored by any one agency or authority, but may, in case of a real incident, be made available through various sources. It can therefore be extremely difficult to know exactly what is available in advance, particularly in relation to private companies and the salvage industry.

EMSA would like to thank all parties that have contributed to the content of this inventory.

* Hazardous and Noxious Substances

# Country Profiles

# Belgium

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Directorate-General Environment (Federal Public Service Health, Food Chain Safety and Environment)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

The development of two separate sets of operational plans, one for oil spills and one for HNS spills, is considered.

### *1.1. OPRC-HNS Protocol 2000*

Belgium has not yet acceded to the Oil Pollution Preparedness, Response and Cooperation-Hazardous and Noxious Substances (OPRC-HNS) Protocol 2000. However, all the provisions of the OPRC-HNS Protocol 2000 are covered by existing national legislation. The procedure for accession is still pending.

### *1.2. National contingency plan (NCP)*

HNS is not specifically addressed in the NCP. This matter is dealt with in the operational plans for combating (oil) spills at sea, which is attached to the NCP. This document covers the response both to oil spills and HNS spills. The development of two separate sets of operational plans, one for oil spills and one for HNS spills, is considered.

### *1.3. Risk assessment*

An update of the risk analysis was carried out in 2008. The conclusion pointed out the need for Belgium to complement its national stockpile with additional response equipment for dealing with incidents involving HNS on board vessels.

### *1.4. Previous experience*

Belgium has been involved in some marine incidents with HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1984 | MONT LOUIS | Off Ostend | Uranium hexafluoride | Unknown * | 30 cylinders with 15 tonnes each |
| 1987 | HERALD OF FREE ENTERPRISE | Port of Zeebrugge | Mixed packaged hazardous substances | Unknown | Unknown |
| 1993 | SHERBRO | 60 nautical miles west of Cherbourg, Normandy | Mixed packaged hazardous substances: pesticides, nitrocellulose, sulphur, phenol, methyl-ketone | Unknown | 88 containers |
| 1999 | EVER DECENT | Off Dover, England | Containers on fire, toxic gas cloud, dioxins | Unknown | Unknown |
| 2008 | ANTISANA SAFI (Current name: BURGOS) | Ruisbroek (Seecanal Brussels – Scheldt) | Phosphoric acid | Dissolver | No pollution reported |
| 2008 | METHANIA | Zeebrugge | Liquefied Natural Gas (LNG) | Gas/evaporator | No pollution reported |
| 2008 | STOLT SHEARWATER | Antwerp | Unknown | Unknown | No pollution reported |

** When exposed to humidity the chemical gives of toxic cloud of acid (CEDRE web site).*

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

The Management Unit of the North Sea Mathematical Models (MUMM) is responsible for the monitoring of a pollutant at sea or coordination thereof. Belgium has the following specialised devices for surveillance, monitoring and evaluation of HNS releases in the marine environment:

- HNS forecasting models: some HNS dispersion modelling capacity available at MUMM;
- Devices for measuring toxic atmosphere: Portable/ transportable equipment included in HNS incident response teams kit,
- Other measuring devices (e.g.: oxygen meter, pH meter, flash point meter, etc): portable/transportable equipment included in HNS incident response teams kit;
- Sampling devices (including bottom sampling devices): equipment on board research vessel BELGICA (Belgian Sciences Policy Office).

### *2.2. Response capability*

Belgium's capability for responding to marine incidents involving HNS is rather limited and mainly focused on the control of leaks and handling of damaged HNS in packaged form.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Belgium has specialised safety equipment for HNS response, but does not have any specialised vessels for dealing with marine incidents involving HNS. The Belgian Navy has mine-hunter vessels with over-pressurised bridges (also called gas tight citadels), and sonar equipment is available.

### *2.4. Response teams*

Belgium uses the trained response personnel of the Civil Protection. A specific training for interventions at sea and on board vessels is in preparation.

### *2.5. Scientific support*

The MUMM, a department of the Royal Belgian Institute of Natural Sciences, can assist with scientific advice, environmental impact assessment and monitoring.

## 3. TRAINING AND EXERCISES

A Specific HNS response exercise program is currently under development.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Belgium could provide to other Member States, in case of a HNS spill incident, specialised leak control, pumping and temporary storage equipment for a wide range of HNS suitable for use in hazardous atmosphere.

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Containers of response equipment for intervention on HNS spills | 2 | - | Jabbeke | Directorate-General Environment |

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | Yes | Yes | Limited | Yes | No | Yes | No | Yes | No |

# Bulgaria

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:

*The Executive Agency for Maritime Administration of the Ministry of Transport, Information Technologies and Communications*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Bulgaria has not ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Bulgaria does not specifically cover the response to HNS in the national contingency plan.

### *1.3. Risk assessment*

Bulgaria has not made any risk assessment specifically aimed at marine transport of HNS. In the framework of the twinning light project carried out last year with the Finish Maritime Administration, Bulgaria started some preliminary work on collecting of statistical data.

### *1.4. Previous experience*

Bulgaria has not been involved in any major marine accidents involving HNS; only a small incident has occurred.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Bulgaria has vessels for visual monitoring of floating coloured substances and for locating floating packaged goods.

### *2.2. Response capability*

Bulgaria's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

There are no special storage devices or storage arrangements in place for recovered HNS. Floating cranes and barges may be used for recovery and as a temporary storage of packaged goods.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Bulgaria does not have specialised safety equipment for HNS response. Bulgaria does not have any specialised vessels for dealing with marine incidents involving HNS,

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 2005 | FS ODIN (Current name: FT ODIN) | Bulgarian waters | Styrene | Floater / Evaporater | Insignificant |

but there is the possibility of using fire-fighting tugs for the suppression of water soluble gas clouds.

### *2.4. Response teams*

Bulgaria does not have a specialised response team for marine incidents involving HNS. There are trained personnel only for shore response - Department of Radiological, Chemical and Biological Protection in the National Civil Protection Service Directorate General under the Ministry of Interior.

### *2.5. Scientific support*

The Bulgarian Ministry of Transport, Information Technologies and Communications does not have a specialised body to provide scientific advice on marine incidents involving.

## 3. TRAINING AND EXERCISES

Bulgaria has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Bulgaria cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | No | Yes, minor | Very limited | Yes, limited | No | No | No | No | No |

# Cyprus



Competent national authority responsible for marine pollution by HNS:

*The Department of Fisheries & Marine Research (DFMR) of the Ministry of Agriculture, Natural Resources and Environment*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Cyprus has not ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Cyprus does not specifically cover response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Cyprus has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Cyprus has not been involved in any marine accidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Cyprus does not have any specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Cyprus' capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Cyprus does not have any specialised safety equipment, vessels and special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Cyprus does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Cyprus does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

No training is currently conducted.

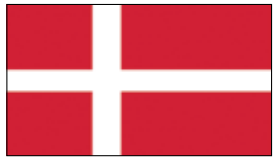
## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Not applicable.

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | No | No | Very limited | No | No | No | No | No | No |

# Denmark





Competent national authority responsible for marine pollution by HNS:
*The Ministry of Defense*

The Ministry of Defence has delegated the contingency functions to Defence Command Denmark, which for its part has delegated the contingency functions to the Admiral Danish Fleet (Royal Danish Navy).

The Admiral Danish Fleet is responsible for response to pollution on the high seas and in coastal waters, while the regional or local councils are responsible for response to pollution on the shoreline. The local authorities are responsible for response to pollution in ports and harbours.

The Environmental Protection Agency (EPA) under the Ministry of the Environment and Energy is responsible for the administration of legislation concerning environmental protection (the Danish Act for the Protection of the Marine Environment) and environmental regulation of offshore activities.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Denmark has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Denmark does not specifically cover response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Denmark has made a risk assessment which specifically included marine transport of HNS. This HNS risk assessment is based on the Danish Risk Analysis for the Danish waters 2007.

### *1.4. Previous experience*

Denmark has been involved in marine incidents involving HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1984 | DANA OPTIMA | North Sea | Dinitrobutylphenol (Dinoseb) | Unknown | 80 drums |
| 1989 | JULIE A | Port of Aarhus | Hydrochloric acid | Unknown | 1 – 5 tonnes |
| 2003 | FU SHAN HAI | Off Bornholm Island | Potash | Dissolver | 6,6000 tonnes |
| 2008 | KEMIRA GAS | Great Belt | Liquefied ammonia | Gas/dissolver | No pollution reported |
| 2008 | YARA GAS III | Off Hanstholm | Liquefied Petroleum Gas (LPG) | Gas/evaporator | No pollution reported |

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Denmark does not have any specialised equipment for monitoring of marine spills of HNS, but the Danish Emergency Management Agency (DEMA) has measuring instruments that can monitor HNS on ships and on the sea surface, and sampling devices.

Aircraft from the Royal Danish Air Force can carry out aerial surveillance. The planning of aerial surveillance is done in direct coordination between the Royal Danish Air Force and the Admiral Danish Fleet.

### *2.2. Response capability*

Denmark's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response. With the existing resources, only recovery of undamaged drums and containers can be undertaken.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Denmark has specialised safety equipment for HNS response (DEMA), but does not have any specialised vessels for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Denmark does not have a specialised response team for marine incidents involving HNS, but personnel from DEMA can measure of HNS leaks.

### *2.5. Scientific support*

The DEMA laboratory and the Danish "Strålehydrografisk" Institute (Radiographic Beam Hygiene) can support HNS spills in the human health and safety and environmental toxicology areas.

## 3. TRAINING AND EXERCISES

Danish environmental exercises include HNS elements.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Denmark can provide to other Member States in case of an HNS spill incident experts in HNS (personnel from DEMA).

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | No | Yes | Yes | Very limited | Yes | No | Yes | No | Yes | Yes |

# Estonia



Competent national authority responsible for marine pollution by HNS:
*The Police and Border Guard under the Ministry of the Interior*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Estonia has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Estonia does not specifically cover response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Estonia compiles national risk assessments annually, in which marine transport of HNS is one of the topics. The ecological and socio-economic areas sensitive to marine spills have been identified and mapped.

### *1.4. Previous experience*

Estonia has not been involved in any major marine accidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Estonia has some specialised equipment for monitoring of marine spills of HNS: a LET-410 aircraft is available for surveillance and is equipped with SLAR (Side Looking Airborne Radar), FLIR (Front Looking Infrared Radar) and a search and weather radar RDR-1400c.

### *2.2. Response capability*

Estonia's capability for responding to marine incidents involving HNS is very limited and relies on the same resources as for oil pollution response.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Estonia does not have specialised safety equipment, vessels and special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Estonia does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Estonia has a specialised body involving scientists and specialists called the Operational Experts Group which provides scientific advice on marine incidents. However, its capabilities in the field of HNS are not ascertained.

## 3. TRAINING AND EXERCISES

Estonia has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Estonia can provide to other Member States in case of an HNS spill incident an airplane with optical remote sensing capabilities (SLAR/ FLIR and in the future a helicopter with LIDAR (Light Detecting and Ranging)).

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | No | Yes | No | Very limited | Yes | No | No | No | No | No |

# Finland



Competent national authority responsible for marine pollution by HNS:
*The Finnish Environment Institute (SYKE), under the Ministry of Environment*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Finland has not ratified the OPRC-HNS Protocol 2000. The ratification is being prepared and is scheduled for 2011.

### *1.2. National contingency plan*

A specific plan for HNS incidents is under preparation and will then be a part of the existing national contingency plan.

### *1.3. Risk assessment*

Finland has made a risk assessment which included marine transport of HNS. The report "Transportation of liquid bulk chemicals by tankers in the Baltic Sea", published by VTT in 2006, provides an overview of the Baltic HNS traffic and the associated risks.

### *1.4. Previous experience*

Finland has only been involved in some minor marine incidents with HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Finland has some specialised equipment for monitoring of marine spills of HNS:

- Aerial surveillance: two surveillance aircraft with remote sensing equipment (optical instruments and scanners). Infrared/ultraviolet might be applicable for observation of floating substances;
- Vessel surveillance: oil detection radar will be installed in two response vessels by the end of year 2010; these radars might also have the capability to detect floating substances other than oil;
- Sampling devices: the available vessels can take air and water samples, and can locate lost packaged goods.

### *2.2. Response capability*

Finland's capability for responding to marine incidents involving HNS is rather limited and mainly relies on the same resources as for oil pollution response.

There are no special storage devices or storage arrangements in place for recovered HNS. Floating cranes and barges may be used for recovery and as a temporary storage of packaged goods.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 2006 | TEJO CHEMIST<br>(Current name: JOHN AUGUSTUS ESSBERGER) | Off Pori | Sodium chlorate | Unknown | No pollution reported |

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Finland has specialised safety equipment (suits and breathing apparatuses) and specialised vessels for dealing with marine incidents involving HNS.

Finland has ordered a new multipurpose vessel, which will be classified as an oil and chemical response vessel. It will have a tank for chemicals that can be pumped from a chemical cargo ship in an emergency situation. The same work profile will be applied to all new pollution response ships that Finland will order in coming years.

### *2.4. Response teams*

Finland does not have a specialised response team for marine incidents involving HNS.

Some expert officers and divers are available together with search and rescue personnel from Response Regions, but few are experts on working in chemically polluted atmosphere and water.

### *2.5. Scientific support*

Finland does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

The vessel crews are trained in the use of inert systems, toxicity measuring equipment etc. as part of their annual exercise program.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Vessels can be sent to another Baltic Sea country to assist in the response operation – vessels are not classified to operate outside the Baltic Sea area.

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| MERIKARHU | 1 | Possibility of being over-pressurised for one or two hours to work with evacuation of the crew and other important tasks in the vicinity of a chemical spill | Gulf of Finland | SYKE duty officer |
| TURSAS | 1 | Possibility of being over-pressurised for one or two hours to work with evacuation of the crew and other important tasks in the vicinity of a chemical spill | Archipelago Sea | SYKE duty officer |
| UISKO | 1 | Possibility of being over-pressurised for one or two hours to work with evacuation of the crew and other important tasks in the vicinity of a chemical spill | Archipelago Sea | SYKE duty officer |

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | Yes | Yes, minor | Limited | Yes | No | Yes | Yes | No | Yes |

# France



Competent national authority responsible for marine pollution by HNS:
*The three maritime prefect (PREMAR) for the Mediterranean, Atlantic and North Sea/Channel*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

France has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

The French response to HNS spills is integrated within the "At sea pollution response" section of the three civil security response organisations (ORSEC MARITIME - global contingency plans for each of the French maritime areas: Mediterranean, Atlantic, Channel and North Sea). All three plans include a chapter on the related available means and experts.

### *1.3. Risk assessment*

France has made some risk assessments specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

France has been involved in some marine incidents with HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1988 | BREA | 15 nautical miles north of Ushant Island, Finistere | Organophosphate pesticides | Unknown | 700 drums |
| 1989 | PERINTIS | Off Cherbourg | Lindane, permethrin and cypermethrin | Unknown | 6 tonnes of lindane; 1 tonne of permethrin; 1 tonne of cypermethrin (containers) |
| 1997 | ALBION TWO | 60 nautical miles from Brest, Finistere | Calcium carbide* (packaged in barrels) Camphor ammonia anhydrous | Dissolver | 114 tonnes |
| 1997 | KAIRO | Off the coast of Royan | Lead tetraethyl | Sinker | 6,240 tonnes (3 containers) |
| 1999 | JUNIOR M | Off the coast of Brest | Ammonium nitrate | Dissolver | 700 tonnes (packs) |
| 2000 | IEVOLI SUN | Channel, 60 km west of Cherbourg | Styrene, methyl ethyl ketone, isopropyl alcohol | Floater | Styrenre: 3,998 tonnes; Methyl sthyl ketone: 1,027 tonnes; Isopropyl alcohol: 996 tonnes |
| 2001 | BALU | Bay of Biscay | Sulphuric acid | Dissolver | 8,000 tonnes |
| 2002 | BOW EAGLE | English Channel | Ethyl acetate | Evaporator | 200 tonnes |
| 2002 | DENEB | Agribusiness terminal of Montoir-de-Bretagne | NPK (Azote, Phosphate, Potassium) | Unknown | Unknown |

| | | | | | |
|---|---|---|---|---|---|
| 2002 | LYKES LIBERATOR (Current name: GOTHENBURG EXPRESS) | English Channel (off Finistere coast) 120 nautical miles west of Sein island | Solid alkylaluminium, Aluminium Diethyli-odide, Zinc Diethyliodide | Unknown | 1 container with chemical products |
| 2003 | ADAMANDAS | French territorial waters of Reunion | Deoxidized iron ore balls | Evaporator | 1,000 tonnes |
| 2006 | SAFMARINE LEMAN | Brittany Coast | Isopropanol, toluene and methanol | Dissolver/Evaporator | 15 x 200 litre drums |
| 2006 | ECE | Channel Sea, 50 nautical miles west of Cherbourg | Phosphoric acid | Dissolver | 10,000 tonnes |
| 2007 | MSC NAPOLI | North of Trégastel, Côtes d'Armor | Undefined toxic substances | Unknown | 1,700 tonnes |
| 2007 | NORMAN SPIRIT (Current name: OSTEND SPIRIT) | Le Havre | Chlorophenol | Unknown | Unknown |
| 2008 | SUSIE (Current name: SINJAR | Off Ouessant, Finistere | Phosphine | Evaporator | 8,000 tonnes |

** Calcium carbide reacts with water and releases acetylene, a flammable gas.*

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

France has the following specialised devices for surveillance, monitoring and evaluation of HNS pollution in marine environment:

- HNS behaviour and drifting models;
- Devices for measuring toxic atmosphere and other (e.g. oxygen meter, pH meter, flash point meter);
- Sampling devices.

### *2.2. Response capability*

France's capability for responding to HNS marine pollution is limited to the recovery of mainly packaged goods, floating substances or liquids and lightering operations.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

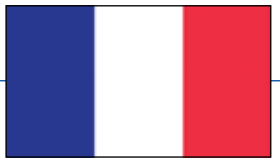
Stockpiles include specific safety equipment for teams in charge of operations for HNS pollution response (suits and specific equipment for intervention in toxic atmosphere, containers for leaking barrels, tools and equipment for leaking containers, etc.).

Two of the four emergency high-sea tug boats chartered by the French navy are able to cross a toxic atmosphere during half an hour (citadel ship: Abeille Liberté in Cherbourg, Abeille Bourbon in Brest).

### *2.4. Response teams*

France has specialised response teams for marine incidents involving HNS. Trained teams from French navy fire brigades are available for HNS evaluation and HNS

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Containers for leaking barrels | 70 | Plastic or metal containers | Cherbourg, Brest and Toulon | Ministry of Defence, French navy |



pollution operations. Specific teams from French navy high-sea divers companies are also able to operate in polluting waters with specific equipment, tools and Remotely Operated Vehicles (ROV).

### *2.5. Scientific support*

Specialised advice during the response to a marine spill involving HNS could be provided by CEDRE (Centre for Documentation, Research and Experimentation on Accidental Water Pollution), INERIS (National Institute for Risk Evaluation), specialised teams from French navy laboratories, French navy firemen, and IFREMER (French Research Institute for Exploitation of Sea resources).

## 3. TRAINING AND EXERCISES

General training provided by CEDRE (oil and chemicals pollution training sessions), specific HNS training sessions for French navy firemen (in national firemen schools), specific training course by the French navy for navy divers.

Each maritime prefect regularly organises HNS pollution exercises.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Scientific support and operational advice.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | No | Yes | Yes |

# Germany

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:

*The Central Command for Maritime Emergencies (CCME), under the Federal Ministry of Transport, Building and Urban Development*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Germany has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Germany covers response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Germany has made some risk assessments specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Germany has been involved in marine accidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Germany has the following specialised devices for surveillance, monitoring and evaluation of HNS releases in the marine environment:

- Vessel surveillance: ZMGS (German part of SSN);
- HNS forecasting models: GAS CLOUDS;
- Devices for measuring toxic atmosphere;

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1989 | OOSTZEE | Mouth of the Elbe River | Epichlorohydrin | Evaporator | Unknown |
| 2000 | IEVOLI SUN* | Channel, 60 km west of Cherbourg | Styrene, methyl ethyl ketone, isopropyl alcohol | Floaters | Styrene: 3998 tonnes; Methylethyl ketone: 1027 tonnes; Isopropyl alcohol: 996 tonnes |
| 2003 | ANDINET** | Northwest of Texel | Styrene: 3998 tonnes; Methylethyl ketone: 1027 tonnes; Isopropyl alcohol: 996 tonnes | Dissolver | 114 tonnes |
| 2004 | ENA 2 | Hamburg's port | Sulphuric acid | Dissolver | 980 tonnes |
| 2007 | EXCELSIOR | Near Köln | Acid and fuel additives | Dissolver/Floater | Unknown |
| 2008 | PATRICIA S. (Current name: LAVINA) | Brunsbüttel | Metal shavings | Unknown | No pollution reported |

** The accident happened in France's waters, but Germany was involved in the response;*

*** The accident happened in The Netherlands' waters, but Germany was involved in the response.*

- Other measuring devices (e.g. oxygen meter, pH meter, flash point meter);
- Sampling devices (including bottom sampling devices).

### *2.2. Response capability*

Germany's capability for responding to marine incidents involving HNS is limited to the recovery of mainly packaged goods, floating liquids and lightering operations (excluding gas tankers). However interventions in highly explosive and toxic atmospheres are possible because of the very sophisticated gas protection and analysing systems on board the multipurpose vessels.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

The four gas-protected multipurpose vessels can do sampling of air and water and in situ monitoring of the atmosphere (quantifying and qualifying).

Germany has specialised vessels for dealing with marine incidents involving HNS, including four gas-protected multipurpose vessels (NEUWERK, MELLUM, SCHARHÖRN, ARKONA) of which two are located in the North Sea and two in the Baltic Sea.

Germany has specialised response teams for marine incidents involving HNS. Trained fire brigades are also available.

### *2.5. Scientific support*

Germany does not have a specialised body which provides scientific advice on marine incidents involving HNS but has several experts of varying qualifications (human health and safety, environmental toxicology, salvage/response) and specialisations who come together on a case-by-case basis to advise the CCME. These experts are from scientific agencies and industry.

## 3. TRAINING AND EXERCISES

Regular exercises and training programmes are established in Germany for vessels and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Germany could provide the following types of assistance to other Member States in case of a HNS spill incident:

- Specialized equipment/vessels only;
- Specialized equipment/vessels with trained personnel: ship crew can handle the vessel and assist the response operation of the requesting country;
- Experts in HNS.

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Gas-protected multipurpose vessels: NEUWERK, MELLUM, SCHARHORN, ARKONA | 4 | They are all equipped with detection, recovery and storage devices for hazardous substances and accommodation and equipment facilities for additional strike units of 30 persons each | Cuxhaven, Wilhelmshaven, Kiel, Stralsund | CCME |
| GUSTAV MEYER and BAUMRÖNNE | 2 | Assisting vessels with gas protection, but without recovery and storage capacity etc. | Emden, Cuxhaven | CCME |

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | Yes | Yes | Yes |

# Greece

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Ministry of Citizen Protection/Marine Environment Protection Directorate*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Greece has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Greece covers response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Greece has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Greece has been involved in a limited number of marine incidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Greece does not have any specialised Government owned equipment for monitoring of marine HNS spills.

### *2.2. Response capability*

Greece's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1996 | KIRA | Off Sapientza Island | Phosphoric acid | Dissolver | 7,600 tonnes |
| 1998 | SEA-LAND MARINER (Current name: LYS) | - | Phosphorus, barium and oxyacetylene | Unknown | Unknown |
| 1999 | MASTROPETROS | About half a nautical mile off Andros Island | Calcium sulphate | Unknown | Unknown |
| 2000 | LINA STAR | - | Sodium carbonated | Unknown | 1,150 tonnes |
| 2001 | VASILIKI (Current name: ALPHA II) | - | Benzene | Evaporator | Unknown |
| 2006 | XYMA A.E.(Coastal chemical Installation) | South Evoikos Gulf | Styrene | Evaporator | Unknown* |
| 2007 | SICHEM MALAGA | Crete | Chemical/Gas | Unknown | No pollution reported |

** While combating a fire in the tanks of the chemical installation, quantities of water used during fire-fighting operations found their way into the adjacent sea.*

resources as for oil pollution response. Although there is a plan to respond to HNS pollution incidents, there is a lack of antipollution means and equipment for response to HNS pollution at sea.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Greece does not have any specialised Government owned safety equipment for HNS nor does Greece have any specialised vessels and special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Greece does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

The Ministry of Health is responsible for recommending emergency measures for mitigating the consequences of the pollution incident on public health. The National Centre for the Research of Physical Sciences "DIMOKRITOS" provides guidelines on the appropriate protection measures and methodology of response (human and health safety) and salvage/response to an incident with radioactive materials. The Hellenic Centre for Marine Research can provide scientific support for HNS spills in the Environmental toxicology field.

## 3. TRAINING AND EXERCISES

Greece does not have a training program for marine incidents involving HNS.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Greece cannot provide assistance from Government resources to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | No | Yes | Very limited | No | No | No | No | Yes, limited | No |

# Iceland

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Environment Agency of Iceland (EAI), under the auspices of the Ministry for the Environment*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Iceland has not ratified the OPRC-HNS Protocol 2000. Ratification is under consideration.

### *1.2. National contingency plan*

Iceland does not specifically cover response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Iceland has not made any risk assessment specifically aimed at marine transport of HNS. There is limited chemical industry in Iceland and transport of substantial amounts of HNS in Icelandic waters occurs infrequently, if at all.

### *1.4. Previous experience*

Iceland has not been involved in any marine incidents with HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Iceland does not have any specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Iceland's capability for responding to marine incidents involving HNS is very limited and mainly relies on the local fire brigades. Apart from that, Iceland relies on international agreements and cooperation in case of a larger incident.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Individual Fire Departments have equipment available for HNS response. Detailed information on type and quantity are not available.

Iceland does not have any specialised vessels for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Iceland does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Iceland does not have a specialised body which provides scientific advice on marine incidents involving HNS. General information about HNS is sought from the fire brigades and the Environment Agency, as the supervising body.

## 3. TRAINING AND EXERCISES

Iceland has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Iceland cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | No | No | Very limited | No | No | Yes | No | No | No |

# Ireland



Competent national authority responsible for marine pollution by HNS:
*The Department of Transport through the Irish Coast Guard (IRCG)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Ireland has not ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Ireland will cover response to HNS in their national contingency plan which is in the course of preparation.

### *1.3. Risk assessment*

Ireland is currently preparing a risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Ireland has been involved in marine accidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Ireland does not have any specialised equipment for monitoring of marine spills of HNS. Ireland has some modelling capacity and has the ASA CHEMMAP modelling system in place.

The Irish Coast Guard has contracted four civilian Sikorsky S61N Search and Rescue helicopters deployed at bases around the coast. These aircraft can be used for pollution aerial surveillance during daylight hours. Fixed wing aircraft of the Irish Air Corps can be utilised during daylight hours when available. Ireland also has a fully functional AIS system in place around its coastline.

### *2.2. Response capability*

Ireland's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1986 | KOWLOON BRIDGE | Off the coast of Cork | Iron ore | Unknown | 160,000 tonnes |
| 2006 | COBALTWATER | Foynes | Caustic soda | Dissolver | No pollution reported |
| 2010 | BG DUBLIN | 15m south of County Waterford | Sodium bromate | Dissolver | 11,480 kg (1 container) |

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

The Coast Guard has no specialised safety equipment for HNS response. Ireland does not have any specialised vessels or special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Ireland does not have a specialised response team for marine incidents involving HNS.

During a major HNS spill, the Director may deploy the Irish Coast Guard's Marine Pollution Response team as part of the Irish Coast Guard's Incident Command System to assume local command of Counter Pollution operations. This team is made up of Irish Coast Guard and local harbour/port authority personnel.

### *2.5. Scientific support*

Ireland does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

Ireland does not have any training courses available in this field. Personnel from the Marine Pollution Response Team have participated in the UK Chemical Strike team training, and personnel from the Coast Guard have attended training courses in the UK for HNS Response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Ireland cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | Yes | Yes | Very limited | No | No | No | No | No | Yes |

# Italy



Competent national authority responsible for marine pollution by HNS:
*The Ministry of Environment, the Italian Coast Guard and National Civil Protection*

Other entities involved in an HNS incident are the Institute for Environmental Protection and Research (ISPRA) and Regional Agencies for the Environmental Protection (ARPAs). These entities are usually involved to give their technical and scientific support.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Italy is intending to ratify the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

The Italian national contingency plan of the Ministry of the Environment for accidental marine pollution by hydrocarbon and other dangerous goods approved in late 1987 is now being updated. The draft of the new plan, which takes into consideration procedures to face HNS incidents, is almost finished and is waiting for administrative approval.

### *1.3. Risk assessment*

Italy has not yet made any risk assessment specifically aimed at marine transport of HNS. The first step of the evaluation of the risk assessment has been undertaken, producing the vulnerability map of the Italian coastal areas.

### *1.4. Previous experience*

Italy has been involved in some marine incidents with HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1979 | M/N KLEARKOS | 3 km south of Tavolara Island (Sardinia) | Many chemicals transported in goods | Unknown | Cargo partially recovered, about 100 tonnes removed from the wreck |
| 1990 | VAL ROSANDRA | Port of Brindisi | Propylene | Gas/Evaporator | 1,800 tonnes |
| 1991 | ALESSANDRO PRIMO | Off Molfetta | Acrylonitrile and dichloroethane | Gas/Dissolver (ACN) Sinker/Dissolver (DCE) | 550 tonnes acrylonitrile and 1,000 tonnes dichloroethane |
| 1991 | SCAIENI | East of Sicily | Ammonium nitrate | Dissolver | 3,057 tonnes |
| 1996 | ANIS ROSE | 75 km south east of Olbia, Sardinia | Chrome ore | Sinker/Dissolver (DCE) | Unknown |
| 1997 | ONUR K | Off Sicily | Zinc and lead concentrates | Sinker/Dissolver (DCE) | Unknown |
| 1998 | DOGRUYOLLAR IV | 48 km southeast of Cape Carbonara, Sardinia | Zinc and lead concentrates | Sinker/Dissolver (DCE) | 2,020 tonnes |

| | | | | | |
|---|---|---|---|---|---|
| 2000 | HASAT | | Flammable gas and liquid | Unknown | 485 containers |
| 2003 | CAPE HORN (Current name: SAFA MARWA) | Leghorn | Methanol | Dissolver | 14,000 tonnes |
| 2004 | PANAM SERENA | Porto Torres, Sardinia | Benzene | Evaporator | 200 tonnes |
| 2007 | CHEMSTAR EAGLE (Current name: MTM WESTPORT) | Off Livorno | Styrene | Floater/Evaporator | No pollution reported |

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Italy has some specialised equipment for monitoring of marine spills of HNS.

The Italian Coast Guard Flight service has 2 aircraft ATR 42 MP equipped with remote sensing sensors, like SLAR (Side Looking Airborne Radar), multi-spectral scanners (Sensytech ATM Enhanced), infrared cameras, and camcorders.

ITCG has 7 aircraft Piaggio P166DL3 equipped with FLIR (Forward Looking InfraRed Radar), 2 spectral scanners (Sensytech 3505) and aerial photography systems VINTEN. By means of these devices it is possible to detect, in real time, wide marine areas polluted by various classes of noxious substances, in addition to hydrocarbons.

The Ministry of Environment, under an outsourcing agreement, has at its disposal three vessels equipped with radar oil detection system (Seadarq), able to detect HNS behaving like hydrocarbons on the sea surface.

13 of the 35 naval units of the Italian anti-pollution fleet are equipped with:

- multi-parametric probes;
- water samplers (Niskin and Shoemaker bottles);
- sediment samplers;
- biological samplers.

The same ships will shortly be equipped with air samplers. Other analysis kits are stocked in warehouses ready to be used.

### *2.2. Response capability*

Italy's capability for responding to marine incidents involving HNS is rather limited and relies on Harbour Fire Brigades who are prepared to face this kind of emergency and have special boats; the assistance of the Harbour's Chemist (a service existing in all major Italian ports to advise the Harbour Master) is also used. All these operate under the coordination of the Harbour Master (Capitaneria di Porto).

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

The Ministry of the Environment does not have any specialised vessel for dealing with marine incidents involving HNS, but the Harbour Fire Brigades have some boats fit for intervention in this field. In addition, the Contractor of the antipollution service for the Ministry of the Environment has some vessels classified by the Registro Italiano Navale (RINA) as "HNS antipollution vessel".

### *2.4. Response teams*

Italy has five specialised teams of Fire Fighters Brigade (CBNR) able to work during HNS accidents and equipped with appropriate Personal Protective Equipment (PPE) (highest level of protection). They have personal decontamination equipment and tools for the containment of the products.

These special Fire Fighters Brigades are able to operate along the shoreline and on vessels. Fire Fighters Brigades have 12 centres around the country, with helicopters that can transport the CBNR Teams on scene.

### *2.5. Scientific support*

Scientific institutes which can provide scientific advice during HNS marine pollution are the Institute for Environmental Protection and Research (ISPRA), and the Italian National Institute of Health (ISS).

## 3. TRAINING AND EXERCISES

Due to the low number of HNS marine incidents no special exercises are organised in cooperation with the Italian Coast Guard. The CBNR Teams of Fire Fighters Brigade have special training courses (three steps 1°, 2° and 3°) organised by themselves.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

No resources are available from the Ministry of the Environment.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | Yes | No | Yes | Limited | Yes | Yes | No | No | Yes | Yes |

# LATVIA



Competent national authority responsible for marine pollution by HNS:

*Latvian Coast Guard (Naval Forces Flotilla) is the competent executive authority for dealing with HNS pollution response at sea**

The State Environmental Service under the Ministry of Environment is the coordinating authority for implementation of the National Oil and HNS Contingency Plan.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Latvia has been preparing to ratify the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

In May 2010 National Oil Spill Contingency Plan was amended with administrative procedures for dealing with marine pollution involving HNS.

### *1.3. Risk assessment*

A risk assessment specifically aimed at marine transport of HNS has been done within the project: "National Chemical Spill Contingency Plan Latvia", 2004, cooperation project Latvia/Flemish government (01/05053/DL).

### *1.4. Previous experience*

Latvia has been involved in occasional marine incidents with HNS (see table below).

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Helicopters (MI-17) and Naval Forces Flotilla vessels are available for surveillance of HNS releases in the marine environment. Few devices for measuring toxic atmosphere (OrionPlus ex/ox/CO/H2S/CO2), some oxygen measuring devices (Ex-Ox-Meter IIP Nonan), water and bottom sampling devices (KC HAPS bottom corer, VanVeen grab, etc.), for monitoring and evaluation of HNS releases in the marine environment are available.

### *2.2. Response capability*

Latvia's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

There is no specialised safety equipment, vessel and storage devices for responding to HNS incidents at sea. The same vessels and equipment will be used to respond to HNS which are used for response to oil.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 2007 | GOLDEN SKY (Current name: SOSNA) | 900m off Ventspils | Potassium chlorine (Muriate of potash) | Dissolver | No pollution reported |

** However, the Latvian Coast Guard will undertake this task only if funding is granted.*

### *2.4. Response teams*

Latvia does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Latvia does not have a specialised body which provides scientific advice on marine incidents involving HNS. Experts may be consulted on case to case basis from scientific institutions such as the Latvian Institute of Aquatic Ecology or private companies.

## 3. TRAINING AND EXERCISES

Latvia has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Latvia cannot provide assistance to other Member States in case of an HNS spill incident at sea.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | Yes | Yes | Yes, minor | Very limited | Yes, limited | No | No | No | Yes, limited | No |

# Lithuania



Competent national authority responsible for marine pollution by HNS:
*The Navy of the Lithuanian Armed Forces*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Lithuania has not ratified the OPRC-HNS Protocol 2000. Due to the on-going reorganisation of the current Search and Rescue (SAR) and pollution response system, there is some uncertainty about the date of ratifying the OPRC-HNS Protocol 2000. Nevertheless, the Government of the Republic of Lithuania is making all the necessary preparations and considers ratifying the OPRC-HNS Protocol 2000 in the near future.

### *1.2. National contingency plan*

Lithuania does not specifically cover response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Lithuania has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Lithuania has not been involved in any marine incidents with HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Lithuania does not have any specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Lithuania's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

There are no special storage devices or storage arrangements in place for recovered HNS. Floating cranes and barges may be used for recovery and as temporary storage of packaged goods.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Lithuania does not have any safety equipment, vessels and special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Lithuania does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Lithuania does not have a specialised body which provides scientific advice on marine incidents involving HNS. In case of chemical spills, the Marine Research Department of The Environmental Protection Agency is contacted for expert advice.

## 3. TRAINING AND EXERCISES

Lithuania has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

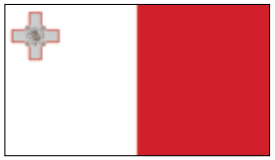
Lithuania cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | No | No | No | Very limited | No | No | No | No | Yes, limited | No |

# Malta



Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Authority for Transport in Malta (TM)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Malta has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

The present NCP was re-written in 2009 and covers response to HNS pollution. The plan is in its final draft and awaiting approval.

### *1.3. Risk assessment*

A risk assessment was carried out in 2008/2009 as one of the studies carried out before the revision of the National Contingency plan. This risk assessment can be found in part 1 of the aforementioned plan.

### *1.4. Previous experience*

Malta has been involved in some marine incidents with HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Malta has radiation monitoring and toxic meter equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Malta's capability for responding to marine incidents involving HNS is very limited.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

The Civil Protection Department has equipment specifically designed for combating HNS and protective clothing to carry out the task.

Malta does not have any specialised vessels for dealing with marine incidents involving HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1988 | OCEAN SPIRIT | Off Gozo Island | Lead concentrate | Sinker | 2,850 tonnes |
| 2002 | CAMADAN | - | Phosphate granules (solid) | Unknown | 2,900 tonnes |
| 2006 | IRAN ILAM (Current name: SEPITAM) | Marsaxlokk | Explosive substances and objects and radioactive objects | Unknown | 700 tonnes |

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Various HNS Equipment | Civil Protection Department | | CPD-Kordin | CPD–Marine Unit |

### *2.4. Response teams*

The Civil Protection Department has HNS response equipment and individuals from the Civil Protection Department that have been trained to utilise the available equipment.

### *2.5. Scientific support*

Malta does not have a specialised body which provides scientific advice on marine incidents involving HNS. The University of Malta and the Malta Environment and Planning Authority (MEPA) can provide scientific support on marine pollution in general.

## 3. TRAINING AND EXERCISES

Personnel from the Civil Protection Department receive regular training in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Malta cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | Yes | Yes | Very limited | Yes, limited | Yes, limited | Yes, limited | No | No | Yes |

# The Netherlands

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Director of the Netherlands Coastguard*

In this task he is assisted by the Dutch Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS) North Sea, the organisation that also executes the marine pollution response plan. A policy-making team is chaired by the director of RWS North Sea.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

The Netherlands has prepared a Maritime Emergency Response Service. In this service, in addition to search and rescue and emergency towing, response to HNS is covered.

### *1.1 OPRC-HNS Protocol 2000*

The Netherlands has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

The Netherlands does not specifically cover response to HNS in their national contingency plan. A specific national contingency plan for HNS incidents is under construction and will then be part of the existing national contingency plan for oil. The National Contingency Plan is currently under review and is scheduled to be ready in 2012.

### *1.3. Risk assessment*

The Netherlands has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

The Netherlands has been involved in marine incidents with HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1988 | ANNA BROERE | North Sea | Acrylonitrile and Odecyl benzene | Dissolver | 547 tonnes of Acrylonitrile and 500 tonnes of Odecyl benzene |
| 1992 | ARIEL | North Sea | White spirit | Unknown | 45 drums |
| 1992 | NORDFRAKT | North Sea, 50 km off Noordwijk | Lead sulphur | Sinker | 2,352 tonnes |
| 1998 | APUS | North Sea | Urea-formaldehyde and kerosene | Unknown | 2,100 boxes |
| 1998 | BAN-ANN | North Sea | Sulphur phosphine Detia EX-B | Dissolver | Unknown |
| 1998 | DART 2 | North Sea | Methane sulphon acid | Unknown | Loss of fifteen 200 litre drums |
| 1998 | EUROPEAN TIDEWAY | - | Alkyl phenol ether phosphate (detergent agent) | Unknown | Seven 200 litre drums |

| | | | | | |
|---|---|---|---|---|---|
| 2003 | ANDINET | North Sea | Arsenic pentoxide | Dissolver | 3 containers with drums |
| 2007 | IMPULS | Maasbracht | Sulphuric acid | Dissolver | No pollution reported |
| 2008 | RUBINO | Off Zouteland | Acetone and acetylene | Dissolver | No pollution reported |
| 2008 | STOLT INNOVATION | Rotterdam | Methylene diphenyl diisocyanate (MDI) | Unknown | No pollution reported |
| 2009 | SICHEM ANNE (Current name: PV OIL VENUS) | Dordrecht | Dangerous goods | Unknown | No pollution reported |

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

The Netherlands has some specialised equipment for monitoring of marine spills of HNS. There are two remote sensing aircraft available and there are vessels for monitoring the sea area, taking water samples, and locating lost packaged goods.

Modelling exists through the RWS Centre for Water Management in Lelystad. All national institutes of interest are organised in a web based group of experts, called BOT-mi (Policy Advising Team for Environmental Incidents). This includes gas cloud modelling, health risks and military experts.

### *2.2. Response capability*

The Netherlands' capability for responding to marine incidents involving HNS is rather limited and mainly relies on contracting commercial companies e.g. salvors. Research is required to find out in which cases oil response equipment can be used.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Industry, especially salvage and related commercial companies will be contracted to provide specialised safety equipment for HNS response.

The Netherlands does not have any specialised vessels for dealing with marine incidents involving HNS. Some Navy vessels have gas tight citadels and can go into hazardous areas for measuring the air.

### *2.4. Response teams*

The Netherlands has a specialised response team for marine incidents involving HNS (industry).

### *2.5. Scientific support*

The Dienst Centraal Milieu Rijnmond (DCMR) in Schiedam provides advice on human risk issues. The RWS Centre for Water Management provides advice on ecological aspects

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Vessels with gas tight citadels | 7 | Can go into hazardous areas | Den Helder | Navy |

and possible response options. The National Institute for Applied Science and others may also be contracted in case of an incident to provide support or conduct long term effect studies.

## 3. TRAINING AND EXERCISES

The Nautical College Willem Barentz offers an annual one week training course on HNS, based on an EU programme.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

The Netherlands can provide the following assistance to other Member States in case of an HNS spill incident:

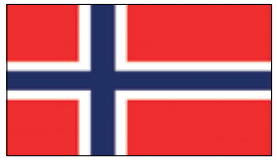
- Specialized equipment/vessels with trained personnel: Industry;
- Experts in HNS: Industry;
- Aerial surveillance.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | No | No | Yes | Limited | Yes | Yes | Yes | No | Yes | Yes |

# Norway



Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The Norwegian Coastal Administration (NCA)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

A national system for preparedness and response to HNS incidents at sea similar to that for oil pollution is not established, except for the capability to handle HNS pollution with behaviour similar to oil spills. The Norwegian Coastal Administration is doing preparatory work on marine pollution to include HNS.

### *1.1. OPRC-HNS Protocol 2000*

Norway has not ratified the OPRC-HNS Protocol 2000. Norway is currently evaluating whether it should ratify the Protocol.

### *1.2. National contingency plan*

Norway partly covers response to HNS in its national contingency plan. The plan is part of the existing NCP.

### *1.3. Risk assessment*

A risk assessment for the transport of HNS in Norwegian coastal areas was made in 2004, and recommendations have been made based on specific relevant scenarios.

### *1.4. Previous experience*

Norway has not been involved in any major marine incidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Norway has some specialised equipment for monitoring of marine spills of HNS. Norway has vessels for monitoring the sea area (gas measurement) and taking samples. There is a specialised aircraft for oil spill detection, but no aircraft or vessel dedicated to handling HNS in a specific way.

### *2.2. Response capability*

Norway's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Norway does not have any specialised vessels or special storage device for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Norway does not have a specialised response team for marine incidents involving HNS. However, this is under consideration linked to the evaluation of whether or not Norway should ratify the OPRC-HNS protocol.

### *2.5. Scientific support*

Norway does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

Norway has some exercises and training involving HNS.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Norway cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | Yes | Yes | No | Very limited | Yes | No | No | No | No | Yes |

# Poland



Competent national authority responsible for marine pollution by HNS:

*The Director of the Maritime Office (depending on the area, this can be a director from Gdynia, Slupsk or Szczecin offices)*

In this particular task he is assisted by the Maritime Search and Rescue Service (SAR), the organisation which prepares and also executes the contingency plan for responding to marine pollution.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

Poland aims to establish a legal framework for the Maritime Emergency Response Team (so far it is based on the operational agreement between the SAR Service and the Commander of the State Fire Service). At present the National System for Detection and Warning of Hazardous Contamination (SWS) is under preparation. Maritime Search and Rescue Service and maritime administration information centres are included in the SWS.

### *1.1. OPRC-HNS Protocol 2000*

Poland has ratified the OPRS-HNS Protocol 2000.

### *1.2. National contingency plan*

The national contingency plan and the port/facility contingency plans for big harbours cover response to HNS.

### *1.3. Risk assessment*

Poland participates in the project named BRISK related to the sub-regional risk of spill of oil and hazardous substances in the Baltic Sea. BRISK will last three years and is co-financed by the European Union within the Baltic Sea Region Programme (BSRP) 2007-2013. Its total budget amounts to around EUR 3.3 million. The project area covers all transnational maritime areas in the Baltic, divided into 6 sub-regions. All Baltic Sea countries participate in BRISK. Danish Admiral Fleet leads the project.

As part of the local contingency planning a threat identification analysis has been made for particular chemicals, including the type of chemical and probable quantity involved. This covers response plans for big Polish harbours, such as Gdansk, Gdynia, Szczecin and Swinoujscie.

Additionally, there is a list of HNS cargo handling terminals which are obliged to have their own preparedness and response systems. For areas with heavy traffic, the vessel traffic monitoring systems (VTMS) are established where the Dangerous Goods Manifest is obligatory as well as reporting procedures related to IMO Res. A.851(20).

### *1.4.. Previous experience*

Poland has not been involved in any marine incidents with HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Poland has the following specialised equipment for monitoring of marine spills of HNS:

- Aerial surveillance: without remote HNS sensing equipment;
- Vessel surveillance: stationary gas detection system for oxygen, hydrogen sulphide, carbon monoxide, ammonia, explosives;
- HNS forecasting models: only for floaters (There is no 3-D model);
- Other measuring devices: pH meter, dose rate meter, photoionization detector (PID), conductivity meter;
- Sampling devices (including bottom sampling devices): portable tube dragger system.

The monitoring is an integral part of the response action, appointed in the national contingency plan. Sampling and chemical analyses should be done both by responders for operational purposes and the State Monitoring System for the purpose of assessing the consequences. Air and water surveillance systems can be put in place that are similar to oil incident surveillance systems, but their presence has to be preceded by the safety assessment.

The monitoring capability of the National System for Detection and Warning of Hazardous Contamination (SWS) is still unknown as the system itself is under development.

### *2.2. Response capability*

Poland's capability for responding to marine incidents involving HNS is rather limited and mainly relies on the same resources as for oil pollution response.

Maritime Search and Rescue Service are able to search and recover HNS in packaged form. Poland has a number of over-packs (over-drums) and has access to multipurpose, 20' containerised storage tanks for about 70 different chemicals.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Navy HNS teams as well as National State Fire System teams are equipped with full Personal Protective Equipment (PPE). A multipurpose response vessel is equipped with escape apparatus and breathing apparatus.

Poland does not have any specialised vessels for dealing with marine incidents involving HNS. Poland's main oil response vessel has an installation for detecting some substances but is not gas-tight. Some Navy vessels have gas-tight citadels and are prepared for quick escape from a hazardous atmosphere, but as they have different responsibilities the possibilities for using them have not been explored. However, the Navy is still appointed in the national contingency plan as a cooperating institution.

### *2.4. Response teams*

Poland does not have a specialised response team for marine incidents involving HNS.

In case of an incident, there would be direct operational cooperation with the chemical response team from the Provincial State Fire Service units of the cities of Gdansk, Gdynia and Szczecin. This has been agreed between the SAR Service and the Commander of the State Fire Service and regional SFS commanders of Gdansk, Olsztyn and Szczecin.

Within the new SWS system, in special circumstances some Polish Navy HNS teams could be used.

### *2.5. Scientific support*

Poland does not have a specialised body which provides scientific advice on marine incidents involving HNS.

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quan-tity | Characteristics | Location | Contact point |
| KAPITAN POINC | 1 | Multipurpose vessel (not gas tight), stationary gas detection system | Gdynia | Maritime Search and Rescue Service |
| Portable containerised HNS tank | 1 | 24 $m^3$, 70 hazardous substances | Gdynia | State Fire System |
| Overpacks | 8 | Different types of overdrums | Gdynia | Maritime Search and Rescue Service |

In the framework of the National Contingency Plan there is an advisory body. A Research Group is nominated in advance by the competent minister, and can be activated within the plan. The chemical (HNS) expert is a member of this team. The members of the SWS may also respond to requests for advice.

The following specialised scientific support for HNS spills is available in Poland:

- Human health and safety: the SWS and the Research Group
- Environmental toxicology: the SWS and the Research Group
- Salvage/response: limited extent
- Other: we plan to use an international assistance within the Helsinki Convention as well as the MAR-ICE Network (EMSA)

## 3. TRAINING AND EXERCISES

Poland does not have special training courses available in this field. In the framework of the new SWS system some exercises will be provided. The national table top exercise was conducted in November 2007 (SWS exercises cover only communication and reporting procedures), an equipment exercise related to the maritime scenario and chemical weapons was executed in 2009 and the exercise related to the search and recovery of packaged goods lost at sea is planned for 2010.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Poland cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | No | No | Limited | Yes | No | Yes | No | Limited | No |

# Portugal

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:

*The Directorate-General of the Maritime Authority (Direcção-Geral da Autoridade Marítima, DGAM), under the auspices of the National Maritime Authority and the Ministry of Defence*

The DGAM carries out, at national level, the coordination of the response to marine pollution at sea and ashore.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

Portugal is trying to get more information in order to improve its preparation to respond in case of an HNS accident.

### *1.1. OPRC-HNS Protocol 2000*

Portugal has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Portugal covers response to HNS in their national contingency plan. The Portuguese Contingency Plan for combating pollution by oil and other harmful substances at sea and along the coastline, called "Plano Mar Limpo" (Clean Sea Plan), includes Regional Emergency Plans and Local Emergency Plans.

### *1.3. Risk assessment*

Portugal has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Portugal has been involved in some minor marine incidents with HNS (see table below).

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Portugal does not have any specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Portugal's capability for responding to marine incidents involving HNS is very limited and mainly relies on the same resources as for oil pollution response.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1978 | ALCHIMIST EDEN | Ericeira | Undefined HNS substances | Unknown | 1,600,000L |
| 1997 | MSC Clara | Off Azores, Atlantic | Undefined HNS substances (flammable, combustive, poisonous, radioactive and corrosive products, among others) | Unknown | 74 containers, some of them with undefined HNS substances |

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Portugal does not have specialised safety equipment, vessels or special storage devices for dealing with marine incidents involving HNS.

### *2.4. Response teams*

Portugal does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Portugal does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

Portugal has no regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Portugal cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | No | Yes, minor | Very limited | No | No | No | No | No | No |

# Romania



Competent national authority responsible for marine pollution by HNS:

*The Ministry of Environment and Forestry is responsible for the coordination of activities connected with national response functions, and the elaboration and updating of the National Contingency Plan*

The Ministry of Transports and Infrastructure, through the Romanian Naval Authority (RNA), has the lead role of the Maritime Division for at-sea spill response operations.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Romania has not ratified the OPRC-HNS Protocol 2000, but has initiated the necessary internal procedures in order to achieve this.

### *1.2. National contingency plan*

In 2006, Romania approved a common national contingency plan for both oil and HNS by the Governmental Decision 893/2006.

### *1.3. Risk assessment*

The risk assessment specifically aimed at marine transport of HNS is a part of the PSO Pre-Accession Programme (PPA02/RM/7/7).

According to the National Contingency Plan, HNS cargo operators must have their own preparedness and response plans. As per national legislation, all masters of vessels arriving in a Romanian maritime port have to send a notification to a vessel traffic system, which includes details about dangerous or polluting goods carried on board. All vessels that have dangerous goods on board when entering Romanian maritime ports are obliged to be assisted by an additional tug for manoeuvring.

### *1.4. Previous experience*

No.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

In Romania, the monitoring of marine incidents involving HNS is assured by some companies, which are part of the Maritime Division. These companies have specialised teams and equipment for air and water monitoring. Visual monitoring of floating coloured substances and for locating floating packaged goods can be carried out from vessels.

Samples can be taken at sea and brought for analysis to the National Institute for Marine Research and Development "Grigore Antipa", the Rompetrol Quality Control or to the Environmental Protection Agency. The Rompetrol Quality Control also has mobile devices for air monitoring and for noise testing.

### *2.2. Response capability*

Romania's capability for responding to marine incidents involving HNS is very limited and relies on the same resources as for oil pollution response. As a conclusion of the Matra project PPA02/RM, when it is suitable and safe to do so, existing oil spill equipment is available to support a marine HNS spill.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Romania does not have specialised safety equipment for HNS response. Boom towing vessels can't be used in HNS response which involves toxic gas emissions because they are not gas tight and the personnel do not have protective equipment. According to technical specification, the port

oil booms can be used for some HNS substances: heptane, mineral turpentine, ethyl gas alcohol, toluene, xylene, styrene.

### *2.4. Response teams*

Romania does not have a specialised response team for marine incidents involving HNS. Romania is going to arrange theoretical training courses for personnel.

### *2.5. Scientific support*

Some companies (private or state owned), as part of the Maritime Division, can provide scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

As a part of the Matra PPA02/RM project, an introductory course on the National Contingency Plan was organised for the institutions with responsibilities in the National Plan application. Moreover, in 2004 and as a part of the same project, a complex exercise was organised to test the structure of the Oil and HNS Spill Emergency Response Plan. In November 2007 the exercise "Ovidius 2007", which included a HNS scenario, was organised by the Constanta County Inspectorate for Emergency Situations.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Romania cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | Yes | Yes | No | Very limited | Yes | No | No | No | Yes | Yes |

# Slovenia



Competent national authority responsible for marine pollution by HNS:

*The Environmental Agency (EA) under the Ministry for Environment and Spatial Planning (MESP) and the Administration of the Republic of Slovenia for Civil Protection and Disaster Relief (ACPDR) under the Ministry of Defence (MD)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Slovenia has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Slovenia does not specifically cover response to HNS in their national contingency plan. The new National Oil and Chemical Spill Contingency Plan for Slovenia (NOCSCP) will cover also response to incidents with HNS in the marine environment, but has not yet been implemented.

### *1.3. Risk assessment*

A risk assessment aimed at marine transport of HNS was conducted in 2005 as a part of the development of a new National Oil and Chemical Spill Contingency Plan for Slovenia (NOCSCP). The risk assessment comprised hazard identification, hazard analysis and sensitivity analysis.

### *1.4. Previous experience*

Slovenia has not been involved in any marine incidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Slovenia does not have any specialised equipment or vessel for monitoring of marine spills of HNS.

### *2.2. Response capability*

Slovenia's capability for responding to marine incidents involving HNS is very limited and relies on the same resources as for oil pollution response. As a conclusion of the Matra project PPA02/RM, when it is suitable and safe to do so, existing oil spill equipment is available to support a marine HNS spill.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Slovenia does not have any specialised safety equipment, vessels or special storage devices for dealing with incidents involving HNS.

### *2.4. Response teams*

Slovenia does not have a specialised response team for incidents involving HNS in the marine environment.

### *2.5. Scientific support*

Slovenia does not have a specialised body which provides scientific advice on marine incidents involving HNS based on a regular contract.

Expert support is available at the Administration of the Republic of Slovenia for Civil Protection and Disaster Relief (ACPDR). Non-formal cooperation is established with the Faculty of Maritime Studies and Transport (University of

Ljubljana), which has expert and simulation capacities (Transas–PISCES simulator) for incidents involving HNS in the marine environment.

## 3. TRAINING AND EXERCISES

No information was provided.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Slovenia cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | No | Yes | No | Very limited | No | No | No | No | Yes | No |

# Spain



Competent national authority responsible for marine pollution by HNS:

*The Directorate General of the Merchant Marine (DGMM), part of the Ministry of Transport and Public Works*

On-site coordination and response are provided by the Sub-director General for Maritime Safety and Pollution Control under the Directorate General of the Merchant Marine through a network of Maritime Rescue Coordination Centres (MRCC). The MRCC at Madrid provides central control and establishes links with foreign coordination centres.

Spain is divided in 12 coastal Autonomous Regions with environmental competencies. If marine pollution reaches the shore, they are the main responders. In the event of a serious spill, when more than one Autonomous Region is affected, the on-site coordination is jointly performed by the Ministry responsible in the Autonomous Region and the Government Delegate responsible for the area.

The Spanish Marine Safety Agency (SASEMAR), under the overall coordination of the DGMM, provides maritime SAR, marine pollution response at sea, and maritime traffic control services. Response to pollution at sea is provided by SASEMAR by coordination of air and sea resources and any other means from different administrations. SASEMAR has 22 regional MRCC around the coast.

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

Spain is currently working in order to improve and progress in preparedness and response to HNS pollution incidents.

### *1.1. OPRC-HNS Protocol 2000*

Spain has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Spain does not specifically cover response to HNS in its National Contingency Plan.

### *1.3. Risk assessment*

Spain has not made any risk assessment specifically aimed at marine transport of HNS.

### *1.4. Previous experience*

Spain has been involved in some marine incidents with HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1987 | CASON | Off Finisterre | A number of hazardous substances, including diphenyl methane diisocyanate, ortho-cresol, aniline, and sodium | Unknown | 1,100 tonnes |
| 1999 | JESSIE MAERSK (Current name: MAHARSHI KRISHNATREYA) | Off the east side of Gibraltar | Ammonia (gas release) | Gas/evaporator | Unknown |

| | | | | | |
|---|---|---|---|---|---|
| 2001 | BALU | Bay of Biscay | Sulphuric acid | Dissolver | 8,000 tonnes |
| 2007 | OSTEDIJK (Current name: GLOBAL HELIOS) | Near Cape Viveiro, Galicia | Fertilizer | Sinker/dissolver | 6,000 tonnes |
| 2008 | MAERSK NEWPORT | Port of Algeciras | Oxygen; acetylene | Gas/evaporator | 1 oxygen and 2 acetylene bottles exploded |

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Spain does not have any specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Spain's capability for responding at sea to marine incidents involving HNS is rather limited and mainly relies on the same resources as for oil pollution response.

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Spain has two new multipurpose vessels, which have pressurised bridges and gas detector systems for HNS.

### *2.4. Response teams*

Spain does not have a specialised response team for marine incidents involving HNS.

### *2.5. Scientific support*

Spain does not have a specialised body which provides scientific advice on marine incidents involving HNS.

For remote product information, the DGMM signed in 2006 an agreement with the Spanish Chemical Industry Association (FEIQUE) on voluntary cooperation between the chemical industry and the national competent authorities.

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Multipurpose vessels (sister ships): CLARA CAMPOAMOR and DON INDA | 2 | Bollard pull of 234 MT; which have pressurised bridges and gas detector systems for HNS; 1,750 $m^3$ of storage capacity each one | Valencia (1) Corcubión (1) | Directorate General of the Merchant Marin (DGMM) |
| Multipurpose vessels (sister ships): LUZ DE MAR and MIGUEL DE CERVANTES | 2 | Bollard pull of 128 MT 293 $m^3$ of storage capacity each one | Algeciras (1) S.C. de Tenerife (1) | Directorate General of the Merchant Marin (DGMM) |
| Oil recovery vessel: URANIA MELLA | 1 | 3,100 $m^3$ of storage capacity | Coruña | Directorate General of the Merchant Marin (DGMM) |
| Multipurpose vessels: PUNTA MAYOR and PUNTA SALINAS | 2 | Bollard pull of 81MT; Bollard pull of 98 MT; 240 $m^3$ of storage capacity each one | Castellón (1) S.C. de Tenerife (1) | Directorate General of the Merchant Marin (DGMM) |

## 3. TRAINING AND EXERCISES

Spain has communication exercises undertaken periodically.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Spain cannot provide assistance to other Member States in case of an HNS spill incident.

## 5. SUMMARY

See table below.

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | No | No | Yes | Limited | No | No | No | Yes | No | No |

# Sweden



Competent national authority responsible for marine pollution by HNS:
*The Swedish Coast Guard*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

Sweden has ratified the OPRC-HNS Protocol 2000.

### *1.2. National contingency plan*

Sweden covers response to HNS in their national contingency plan.

### *1.3. Risk assessment*

Sweden has made a risk assessment including marine transport of HNS. A new study is being carried out through the on-going EU project BRISK for the whole Baltic Sea.

### *1.4. Previous experience*

Sweden has been involved in marine incidents involving HNS.

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

Sweden has specialised equipment for monitoring of marine spills of HNS.

### *2.2. Response capability*

Sweden's capability for responding to marine incidents involving HNS is based on a number of emergency responders, specifically trained to deal with marine pollution from HNS.

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 2000 | MARTINA | Off Hoganas | Hydrochloric acid | Unknown | 600 tonnes |
| 2003 | FU SHAN HAI * | Off Bornholm Island, Denmark | Potash | Dissolver | 66,000 tonnes |
| 2007 | ANNABELLA | Near Gotland Island | Butylene | Gas/evaporator | Unknown |
| 2008 | CRYSTAL TOPAZ | Malmo | Ethanol | Unknown | 1,000 tonnes |
| 2010 | LINDA | Between Oland and northern Gotland | Inflammable liquid | Unknown | 1 container |

** The accident happened in Denmark's waters, but Sweden was involved in the response.*

### *2.3. Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

Sweden has specialised safety equipment for HNS response (protective suits, breathing apparatus, sanitation stations on-board our response vessels).

Several of the oil response vessels have an overpressure system and a special gas filter for use in hazardous atmosphere. The vessel KBV 003, delivered in May 2010, is classified as Chemical Recovery vessel.

### *2.4. Response teams*

The Swedish Coast Guard (SCG) have specialised response teams for marine incidents involving HNS, consisting of 70 emergency responders trained for water diving, fire fighting and chemical spill response.

The SCG also has a contract with six municipal fire brigades along the coastline, each of which can provide a team of six fire fighters that are specially trained for HNS response at sea.

### *2.5. Scientific support*

Sweden does not have a specialised body which provides scientific advice on marine incidents involving HNS.

## 3. TRAINING AND EXERCISES

Sweden has regular exercises and training programmes for vessels, aircrafts and personnel involved in HNS pollution response: Annual training is provided for emergency responders

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

Sweden could offer assistance to other Member States in case of an HNS spill incident, using KBV 003 (after training).

| Vessels and special storage devices/storing arrangements in place for recovered HNS | | | | |
|---|---|---|---|---|
| Equipment | Quantity | Characteristics | Location | Contact point |
| Vessel KBV 003 | 1 | Stainless steel tanks with 250 $m^3$ of storage capacity | Southern Baltic Sea | Swedish Coast Guard |

## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | Yes | No | Yes |

# United Kingdom

Policy and Operational Response Capacities for HNS Marine Pollution 2010

Competent national authority responsible for marine pollution by HNS:
*The UK Maritime and Coastguard Agency (MCA)*

## 1. POLICY AND PREPAREDNESS TO HNS MARINE POLLUTION

### *1.1. OPRC-HNS Protocol 2000*

The United Kingdom has not ratified the OPRC-HNS Protocol 2000. The UK is considering legislation to achieve the objectives stated in the HNS Protocol and are drafting a methodology for this. The UK hopes to accede to the OPRC-HNS Protocol 2000 in the near future.

### *1.2. National contingency plan*

The United Kingdom details the response to HNS in their national contingency plan. The National Contingency Plan for Marine Pollution from Shipping and Offshore Installations covers both oil and HNS.

### *1.3. Risk assessment*

The United Kingdom has carried out a substantive risk assessment with respect to the marine transport of HNS in the UK Pollution Control Zone. That work presents quantitative estimates of the risks of spills of bulk chemicals from chemical tankers in UK waters. The estimates show the geographical distribution of the risk broken down by accident type, spill size, pollution hazard and behaviour when released. Estimates are also provided on the geographical distribution of gas carrier accidents in UK waters, broken down by accident type.

A further risk assessment into the fate, behaviour and impact of HNS in the marine environment is now complete. That work delivered a fate and effects model for higher risk HNS allowing responders to achieve an understanding of the behaviour of HNS spilt into the sea and the subsequent effects of generic HNS on the environment given specific prevailing conditions of water depth, sea energy conditions, wind speed and direction and other factors which may influence behaviour and impact. A guidance document has been developed to support the rationale of the model, the status of model algorithms, guidance on variable data input, interpretation of model output - including confidence levels.

### *1.4. Previous experience*

United Kingdom has been involved in dealing with a number of marine accidents involving HNS. Summary details of the more significant incidents are presented in the table below:

| Year | Vessel | Location | Substance | | |
|---|---|---|---|---|---|
| | | | Name | Chemical behaviour | Quantity spilled |
| 1991 | STORA KORSNAS LINK I | 10 nautical miles east off Teesside, England | Sodium chlorate | Unknown | 40 tonnes |
| 1993 | GRAPE ONE | Off Devon | Xylene | Floater/evaporator | 3,000 tonnes |
| 1999 | EVER DECENT | Off Dover | Sodium cyanide, potassium cyanide | Dissolver | Unknown |

| | | | | | |
|---|---|---|---|---|---|
| 1999 | Multitank ASCANIA (Current name: DEFNE D.) | Pentland Firth (north of Scotland) | Vinyl acetate | Evaporator | 1,750 tonnes |
| 2000 | IEVOLI SUN * | Channel, 60 km west of Cherbourg | Styrene, methyl ethyl ketone, isopropyl alcohol | Floaters | Styrene: 3998 tonnes; Methyl ethyl ketone: 1027 tonnes; Isopropyl alcohol: 996 tonnes |
| 2000 | NEPTUNIA | English Channel | Trimethyl acetylenene chloride | Unknown | Unknown |
| 2001 | A.B. BILBAO | Off Margate, English Channel | Ferrosilicon | Unknown | 3,300 tonnes |
| 2001 | DUTCH AQUAMARINE | English Channel | Mixed chemical cargo, including 4,400 tonnes of acetic acid | Unknown | No pollution reported |
| 2001 | DUTCH NAVIGATOR (Current name: WILSON CAEN) | Bristol Channel, Avonmouth | Hydrofluorosilicic acid | Unknown | 2 damaged ISO tanks |
| 2001 | HAPPY LADY (Current name: PRETTY LADY) | Off Shoeburyness, UK | Butane | Gas/evaporator | Unknown |
| 2001 | KILGAS CENTURION (Current name: ANGAS) | Off Great Yarmouth | Propane | Gas/evaporator | 1 tonne |
| 2001 | ROSEBANK (Current name: ROSETHORN) | Off the Farne Islands | Bagged and palletised bags of NPK fertiliser and calcium nitrate | Unknown | Unknown |
| 2001 | DINA | Southwest coast of Wales | Calcium fluoride | Unknown | 2,430 tonnes |
| 2002 | WESTER TILL (Current name: JIMDAL KAMLA) | About 6.5 nautical miles south of Beachy Head | Various dangerous goods | Unknown | Unknown |
| 2003 | JAMBO | Entrance to Loch Broom, Ullapool, northwest coast of Scotland | Zinc sulphide | Unknown | 1,000 tonnes |
| 2006 | ECE | 50 nautical miles (90 km) west of Cherbourg, Les Casquets | Phosphoric acid | Dissolver | 10,000 tonnes |
| 2006 | ENNERDALE | Southampton | Propane | Gas/evaporator | Unknown |
| 2007 | MSC NAPOLI | North of Trégastel, Côtes d'Armor | Undefined toxic substances | Unknown | Minimal |
| 2009 | NEWCASTLE | Falmouth | Ferrous sulphate (resulting in sulphuric acid) | Unknown | None |
| 2010 | ESTRADA | Harwich | Scale Inhibitor | Dissolver | None |
| 2010 | MT TRANS ARCTIC | Tees Port | Benzene | Evaporator/dissolver/floater | 0.5 tonne |

** The accident happened in French waters, but United Kingdom was involved in the response.*

## 2. RESPONSE TO HNS MARINE POLLUTION

### *2.1. Monitoring capability*

The United Kingdom has in its emergency response stockpile specialised monitoring and detection equipment for mobilisation in incidents involving marine spills of HNS.

The following resources are available in the United Kingdom:

- Aerial surveillance: Side Looking Airborne Radar (SLAR), Infrared/ultraviolet (IR/UV);
- Vessel surveillance: no dedicated craft;
- HNS forecasting models: CHEMSIS spill model for fate and trajectory;
- Devices for measuring toxic atmosphere: Access to contract laboratories;
- Other measuring devices (e.g. oxygen meter, pH meter, flash point meter, etc): Access to contract laboratories;
- Sampling devices (including bottom sampling devices): Only through contract laboratories.

### *2.2. Response capability*

The United Kingdom's capability for responding to marine incidents involving HNS is under development. The United Kingdom's stockpiles include specific equipment for response to spills of HNS.

Response capability consists of three layers. Layer one comprises remote advice provided by an accredited responder and/or nationally recognised chemical hazards advice providers. Layer two comprises a response provided by a UK accredited HNS responder. Layer three requires national coordination of accredited HNS responders.

### *2.3 Specialised safety equipment, vessels and special storage devices for responding to HNS incidents*

The United Kingdom has the following specialised safety equipment for HNS response:

- Gas protection suits to cover wearer with breathing apparatus (BA);
- SC1 Splash suits;
- BA Skid to feed four lines to gas tight suits;
- Decontamination shelter;
- Dräger multi warn detectors;
- Photo ionisation detectors;
- True defender spectrometer.

The United Kingdom does not have any specialised vessels for dealing with marine incidents involving HNS.

### *2.4. Response teams*

The United Kingdom does not have a specialised response team for marine incidents involving HNS. Response would be provided via industry, through a combination of recognised chemical hazard experts, salvage companies, and UK accredited responders.

### *2.5. Scientific support*

The United Kingdom has access to scientific and technical advice on marine incidents involving HNS through a contract with the National Chemical Emergency Centre (NCEC) as well as a number of call off contracts for specialist HNS advice:

- Human health and safety: links with UK Health and Safety's Health Protection Agency, Chemical hazards and poisons division;
- Environmental toxicology: through the Centre for Environment, Fisheries & Aquaculture Science (CEFAS) laboratory, Lowestoft;
- Salvage/response: MCA HNS contractors.

## 3. TRAINING AND EXERCISES

The United Kingdom does not have any training courses available in this field.

## 4. RESOURCES AVAILABLE TO OTHER MEMBER STATES IN CASE OF REQUEST FOR ASSISTANCE

The United Kingdom can provide the following assistance to other Member States in case of an HNS spill incident:

- Specialized equipment;
- Experts in HNS: MCA staff, NCEC, CEFAS, the UK, NCP Environment Group network;
- Aerial surveillance: SLAR, IR/UV.

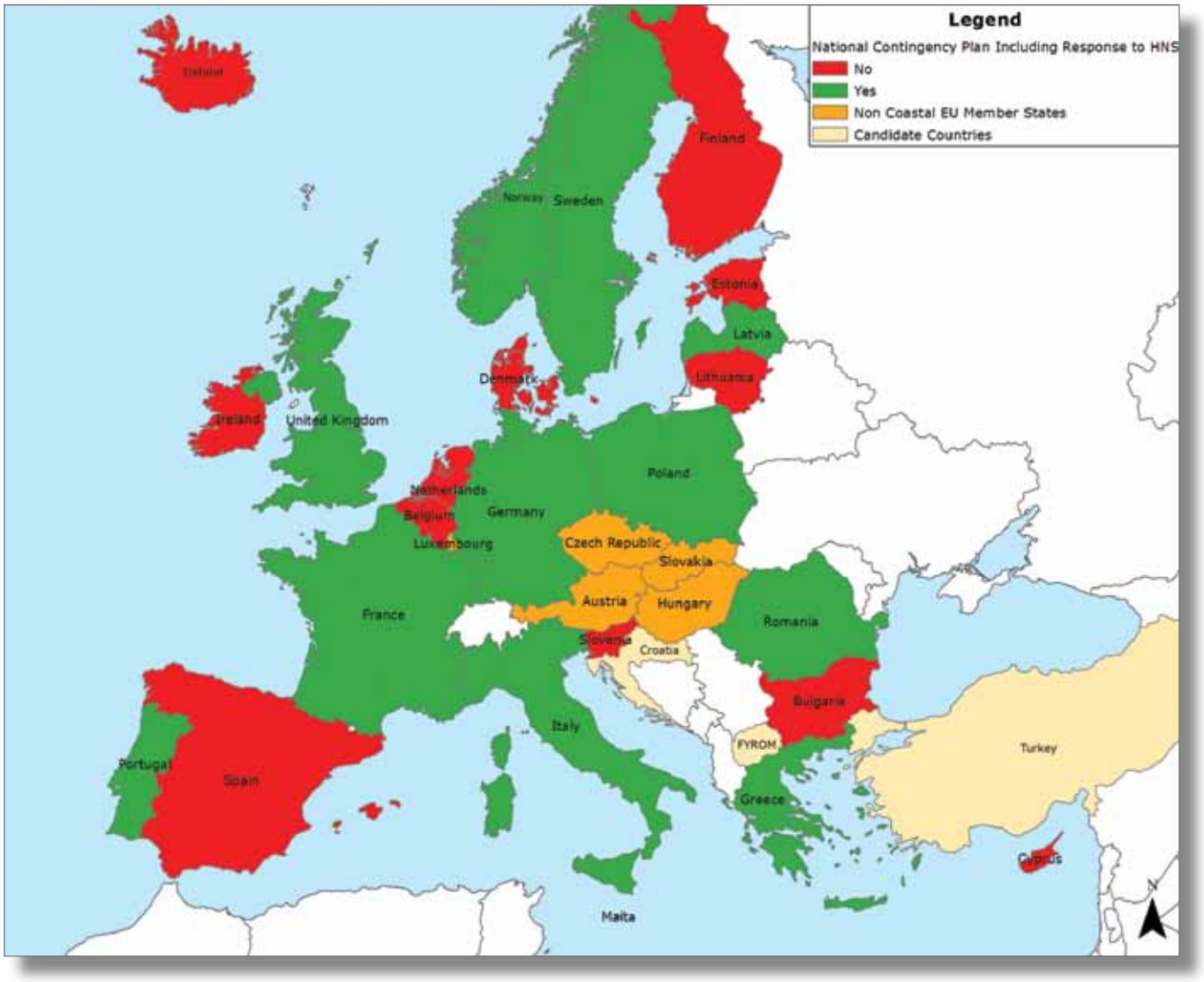
## 5. SUMMARY

| Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|
| Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| No | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | No | Yes | No |

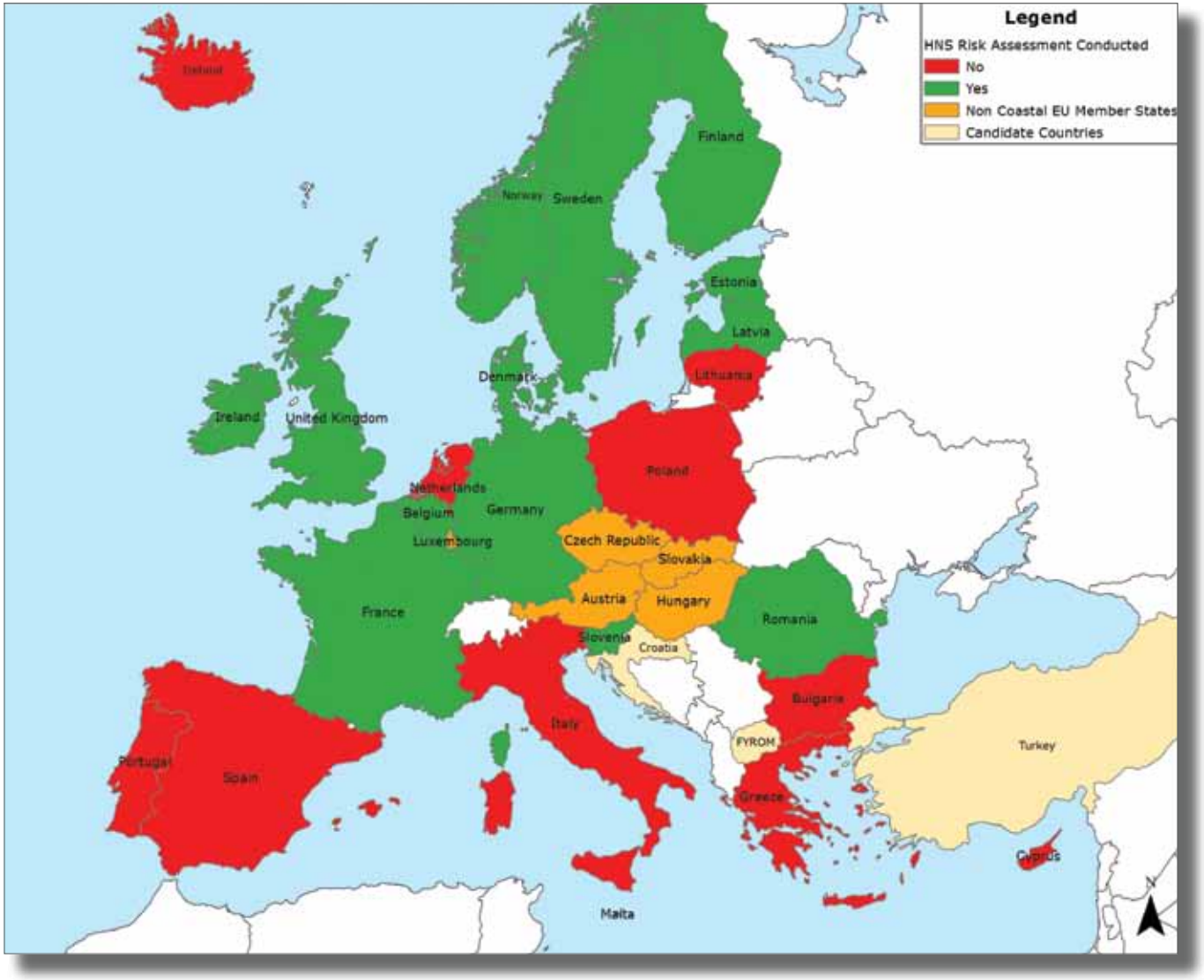
# Overview of the EU Member States policies and operational response capacities for HNS marine pollution

| Country | Preparedness | | | | Response capacities | | | | | | Training and exercises |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ratification of the OPRC-HNS Protocol 2000 | National Contingency Plan covers HNS | HNS Risk assessment conducted | Previous experience marine HNS incidents | Response capability | Monitoring capability | Response teams | Specialised safety equipment | Specialised response vessels | Scientific support | |
| BELGIUM | No | No | Yes | Yes | Limited | Yes | No | Yes | No | Yes | No |
| BULGARIA | No | No | No | Yes, minor | Very limited | Yes, limited | No | No | No | No | No |
| CYPRUS | No | No | No | No | Very limited | No | No | No | No | No | No |
| DENMARK | Yes | No | Yes | Yes | Very limited | Yes | No | Yes | No | Yes | Yes |
| ESTONIA | Yes | No | Yes | No | Very limited | Yes | No | No | No | No | No |
| FINLAND | No | No | Yes | Yes, minor | Limited | Yes | No | Yes | Yes | No | Yes |
| FRANCE | Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | No | Yes | Yes |
| GERMANY | Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | Yes | Yes | Yes |
| GREECE | Yes | Yes | No | Yes | Very limited | No | No | No | No | Yes, limited | No |
| ICELAND | No | No | No | No | Very limited | No | No | Yes | No | No | No |
| IRELAND | No | No | Yes | Yes | Very limited | No | No | No | No | No | Yes |
| ITALY | No | Yes | No | Yes | Limited | Yes | Yes | No | No | Yes | Yes |
| LATVIA | No | Yes | Yes | Yes, minor | Very limited | Yes, limited | No | No | No | Yes, limited | No |
| LITHUANIA | No | No | No | No | Very limited | No | No | No | No | Yes, limited | No |
| MALTA | Yes | Yes | Yes | Yes | Very limited | Yes, limited | Yes, limited | Yes, limited | No | No | Yes |
| THE NETHERLANDS | Yes | No | No | Yes | Limited | Yes | Yes | Yes | No | Yes | Yes |
| NORWAY | No | Yes | Yes | No | Very limited | Yes | No | No | No | No | Yes |
| POLAND | Yes | Yes | No | No | Limited | Yes | No | Yes | No | Yes, limited | No |
| PORTUGAL | Yes | Yes | No | Yes, minor | Very limited | No | No | No | No | No | No |
| ROMANIA | No | Yes | Yes | No | Very limited | Yes | No | No | No | Yes | Yes |
| SLOVENIA | Yes | No | Yes | No | Very limited | No | No | No | No | Yes | No |
| SPAIN | Yes | No | No | Yes | Limited | No | No | No | Yes | No | No |
| SWEDEN | Yes | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | Yes | No | Yes |
| UNITED KINGDOM | No | Yes | Yes | Yes | Specialised | Yes | Yes | Yes | No | Yes | No |

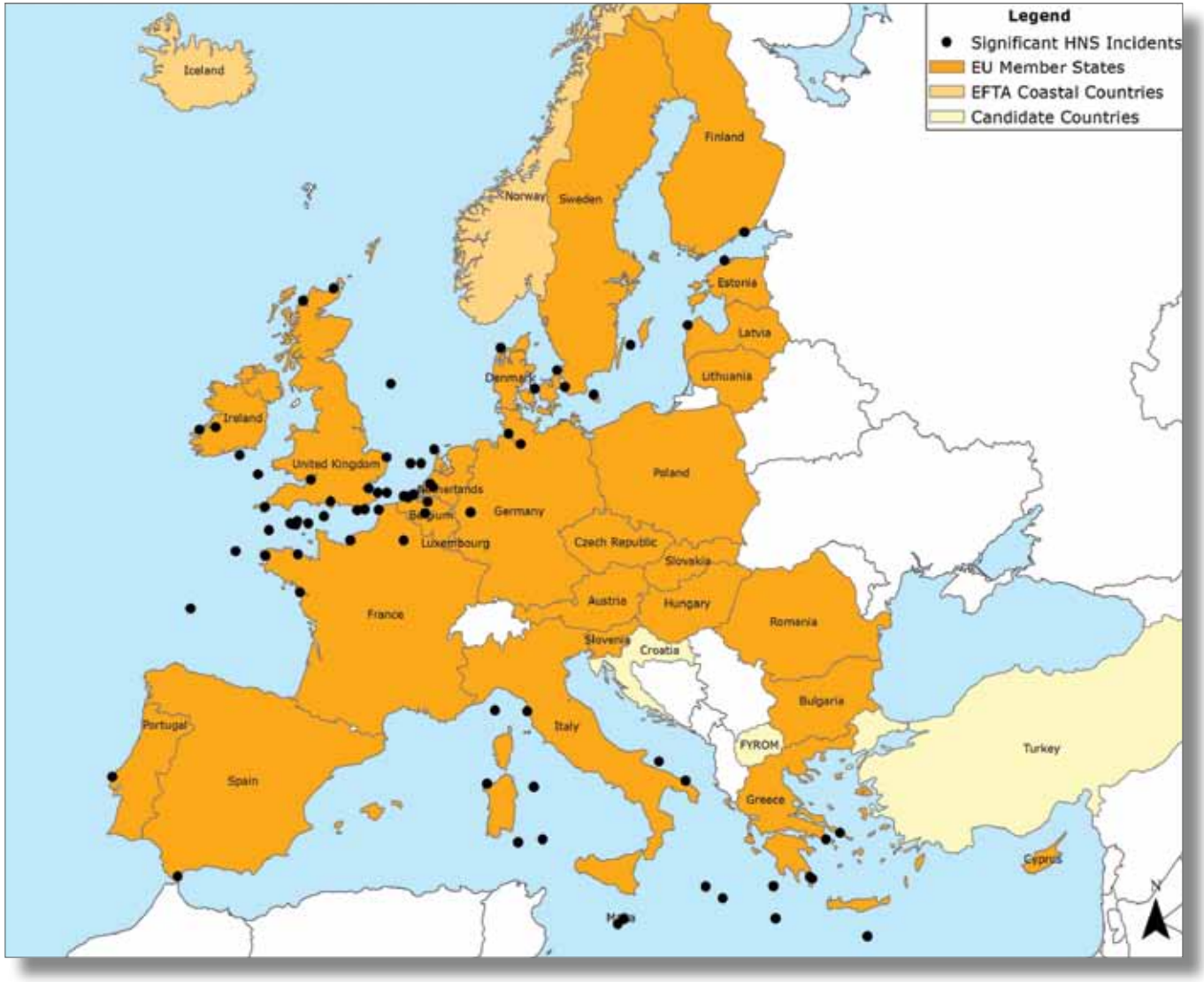
## NATIONAL CONTINGENY PLAN INCLUDING RESPONSE TO HNS



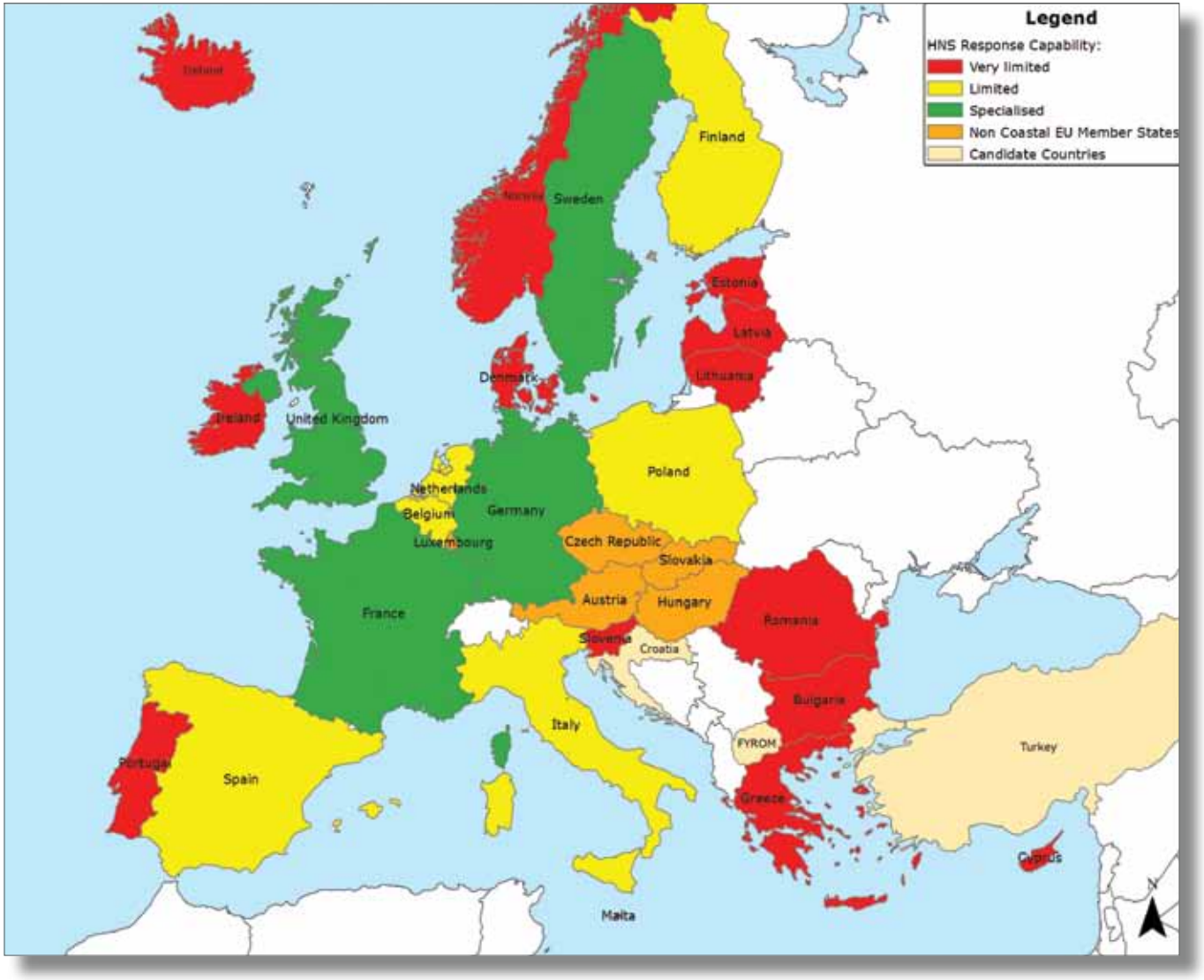
## HNS RISK ASSESSMENT CONDUCTED



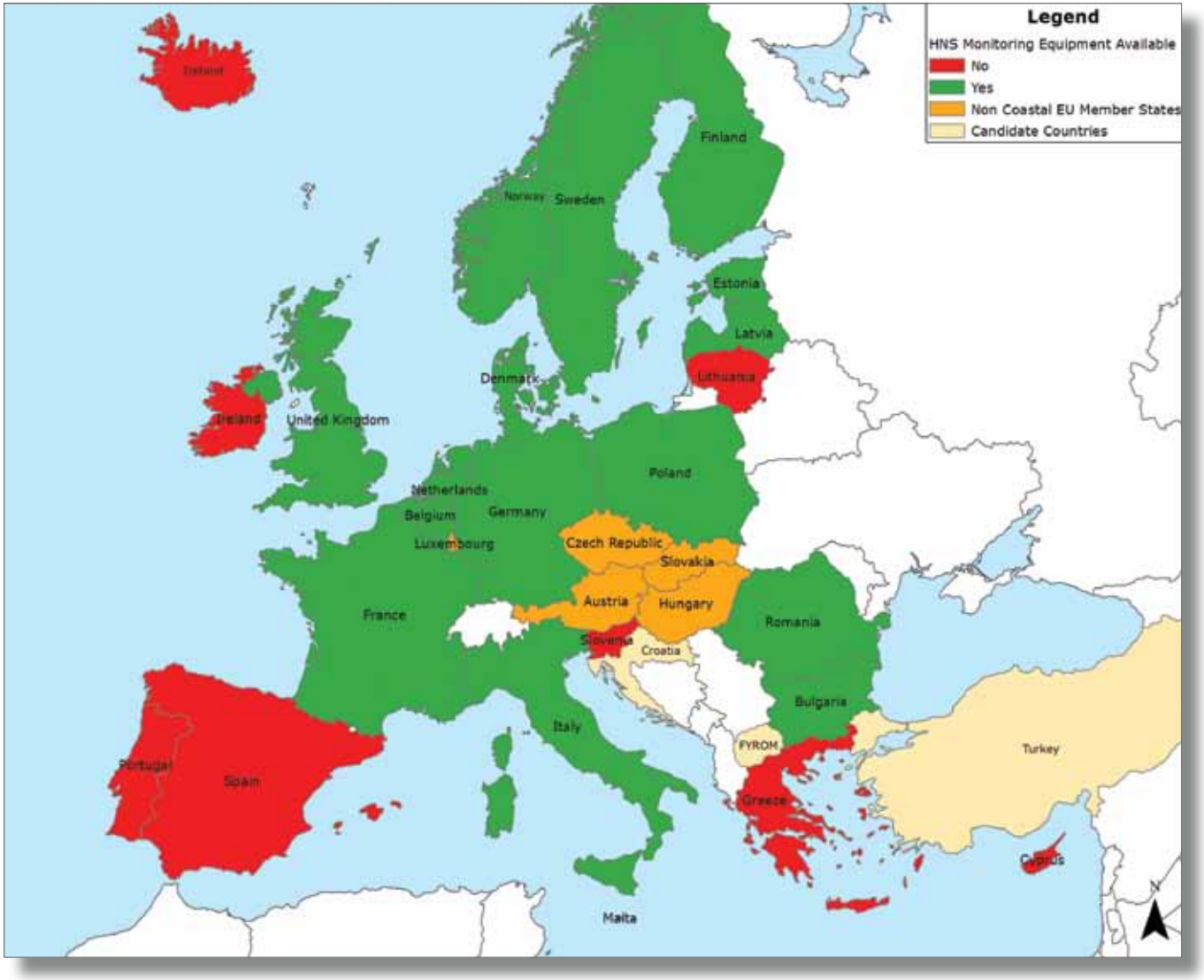
SIGNIFICANT HNS INCIDENTS (1978-2010)



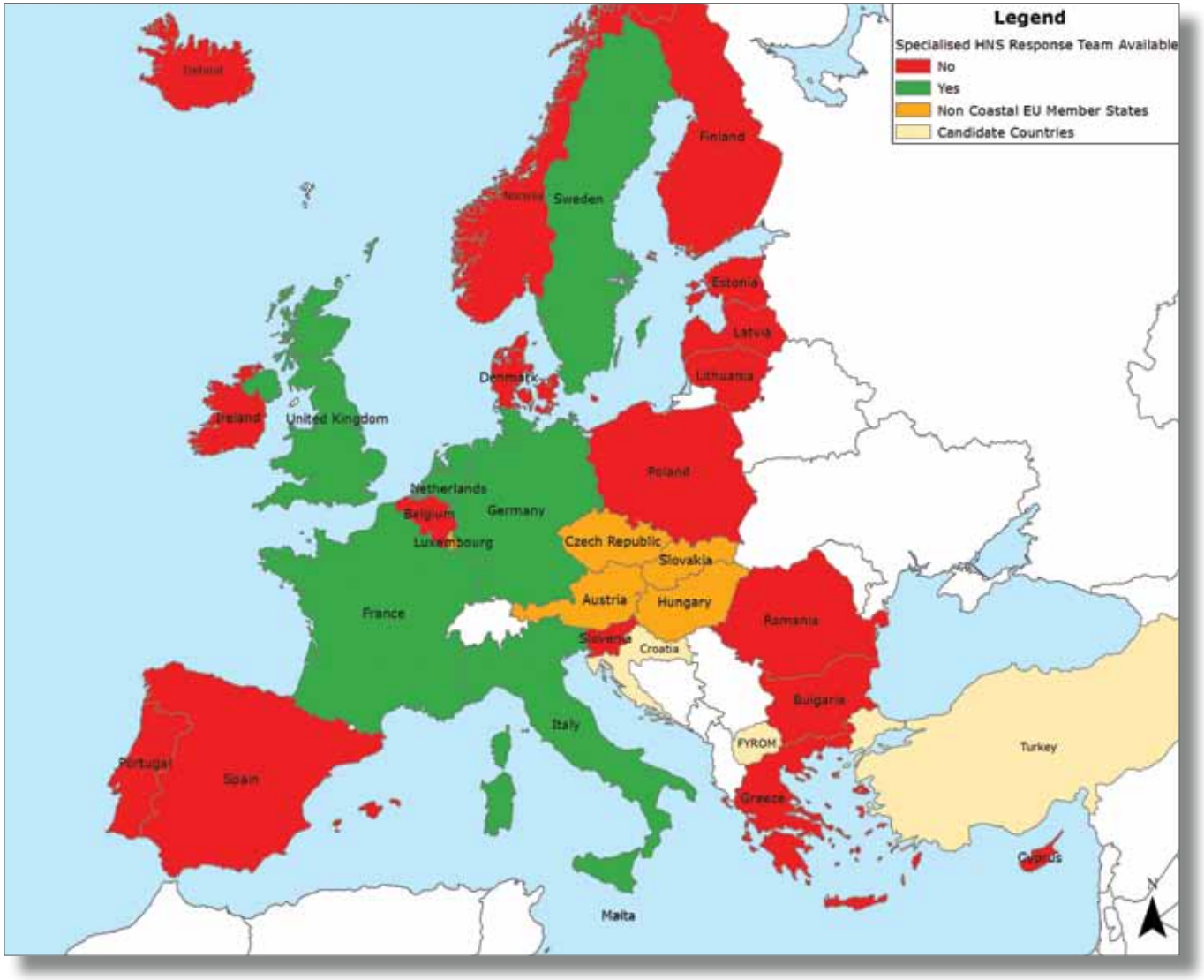
## HNS RESPONSE CAPABILITY



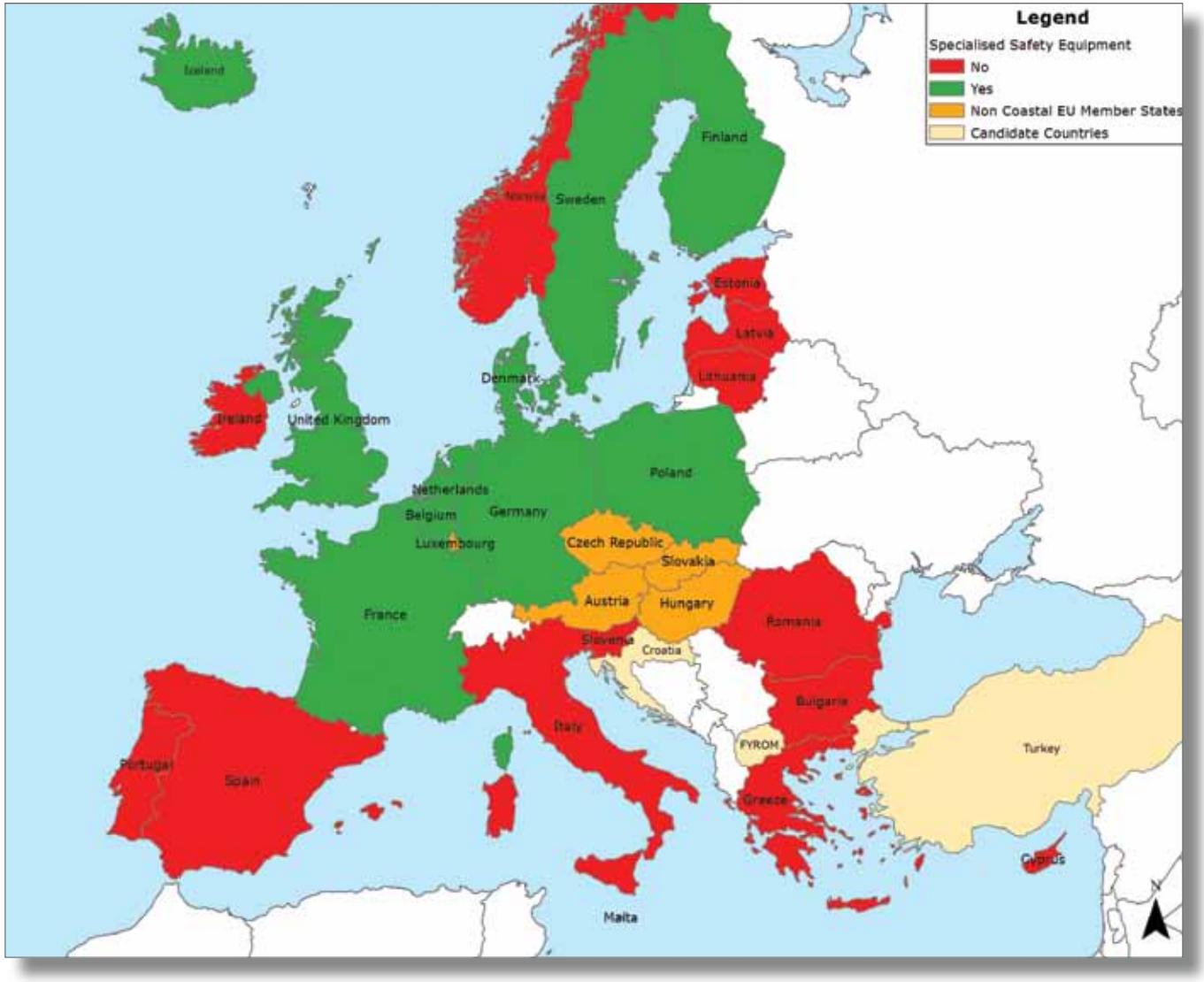
## HNS MONITORING EQUIPMENT AVAILABLE



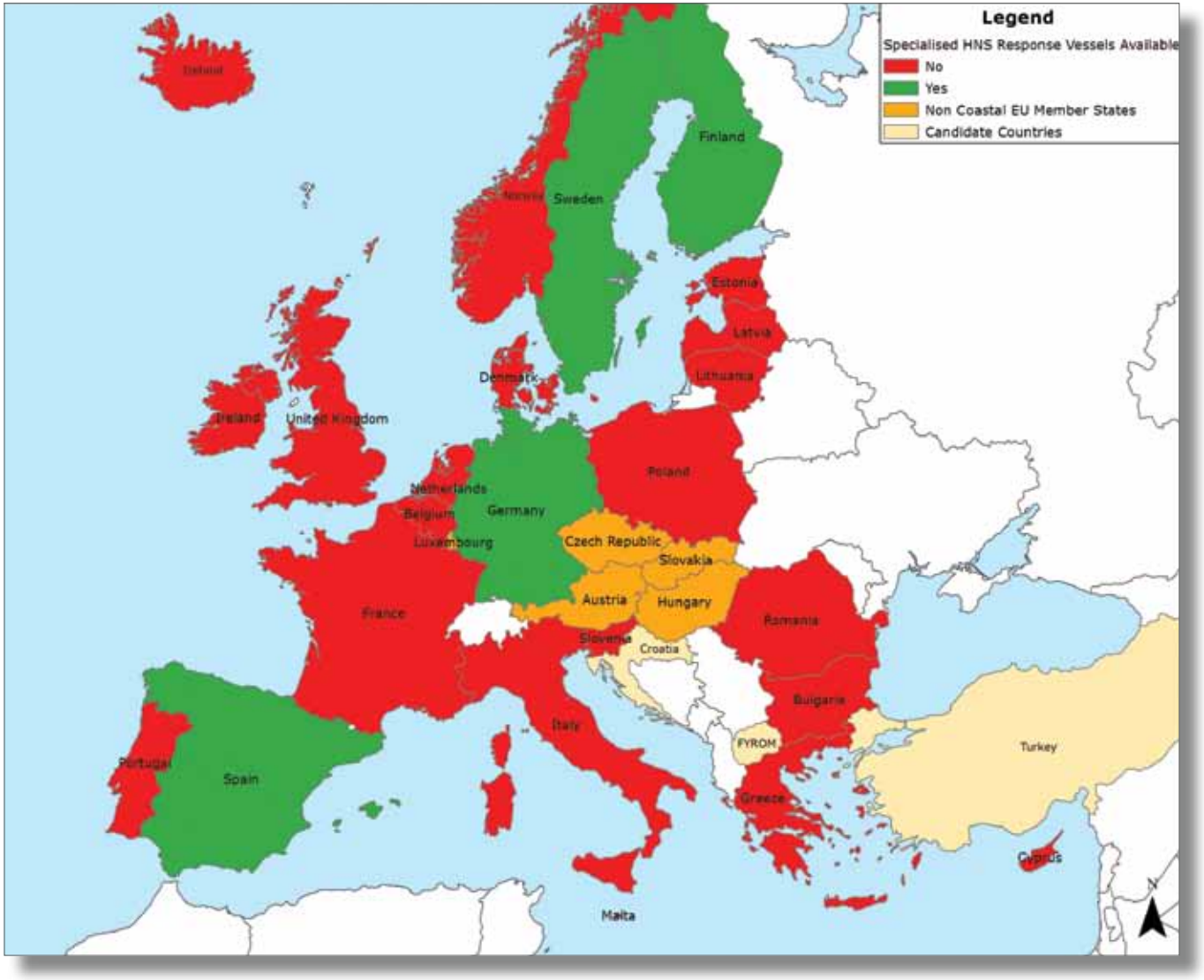
SPECIALISED HNS RESPONSE TEAM AVAILABLE



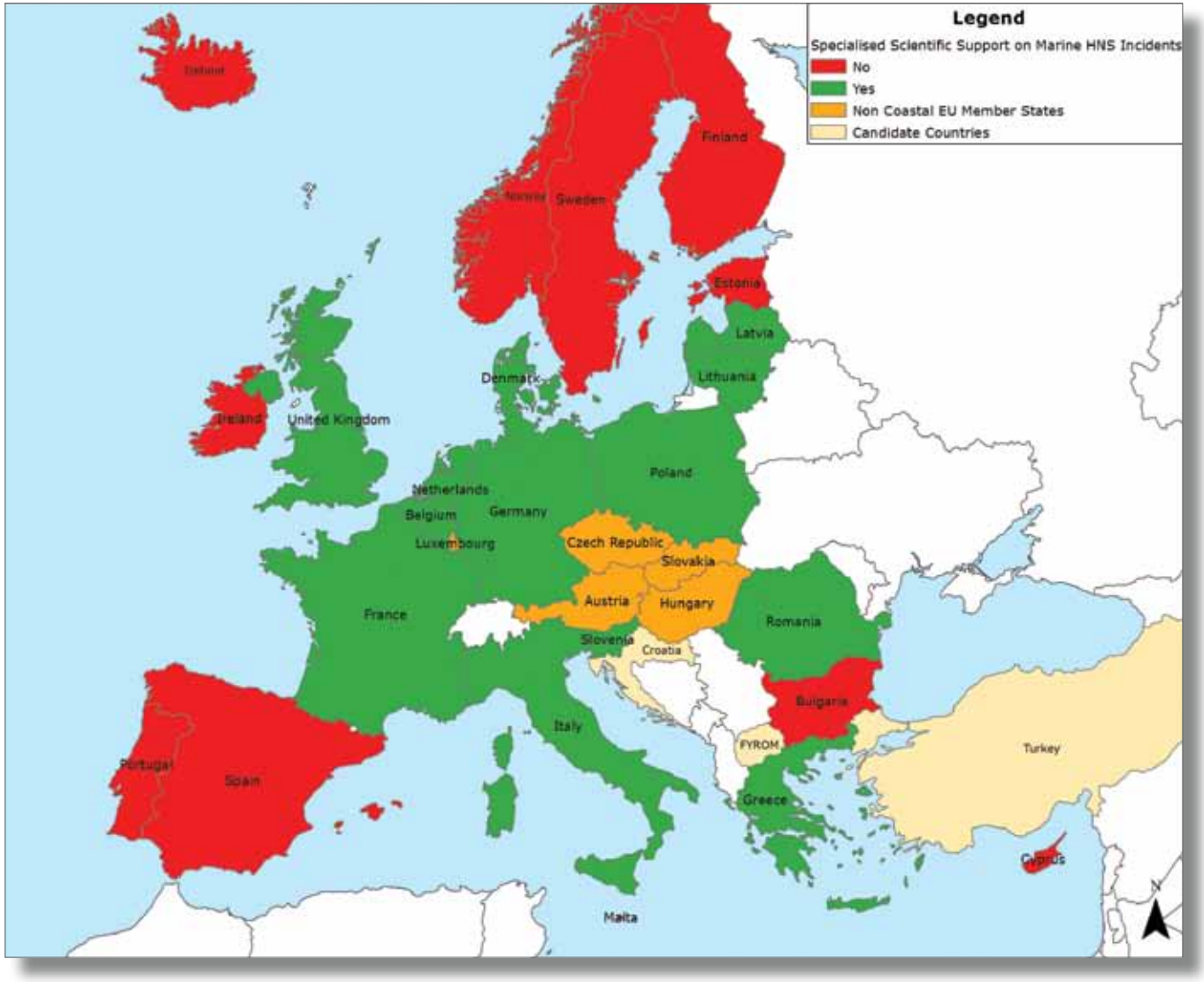
## SPECIALISED HNS SAFETY EQUIPMENT



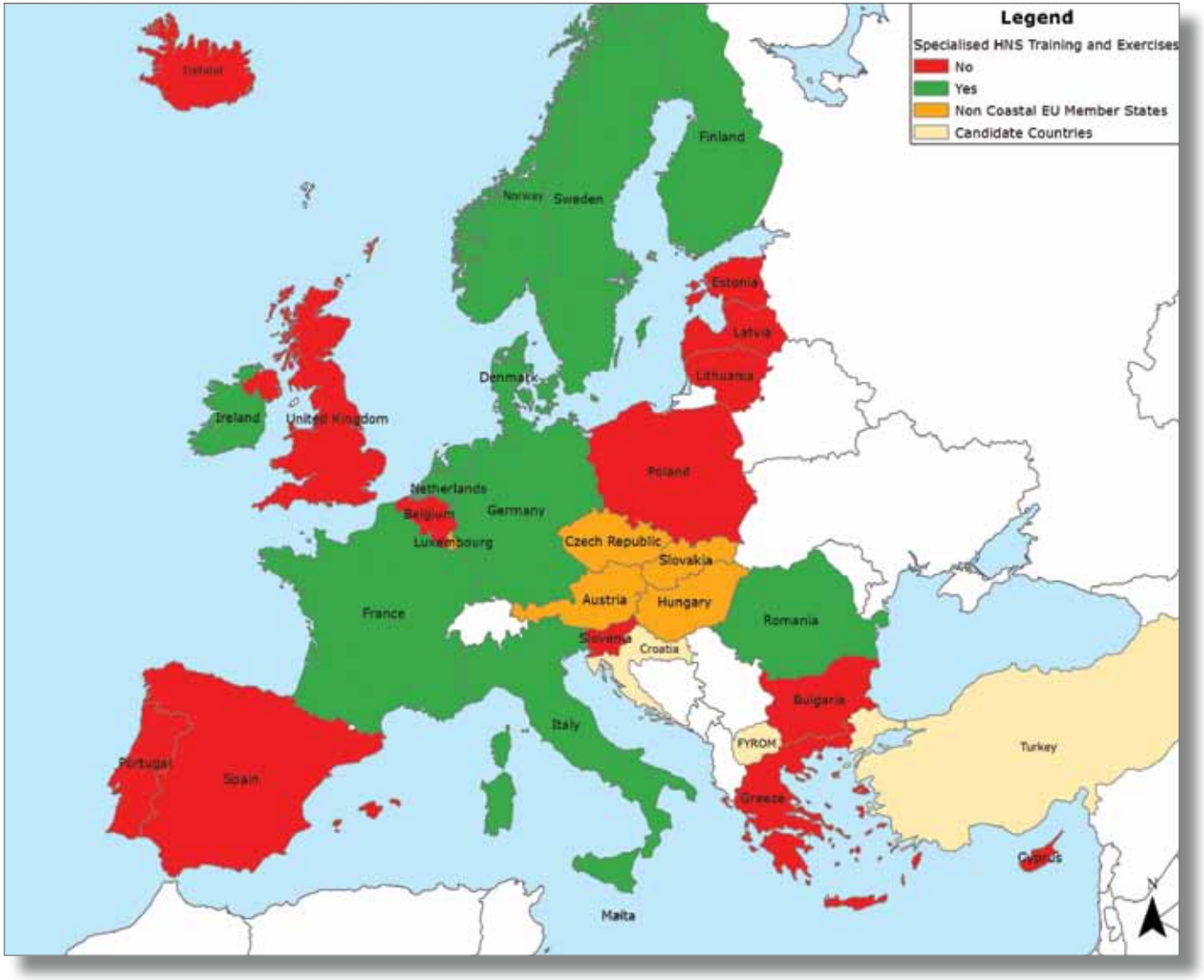
## SPECIALISED HNS RESPONSE VESSELS AVAILABLE



SPECIALISED SCIENTIFIC SUPPORT ON MARINE HNS INCIDENTS AVAILABLE



## SPECIALISED HNS TRAINING AND EXERCISES AVAILABLE



EMSA

## About EMSA

The European Maritime Safety Agency is one of the European Union's decentralised agencies. Based in Lisbon, the Agency provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security. It has also been given operational tasks in the field of oil pollution response, vessel monitoring and long-range identification and tracking of vessels.

www.emsa.europa.eu

EUROPEAN MARITIME SAFETY AGENCY