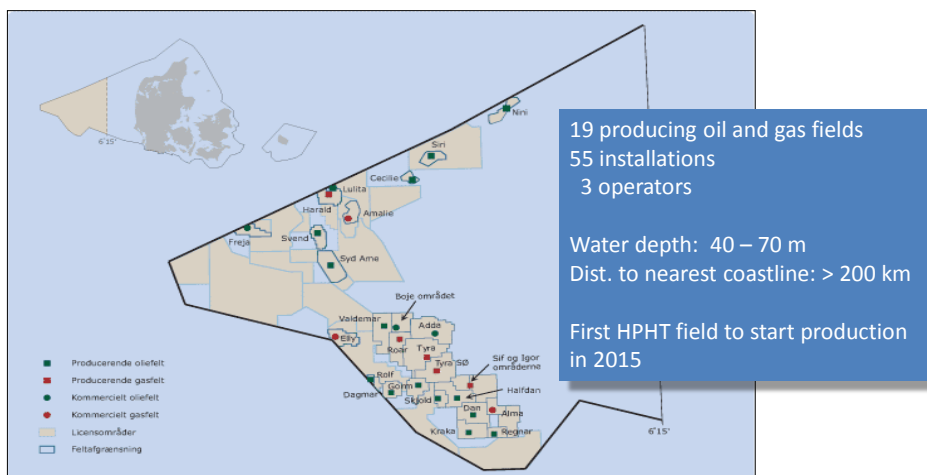




Offshore oil & gas activities in the Danish part of the North Sea





Danish Ministry of the Environment
Environmental Protection Agency

Legal Framework

Law on Environmental Protection of the Sea:

- Overall responsibility for combating of oil and chemical pollution at sea lies with the Ministry of Defense/Maritime Assistance Service (MAS)
- MAS is national contact point for the surveillance of pollution at sea
- Offshore oil & gas operators required to immediately initiate their own emergency response in case of spills of hydrocarbons or chemicals to the sea
- Ministry of Environment can issue orders to the operators on which types of emergency response to initiate, if a spill has taken place
- Sanctions, if operators does not comply with the order, but at present no sanctions if operators don't by themselves initiate their emergency response.
- No requirements for an overall national external emergency response plan
- The Ministry of Defence/MAS has issued a plan for the state owned contingency equipment to be used in case of pollution of the sea from ships.
 - DEPA can request MAS to assist in combating a spill from an offshore installation, but the equipment is otherwise not available for the operators
 - Operators shall pay the cost of use of MAS assistance



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Environmental Protection Agency

Legal Framework

Order on preparedness in case of pollution of the sea:

Emergency response plans (spills of oil and chemicals to the sea):

- Contingency plans approved by DEPA, who can order the plans revised if needed
- Offshore operators to maintain contingency organizations (personnel and equipment) and to develop contingency plans
- Plans cover both exploration and production activities
- Required information:
 - Alarm and communication systems incl. notification of authorities
 - Organization , responsibilities and procedures for initiation of
 - Available equipment (type, capacity and location)
 - Actions taken in different pollution scenarios, combat methods, surveillance etc.
 - Exercise activities
- Requirements on training of contingency personnel and on the conduction of exercises, in which DEPA can participate
- DEPA conducts inspections on contingency procedures and equipment



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Environmental Protection Agency

Legal Framework

Specific technical requirements to the contingency equipment:

- Equipment for both mechanical and chemical combating of oil pollution
- The equipment should be able to handle the max. flow of oil from a production well or a pipeline or the estimated max. flow of oil from an exploration well
- Working criteria for oil skimmers, booms and transport equipment:
 - wave heights up to 2.5 meters and sea currents up to 1 knot
 - air temperatures: + 50 to – 20 °C , water temperatures: + 40 to – 1 °C
- Equipment to be at spill location within a time frame specified by DEPA taking into account the geographical location of the installations
- Use of chemical dispersants only after specific approval from DEPA

Reporting requirements (separate regulation):

- Immediately by e-mail to MAS: All spills of hydrocarbons and chemicals
- Spills > 5000 liters also immediately by telephone
 - ➡ MAS forwards the e-mails to DEPA
- Immediately by phone to DEPA:
 - Spills > 5000 liters
 - All spills, if it is evaluated that they can be contained and recovered

2011 Denmark Block 12/06 Exploration Drilling Programme		Document No.: PARUK- BMS-PROJ005-27-2 Revision No.: 2 (03/05/11) Page: 40 of 83
1. Pollution Report Form – POLREP		
Pollution Report Form		
<input type="checkbox"/> Urgent <input type="checkbox"/> Critical		
Date/Time of Report		
Date/Time of Incident		
Location of Incident		
Latitude:		Longitude:
Original Report Source		
Contact:	Phone/Mobile:	Fax/Email:
Nature of incident and spill source (if source unknown give identity and position of adjacent vessels)		
Point of Discharge from Source:		
Cause of Discharge:		
Oil Type or Description:		
Has Discharge Stopped?		
Nature, Extent and Volume of Spill:		
Projected Trajectory of Spill:		
Samples Taken: <input type="checkbox"/> Yes <input type="checkbox"/> No		Photographs Taken: <input type="checkbox"/> Yes <input type="checkbox"/> No
Weather / Sea / Tide Conditions:		
Lead Response Agency:		
Primary Statutory Agency:		
Initial Response Action:		
Additional Information:		
Report Prepared By:	Phone/Mobile:	Fax/Email:

Note: POLREP form must be sent to mas@sok.dk



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Example of operator pollution report form

Operators to send this to the Maritime Assistance Service immediately after a spill has been detected



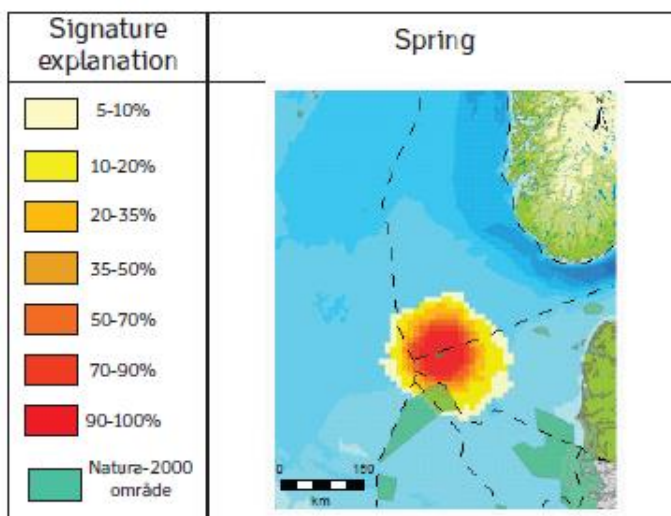
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Main features of existing oil and chemical spill contingency plans approved by DEPA

- Based on risk assessments
- Covers all spills of oil and chemicals no matter the volume
- Tier based
 - Tier 1: Local resources (e.g. stand by vessels)
 - Tier 2: National private resources (e.g. ESVAGT or Mærsk Oil in Esbjerg)
 - Tier 3: International resources (Oil Spill Resources Ltd. in Southampton)
- Lists all the equipment available, the ownership of the equipment, where it is located and how fast it can be put into operation
- Prepared by operators
 - In case of drilling activities it is the operators responsibility that the contingency procedures are coordinated with the procedures of the drilling rig



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Probability (%) of oil spreading at sea surface in case of a worst case blowout during the spring, when the oil will spread the most



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Rig equipment resources:

Type	Item	Quantity
Absorbent	Pads	450
	Booms	36
	Pillows	45
	Boys loose cellulose	36
Several	Repair putty/for watertight repair of drums and pipes	54
	Shovel	9

Stand-by vessel equipment resources:

	If necessary the stand-by vessel can sail up and down the slick in order to let it disperse and evaporate in a natural way.	
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OSR equipment resources:

Type	Item	Quantity
Recovery Booms	Roskims system 150 metres Bay boom	2
	Roskims system 350 metres Bay boom	2
	Vikoma 3 pump weir boom	1
Offshore Booms	Roboom 1500, 200m, on reel	11
	Roboom Bay 200m in container	2
	Roboom Ocean 200m on reel	4
	Vikoma Ocean 500m boom	3
Inshore Booms	Sea Sentinel boom 10m airskirt	136
	Sea Sentinel boom 20m airskirt	258
	Shore Guardian boom 10 metre for beach	104
	Shore Guardian boom 20 metre for beach	151
	Troll Boom OP 750 X 200	1
Vessels	4.7m inflatable + outboard	1
	7.5m semi rigid + outboard	1
	5.2m semi rigid + outboard	1
	Roslok landing craft 13m	1
Dispensant Application	Workboat	1
	AR 19 Beach spray set	10
	AR 30 Beach spray set	10

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Present Danish oil spill contingency planning compared to the main requirements of the directive

Article	Subject	Danish OSCP
14,1	Operators to prepare internal emergency response plans	Yes
14,1	Plans to be based on risk assessments	Yes (EIA)
14,1 An. 1, 10,8	Analysis of oil spill response effectiveness	No
28,1 a + 30,2	Emergency response to be put into action without delay	Yes
28,1 b	Plans to be consistent with the external emergency response plan	No
28,2	Equipment and trained personnel available at all times	Yes
28,3 + Annex 10 + 30,1	Organization, procedures, immediate reporting, etc.	Yes
29,1 and 2	Preparation of external emergency response plans	No
29,5 and 6	Records of equipment and operator exercises	Yes
30,3	Authorities to collect information during an env. accident	Yes



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Issues in relation to implementation of offshore directive:

- Risk assessments to be done according to directive annex I, section 2, no. 5 can be based upon risk assessments of oil spills contained in EIA reports if available and appropriate
- Internal Emergency Response plans will cover all spills incl. spills that comprise a major environmental incident, no specific plans for major spills
- The present Danish operators draw on the same tier 2 and 3 oil spill contingency equipment. Equipment lists in external emergency response plans to reflect this
- Reporting according to offshore directive for major environmental incidents should be coordinated with the reporting requirements for major environmental damage according to the Environmental Liability directive (art. 5, no. 2)
- The requirement on availability of the contingency equipment of the operators in article 28, no. 2 does not imply that the equipment of one operator shall be available for emergency response operation in case of a spill from another operator or in case of spills from other sources e.g. ships
- The directive does not require the member state authorities to have contingency equipment available for the operators
- Guidance on how to carry out analysis of oil spill effectiveness



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THANK YOU FOR YOUR ATTENTION!