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First Meeting of the Barcelona Convention Offshore Oil and Gas Group (OFOG)
Sub-Group on Environmental Impact of Offshore Monitoring Programmes

Greece, 3-4 April 2017

Agenda item 3: Offshore Monitoring Programme

List of pollutants

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List of pollutants

Introduction

The Mediterranean Offshore Action Plan in the framework of the Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Mediterranean Offshore Action Plan) adopted by the Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols, which was held in Athens, Greece, from 9 to 12 February 2016, under Specific Objective 7.c, requests Contracting Parties to identify the required modifications of Annex I, II and III to the Protocol for the protection of the Mediterranean Sea against pollution resulting from exploration and exploitation of the continental shelf and the seabed and its subsoil (Offshore Protocol) and definition of which chemicals should be covered and not covered by such standards and under which conditions.

Objective

In line with Specific Objective 7.c of the Mediterranean Offshore Action Plan, the present document proposes recommendations for the required modification of the lists of pollutants referred in Annex I and Annex II to the Offshore Protocol, in the context of the development of a Mediterranean Offshore Monitoring Procedures and Programmes. The document also aims at providing a draft list of pollutants to be monitored as well as potential emerging pollutants resulting from new techniques applied by operators for exploration and exploitation of the continental shelf and the seabed and its subsoil, including the rationale for their selection.

Background

The documents listed below have been reviewed in order to recommend the changes to Annex I and Annex II to the Offshore Protocol, as reflected **Annex** to the present document:

- List of Chemicals for Priority Action of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)
- OSPAR List of Substances of Possible Concern (LSPC)
- OSPAR List of Substances Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment (PLONOR)
- US EPA National Pollutant Discharge Elimination System (NPDES)
- US EPA 40 CFR Part 435
- US EPA Priority Pollutant List (40 CFR Part 423, Appendix A)
- European Chemicals Agency (ECHA) REACH Regulations
- World Bank Group Environmental, Health and Safety (EHS) Guidelines for Offshore Oil and Gas Development
- Centre for Environment, Fisheries and Aquaculture Science (Cefas) Offshore Chemical Notification Scheme (OCNS) Chemical Hazard and Risk Management (CHARM)
- Norwegian Continental Shelf Guidelines for Offshore Environmental Monitoring (TA 2849 2011)
- American Society of Mechanical Engineers (ASME) Shale Shaker Committee Drilling Fluids Processing Handbook

The following effluent streams of offshore oil and gas discharges, which may contain a variety of pollutants, have been identified:

- Drilling fluids and cuttings (water-based and non-aqueous)
- Produced water
- Produced sand
- Flowback water

- Hydrostatic testing water
- Completion and well work-over fluids
- Cooling water
- Desalination brine
- Sanitary waste
- Food waste
- Ballast and storage displacement water
- Bilge water
- Well treatment fluids
- Deck drainage (non-hazardous and hazardous drains)
- Accidental spills

It is acknowledged that many other chemicals, substances, individual compounds and their combinations not listed here, are contained within offshore oil and gas products (drilling fluids / cuttings, produced water, produced sands, well treatment fluids, completion fluids, workover fluids, packer fluids, pipeline brine, desalination unit effluent, blowout preventer fluid, ballast water, bilge water, cementing products and slurry, passed through seawater, boiler blowdown, source water and sand, filter media and additives, cement slurry, pipeline brine, transfer powder, wellhead preservation fluids, umbilical steel tube storage fluids, production control fluids, leak tracer fluids, riser tensioning fluids, fire control and utility lift pump water, pressure maintenance and secondary recovery projects water, fire test water, pipeline and piping pressure test water, cooling water, hydrate control fluids, aqueous film forming foam).

It should be noted that the resources being mined either by dredging or drilling operations are potential pollutants, due to seabed cuttings from dredging, coring, drilling operations – i.e. cuttings and/or sediment plumes. Seabed mining resources within the Mediterranean, as listed in The First Global Integrated Marine Assessment (World Ocean Assessment I, 2016) include the following substances not considered as a pollutant within effluent stream of offshore oil and gas discharges:

- Massive Sulphides
- Chromite
- Nickel
- Iron, Magnetite
- Coal
- Mercury

With regard the proposed changes to Annex II to the Offshore Protocol, the lists of substances already prepared by the Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention') (i.e. LSPC and PLONOR), and by Cefas OCNS (i.e. CHARM), reproduced in the information document UNEP(DEPI)/MED WG.434/Inf.5 are proposed for the following reasons:

1. The OSPAR Commission was established in 1972 and has been identifying threats to the marine environment since then;
2. The OSPAR Commission has produced comprehensive lists for the monitoring of substances, in line with the European Chemicals Agency (ECHA) requirements, and taking into account EU Council Directives and Regulations;
3. Sixteen (16) Contracting Parties to the OSPAR Commission (Belgium, Denmark, the EU, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom (UK)) are members of the EU and/or the European Economic Area (EEA);
4. The OSPAR Commission does include Contracting Parties from the Mediterranean (France, Portugal, and Spain), and already took into account the concerns of these Mediterranean coastal States;

5. The OSPAR Commission also includes North Sea countries with long tradition of offshore exploration and production, and environmental monitoring (namely, Denmark, Germany, the Netherlands, Norway, and the United Kingdom);
6. The OSPAR Commission is also an active member of Regional Management Organisations and cooperates closely with organizations such as the Helsinki Commission (HELCOM), the United Nations Environment Programme (UNEP) Regional Seas Programme, the North-East Atlantic Fisheries Commission (NEAFC), the International Maritime Organization (IMO), the International Council for the Exploration of the Sea (ICES), the UN Economic Commission for Europe (ECE), the International Atomic Energy Agency (IAEA), the North Atlantic Salmon Conservation Organisation (NASCO), the International Seabed Authority (ISA), and the Sargasso Sea Alliance. Close collaboration is also maintained with the European Commission and the European Environment Agency (EEA);
7. Cefas OCNS manages chemical use and discharge by the UK and Netherlands offshore petroleum industries using the OSPAR Harmonised Mandatory Control Scheme (HMCS) developed for the use and discharge of offshore chemicals;
8. Cefas OCNS regularly conducts hazard assessments on chemical products used in offshore oil exploration and production activities, providing toxicity, biodegradation and bioaccumulation data; and
9. Cefas OCNS provides the most up to date product lists and documentations available (updated 8 November 2016).

The proposed changes to Annex I to the Offshore Protocol (i.e. Harmful or Noxious Substances and Materials the Disposal of which in the Protocol Area is prohibited) are presented in Annex to the present document.

The proposed changes to Annex II to the Offshore Protocol (i.e. Harmful or Noxious Substances and Materials the Disposal of which in the Protocol Area is Subject to a Special Permit), are reproduced in **Annex** to the current document and should be considered together with document UNEP(DEPI)/MED WG.434/Inf.5 and its Annexes (**Annex 1** - OSPAR List of Substances of Possible Concern (LSPC), **Annex 2** - OSPAR List of Substances Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment (PLONOR) and **Annex 3** - Cefas OCNS Chemical Hazard and Risk Management (CHARM)).

It should be noted that the proposed changes to both Offshore Protocol Annexes I and II are recommended on the basis of the reasons 1-9 listed above.

A comparison of existing and proposed changes to Annexes I and II to the Offshore Protocol is presented in a tabular format in **Annex** to the present document.

Actions requested by the Meeting

The Meeting is invited to:

- .1 **take note** of the information provided in the present document;
- .2 **comment** upon the proposed modifications of Annex I, and II and of the Offshore Protocol;
- .3 **consider** the need to recommend stricter restrictions and limits within Special Protection Areas (SPAs) / Marine Protected Areas (MPAs) / Natura2000 sites / Special Area of Conservation (SAC) / Sites of Community Importance (SCI), as well as for coastal and inland waters, to be addressed in the context of the development of the “offshore common standards and guidelines for Special restrictions or conditions for specially protected areas”; and

- .4 **request** the Secretariat to prepare a final draft list of pollutants prior to its submission to the MAP Focal Point Meeting.

ANNEX

Comparison of existing and proposed changes to Annexes I and II of the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil

ANNEX I	
Existing	Proposed changes
Mercury and mercury compounds	Mercury and mercury compounds, with the exception of mercury within drilling mud/fluids and drilling cuttings up to a max 1 mg/kg dry weight in stock barite outside Specially Protected Areas (SPAs), and not in coastal or inland waters
Cadmium and cadmium compounds	Cadmium and cadmium compounds, with the exception of cadmium within drilling mud/fluids and drilling cuttings up to a maximum of 3 mg/kg dry weight in stock barite outside SPAs and not in coastal or inland waters
Organotin compounds and substances which may form such compounds in the marine environment ¹	Organotin compounds and substances which may form such compounds in the marine environment ¹
Organophosphorus compounds and substances which may form such compounds in the marine environment ¹	Organophosphorus compounds and substances which may form such compounds in the marine environment ¹
Organohalogen compounds and substances which may form such compounds in the marine environment ¹	Organohalogen compounds and substances which may form such compounds in the marine environment ¹
Crude oil, fuel oil, oily sludge, used lubricating oils and refined products	Crude oil, fuel oil, oily sludge, used lubricating oils and refined products
Persistent synthetic materials which may float, sink or remain in suspension and which may interfere with any legitimate use of the sea	Persistent synthetic materials which may float, sink or remain in suspension and which may interfere with any legitimate use of the sea
Substances having proven carcinogenic, teratogenic or mutagenic properties in or through the marine environment	Substances having proven carcinogenic, teratogenic or mutagenic properties in or through the marine environment
Radioactive substances, including their wastes, if their discharges do not comply with the principles of radiation protection as defined by the competent international organizations, taking into account the protection of the marine environment	Radioactive substances, including their wastes, if their discharges do not comply with the principles of radiation protection as defined by the competent international organizations, taking into account the protection of the marine environment
	Polynuclear aromatic hydrocarbons (PAHs) (Polycyclic Aromatic Compounds)
	Oil & grease with the exception of up to 42 mg/l in any one day with the average of daily values for 30 consecutive days not exceeding 29 mg/l
	Floating solids
	Foam
	Drilling fluids and drill cuttings within 3 miles/1.61 km/0.87 nm from shore

¹ With the exception of those which are biologically harmless or which are rapidly converted into biologically harmless substances.

	Non-aqueous drilling fluids (NAFs)
	Copper
	Lead and organic lead compounds
	Zinc
	Phosphorus
	Aliphatic hydrocarbons
	Tin and organic tin compounds
	Free oil, diesel oil, formation oil
	Organohalogens
	4- (dimethylbutylamino) diphenylamin (6PPD) (Organic Nitrogen Compounds)
	Neodecanoic acid, ethenyl ester (Organic Esters)
	Phthalate Esters
	Dicofol, endosulfan, exachlorocyclohexane isomers (HCH) , methoxychlor , pentachlorophenol (PCP) , trifluralin (Pesticides/Biocides)
	Phenols
	Clotrimazole (Pharmaceuticals)
	Musk xylene (Synthetic musks)
	Non-aqueous based drilling fluids (except that fluid which adheres to cuttings) and small volume discharges
	Oil-based drilling fluids and associated cuttings
	Diesel oil
	Formation oil
Does not apply to discharges which contain substances [above], that are below the limits defined jointly by the Parties and, in relation to oil, below the limits defined in Article 10 of this Protocol	Does not apply to discharges which contain substances above that are below the limits defined jointly by the Parties and, in relation to oil, below the limits defined in Article 10 of this Protocol.

ANNEX II	
Existing	Proposed changes
Arsenic	Arsenic
Lead	Lead
Copper	Copper
Zinc	Zinc
Beryllium	Beryllium
Nickel	Nickel
Vanadium	Vanadium
Chromium	Chromium
Biocides and their derivatives not covered in Annex I	Biocides and their derivatives not covered in Annex I
Selenium	Selenium
Antimony	Antimony
Molybdenum	Molybdenum
Titanium	Titanium
Tin	Tin
Barium (other than barium sulphate)	Barium (other than barium sulphate)
Boron	Boron
Uranium	Uranium
Cobalt	Cobalt
Thallium	Thallium
Tellurium	Tellurium
Silver	Silver
Cyanides	Cyanides
The control and strict limitation of the discharge of the substances [...] must be implemented in accordance with Annex III [of the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil].	The control and strict limitation of the discharge of these five substances must be implemented in accordance with Annex III of the Offshore Protocol on factors to be considered for the issue of the permits.
	Substances currently listed in the OSPAR List of Substances of Possible Concern (LSPC) require further evaluation prior to permit approval
	Substances currently listed in the OSPAR List of Substances Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment (PLONOR) do not require further evaluation prior to permit approval
	Substances currently listed in the Cefas OCNS Chemical Hazard and Risk Management (CHARM) do not require further evaluation prior to permit approval