

GIWACAF Webinar #3 – Oil Spill Contingency Planning

# Oil & Gas Industry in Angola

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# Industry Oil Spill Response Planning & Preparedness

1. Regulatory Requirements – Industry regulations and NOSCP
2. Industry Operations Risk Assessment
3. High risk scenario studies
4. Preparedness and Response Tiered Concept
5. Outline Oil Spill Response Strategies
6. Available resources
  - ❑ In-House required resources as per regulatory requirements and studies
  - ❑ In country resources (NOSCP) and Industry Mutual Aid Agreement
  - ❑ Oil Spill Response Organizations (OSROs)
7. Training and Exercise
8. Case Study – Angola Coastal Sensitivity Mapping

# Industry Oil Spill Response Planning & Preparedness

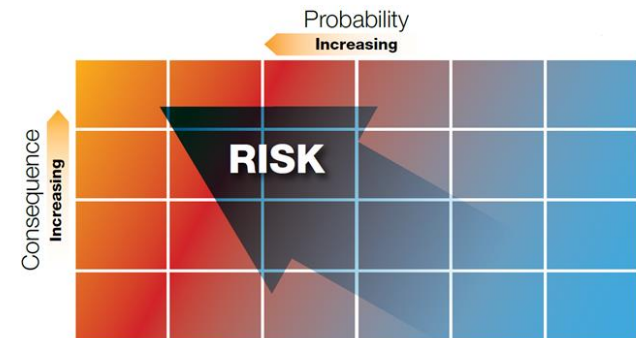
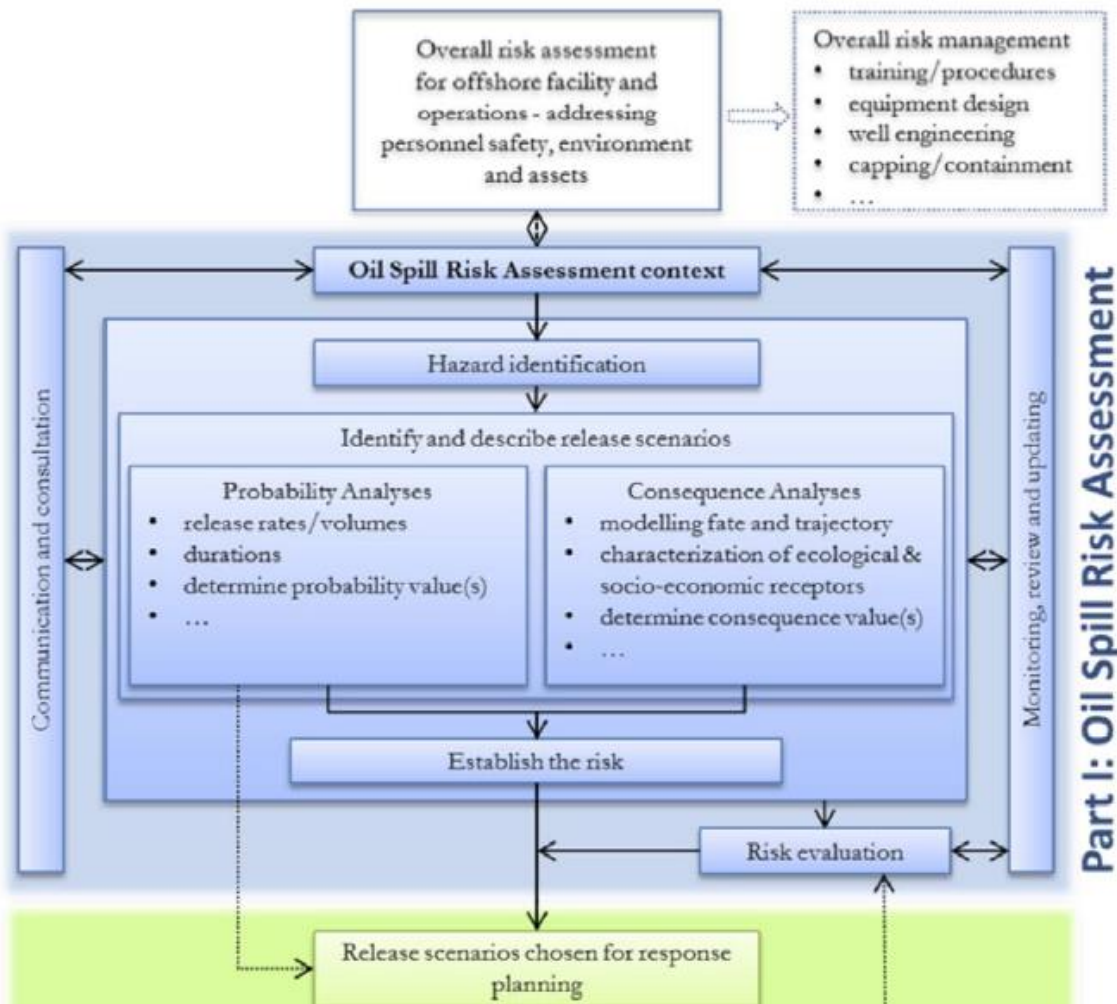
## 1. Regulatory Requirements – Industry regulations and NOSCP

Legislation	
National	International
General Environmental Law 5/98 of June 19, 1998	Oil Pollution, Preparedness, Response and Cooperation Convention (OPRC) Regulations 1990
Decree on Environmental Protection for Petroleum Industry 39/00 of October 10, 2000	Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Annex 1, Regulation 26
Executive Decree 11/05 of January 12, 2005	Civil Liability Convention (CLC, 1992)
Presidential Decree 141/12 ARTICLE 43 (Approval of chemical products for combating pollution)	International Oil Pollution Compensation Fund (IOPC Fund 1992)
Resolution nº 87-A/08 of December 22nd National Contingency Plan Against Oil Spills at Sea”	Convention on Liability and Compensation for Damage caused by the carriage of Hazardous and Noxious Substances (HNS 1996)
Presidential Decree 117/20  Approves the General Regulation to Assess the Environmental Impact and the Environmental Licensing Procedure	

# Industry Oil Spill Response Planning & Preparedness

## 1. Operations Risk Assessment

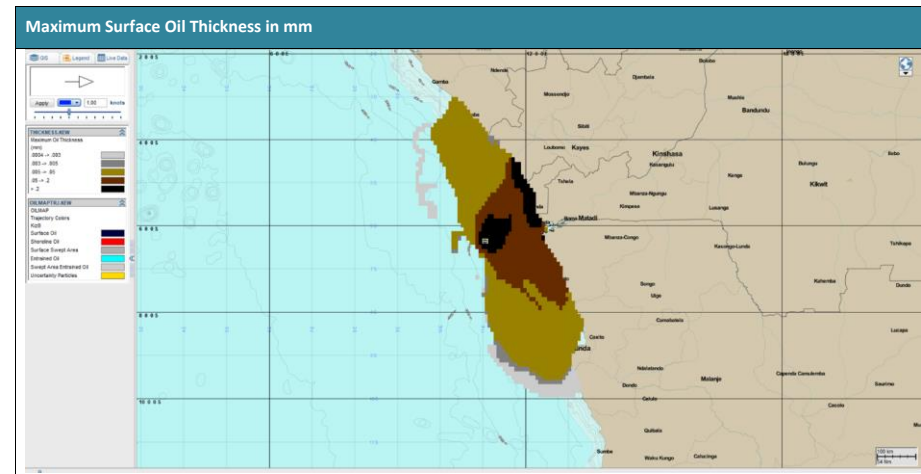
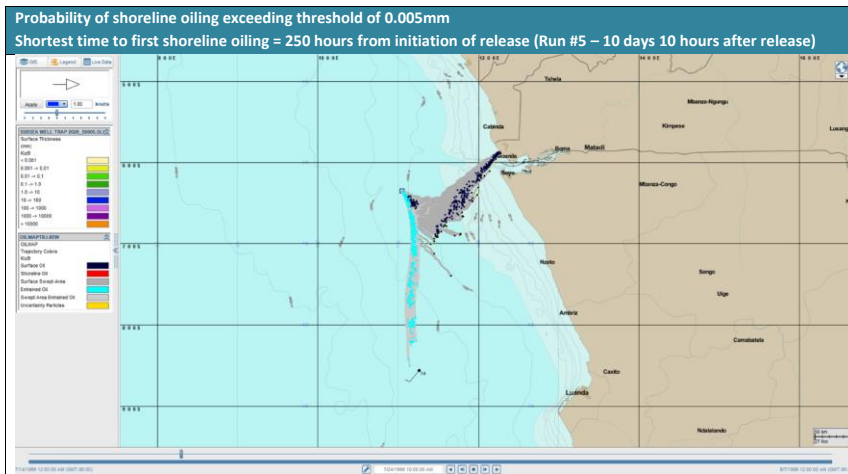
Overview of the oil spill risk assessment and response planning process



# Industry Oil Spill Response Planning & Preparedness

## 3. Hypothetical High Risk Scenario – OILMAP spill trajectory modeling

- Subsea Well Uncontrolled Crude Release of 10,000 bbl. per day
- The oil spill modeling provides a useful indication of which areas are at risk of oiling in the event of a spill, based on environmental data and oil properties, predicting probability, timing and oil thickness that will impact areas at risk





# Industry Oil Spill Response Planning & Preparedness

## 4. Preparedness and respond tiered concept

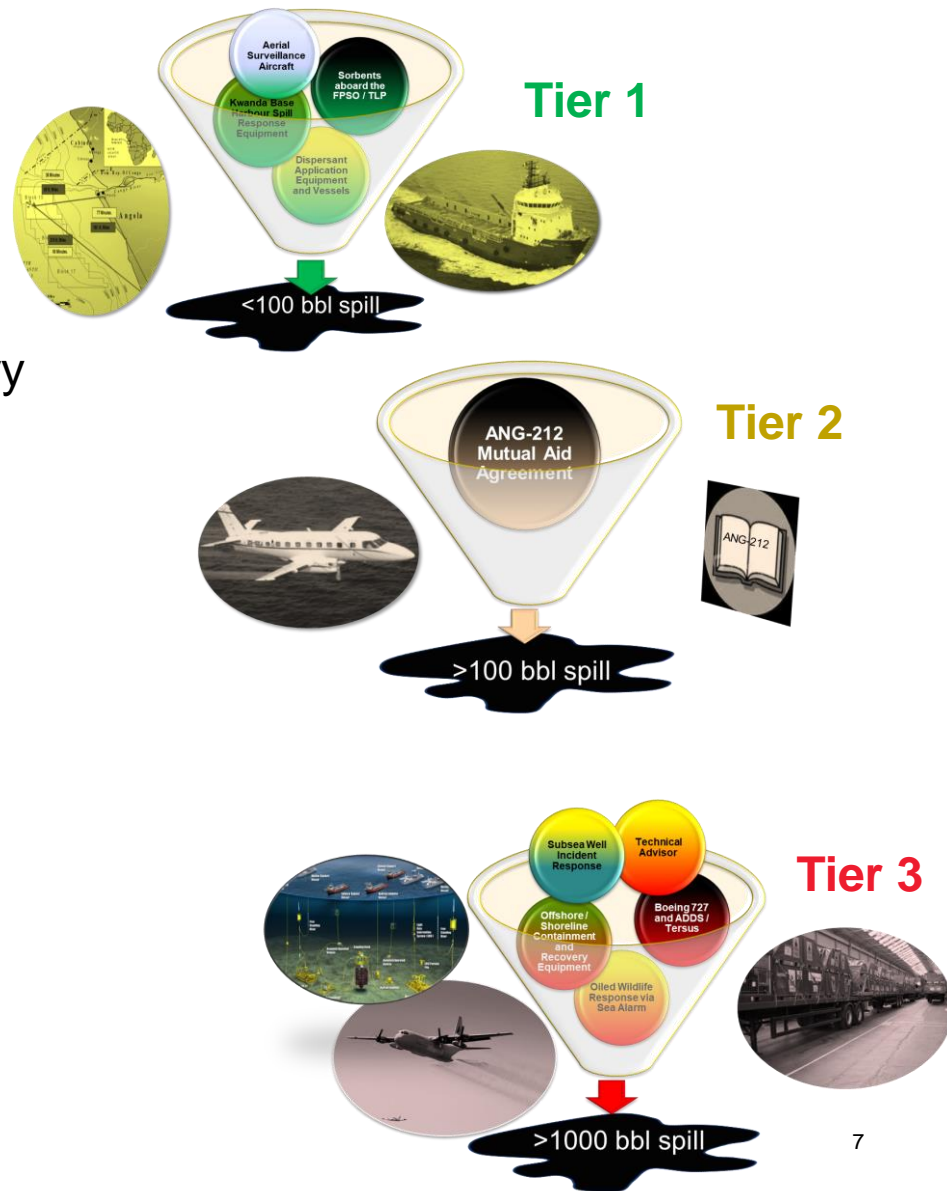
Tiered Preparedness and Response, as defined by the International Petroleum Industry Environmental Conservation Association (IPIECA)

Tier 1		Tier 2		Tier 3	
<input type="checkbox"/> Spill occurs within immediate site proximity	<input type="checkbox"/> Minor / slight environmental impact	<input type="checkbox"/> Local site resources (Tier 1) are <b>NOT</b> sufficient to combat response	<input type="checkbox"/> Potential impact to sensitive areas	<input type="checkbox"/> Regional resources (Tier 2) are <b>NOT</b> sufficient to combat spill	<input type="checkbox"/> Significant shoreline impact expected
<input type="checkbox"/> Local site resources (dispersant application systems) are sufficient to combat spill	<input type="checkbox"/> Source of spill has been stopped	<input type="checkbox"/> Regional resources (Tier 2) are sufficient to combat spill	<input type="checkbox"/> Local / national media attention	<input type="checkbox"/> International Tier 3 resources are required	<input type="checkbox"/> Loss of production for more than 1 week
<input type="checkbox"/> Spill size* <100 bbls	<input type="checkbox"/> Loss of production for 1 day or less without disability	<input type="checkbox"/> Spill size* is >100bbls, <1000 bbls	<input type="checkbox"/> Loss of production between 1 day and 1 week	<input type="checkbox"/> Spill size* >1000bbls	<input type="checkbox"/> International media attention
<input type="checkbox"/> No immediate concern over shoreline impact	<input type="checkbox"/> Spill involves a single Lost Time Incident (LTI) without disability	<input type="checkbox"/> Danger of fire or explosion	<input type="checkbox"/> Spill involving a single LTI with disability	<input type="checkbox"/> Major release, uncontrolled well blowout	<input type="checkbox"/> Spill involves multiple injured people
	<input type="checkbox"/> No media interest	<input type="checkbox"/> Not able to respond to spill immediately	<input type="checkbox"/> Spill occurs within Block vicinity	<input type="checkbox"/> Major spill extends beyond site vicinity	<input type="checkbox"/> Spill involve a minimum single fatality
	<input type="checkbox"/> Able to respond to spill immediately				<input type="checkbox"/> Potential to impact to other countries
					<input type="checkbox"/> Persistent damage
Tier 1 Resources		Tier 2 Resources		Tier 3 Resources	

# Industry Oil Spill Response Planning & Preparedness

## 5. Oil Spill Response Strategies

- A. Monitor, Evaluate and Sample
- B. Dispersant Application
- C. Offshore Containment and Recovery
  - Source Control Subsea Well Intervention
- D. Shoreline Protection and Clean up
  - NEBA (*Net Environmental Benefit Analysis*)
- E. Waste Management



# Industry Oil Spill Response Planning & Preparedness

## 6. Available resources

### 6.1 In-House required resources as per regulatory requirements and studies

One set of containment & recovery  
(SONANGOL)



Some set of clean-up operation (CVX)





# Industry Oil Spill Response Planning & Preparedness

## 6. Available resources

### 6.1 In-House required resources as per regulatory requirements and studies

**Dispersant Spraying System – spray (ExxonMobil)**



**Shoreline protection equipment (TEPA)**



**Some Containment & recovery sites (BP)**

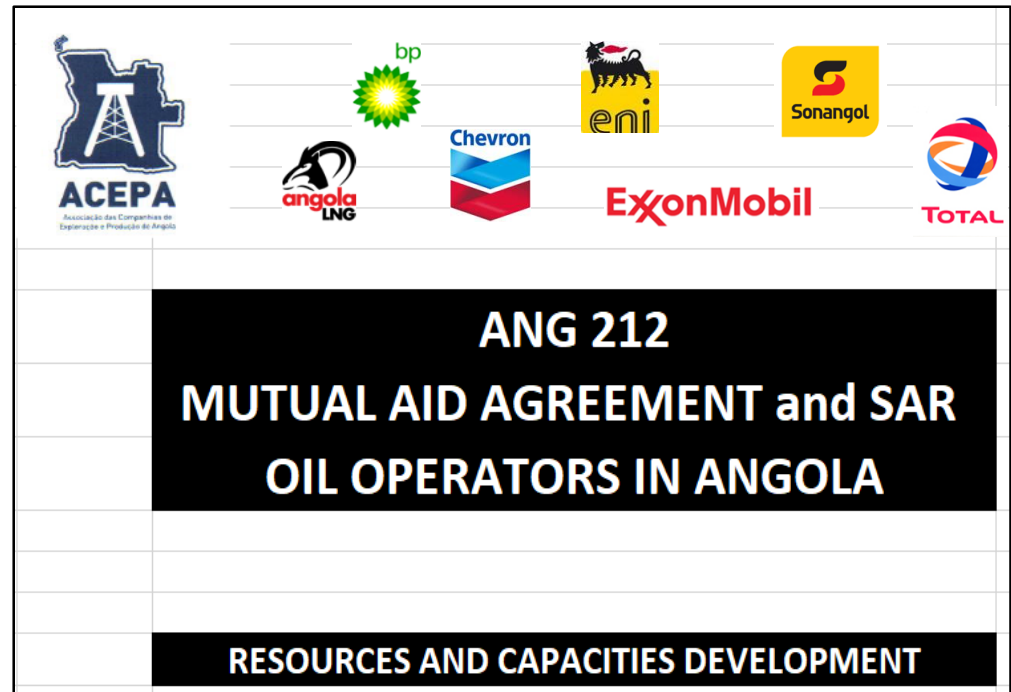


# Industry Oil Spill Response Planning & Preparedness

## 6. Available resources

### 6.2. In country resources

#### National Oil Spill Contingency Plan and Industry Mutual Aid Agreement



# Industry Oil Spill Response Planning & Preparedness

## 6. Available resources

### 6.3. Regional resources and OSROs

- West Africa dispersant stockpile
- West Africa Surveillance Plane (WASP)
- GIWACAF
- Oil Spill Response Organizations (OSROs):
  - ☐ OSRL
  - ☐ AMBIPAR
  - ☐ LAMOR



# Industry Oil Spill Response Planning & Preparedness

## 7. Training and Exercise

- **Training & Competency Matrix** to ensure ER personnel are skilled and competed to perform their ER positions as per plans
- Oil spill response exercises / drills are performed regularly to ensure:
  - personnel training in the ERPs and procedures,
  - proficiency in executing the ERP and test equipment's functionality
- **Industry Joint exercises** are conducted to test mutual aid agreement
- Participation in **Government OSR training and exercise**
- Lessons learned from exercises are used to enhance Emergency Response plans and capabilities





# Industry Oil Spill Response Planning & Preparedness

## 8. Case Study: Industry Joint Project - Angola Sensitivity Map

- The Oil & Gas Industry through **ACEPA** (Association of Exploration & Production Companies in Angola) have developed Coastal Sensitivity Mapping for Angola
- This project had identified the most **environmental, socio-economic sensitive areas** along the coastline
- A **protection plan** was developed for each site considering site description, resources to protect, access to site, operational constraints and hazards, protection strategy and type of equipment to be use





**THANK YOU**