

*Maintaining Future Oil Spill  
Response Preparedness: how the  
results of the IOGP-IPIECA Joint  
Industry Project can help*

*Tokyo, January 2016*

# The IOGP-IPIECA OSR-JIP

- IOGP and IPIECA: who we are
- What we have done on spill response since Montara and Macondo
- How we see the future on response issues
- Where we believe there is an opportunity for industry and regulators to work together

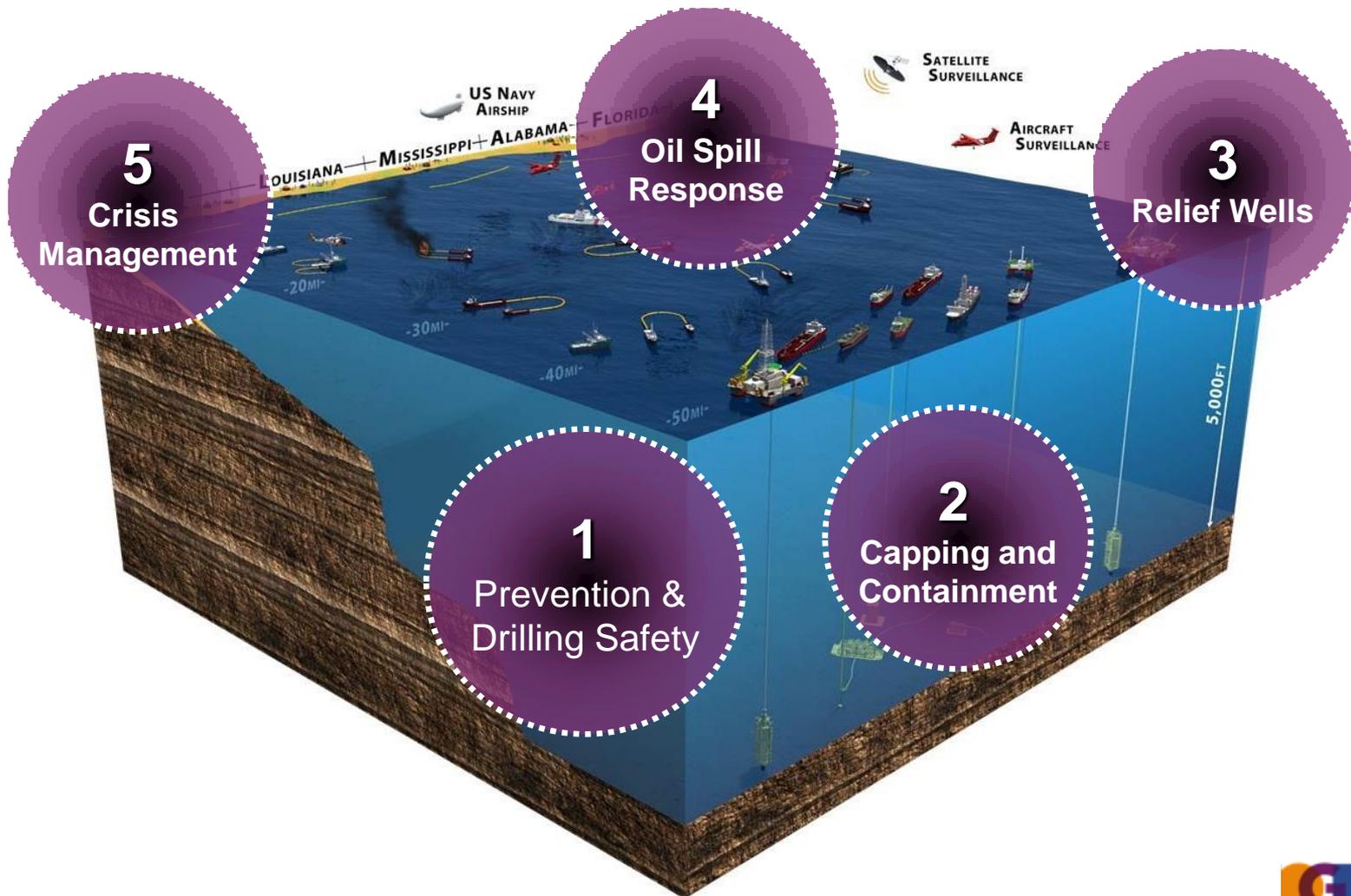
# Who are IPIECA and IOGP?

- IPIECA is the global association for environmental and social issues for both the upstream and downstream oil and gas industry
- It is a non-advocacy Association formed in 1974 following the launch of UNEP; membership covers over half of the world's oil production
- The International Oil and Gas Producers Association (IOGP) works on behalf of the world's oil and gas companies and organizations to promote safe, responsible and sustainable exploration and production
- IOGP encompasses most of the world's leading publicly-traded, private and state-owned oil and gas companies, industry associations and upstream service companies

**Montara: 21 August 2009**

**Macondo: 20 April 2010**

# GIRG identified five key capability areas



# The GIRG\* Process

## Prevention

Better capabilities and practice in well engineering design and well operations management

**OGP** Wells Expert Committee  
International Association  
of Oil & Gas Producers



## Intervention

Improved capping response in the event of an incident and to study further the need for – and feasibility of – global containment solutions

**SUBSEA WELL**  
RESPONSE PROJECT

**Oil Spill**  
Response



**MUTUAL**  
AID



## Response

Effective and fit-for-purpose oil spill response preparedness and capability

**OSR**  
Oil Spill Response  
Joint Industry Programme



Governments, regulators, NOIAs, OSROs and industry initiatives

\*GLOBAL INDUSTRY RESPONSE GROUP

# JIP outputs comprise four elements

1. **Good Practice Guidance**: 24 Good Practice Guides and their translations. Replaces the existing Oil Spill Response report series
2. **Short technical reports** in the “JIP” series, developed to communicate technical good practice or to make it accessible to external parties.
3. **Pure research** & longer technical documents: detailed technical research and information
4. **Outreach, Communications** and “outreach” materials, videos/animations, “Glance/Scan” materials

# Dispersants

Bench scale testing

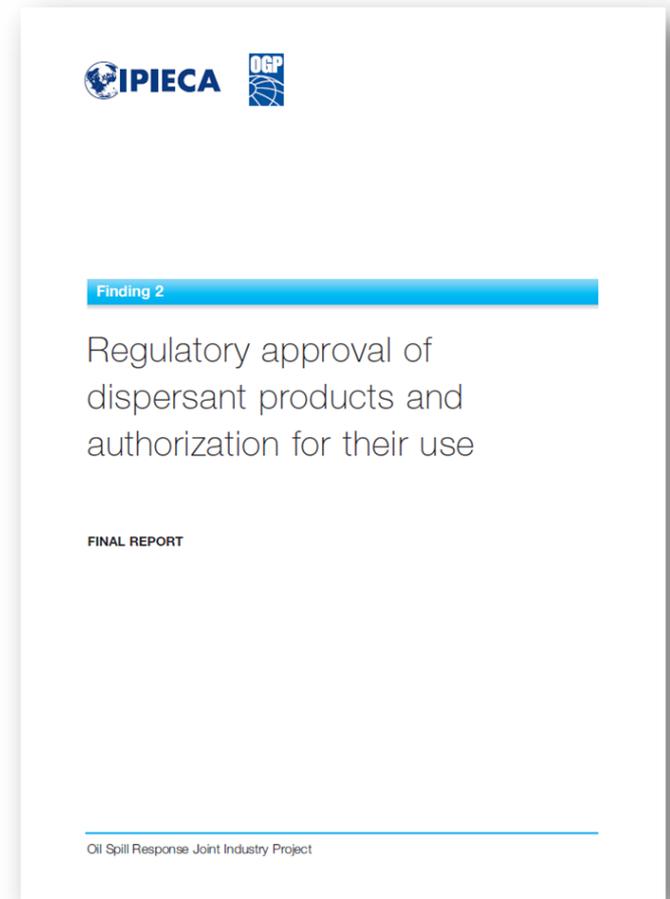
Post-spill dispersant monitoring

Dispersant logistics/supply chain planning



# Regulatory Approval of Dispersant Products and Authorization of their Use

- Recognises dispersants place in the 'response toolkit'
- Assist regulators and interested parties in developing effective regulation
- Aims to clarify an issue which can be confusing and contentious
- Potential interest to countries with existing regulation

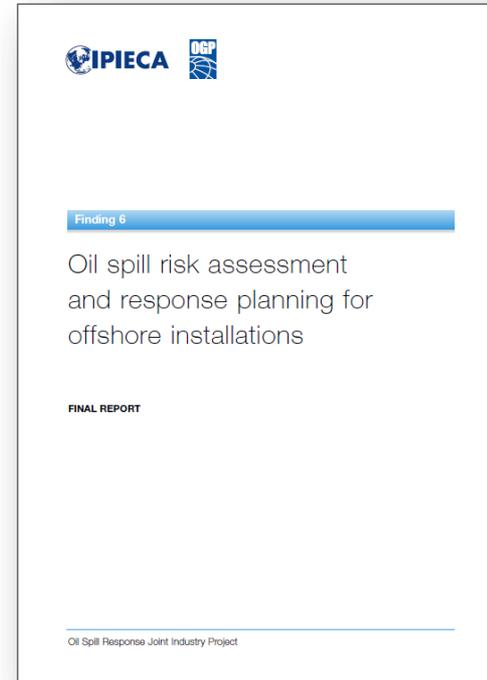


# In-Situ burning across the key groups

<p><b>IOPG Arctic OSR Technology JIP</b></p> <p><b>ISB Technical Working Group</b></p>	<p><b>API</b></p> <p><b>Oil Spill Preparedness and Response Subcommittee</b></p> <p><b>ISB Subgroup</b></p>	<p><b>IOPG-IPIECA</b></p> <p><b>OSR-JIP</b></p> <p><b>JIP 5 for ISB and JIP 12 for Good Practice Guides</b></p>
<ul style="list-style-type: none"> <li>• State of Knowledge on ISB</li> <li>• Igniter enhancement</li> <li>• Chemical herders</li> </ul>	<ul style="list-style-type: none"> <li>• Update ISB risk communication and decision-making reports</li> <li>• Offshore and on land operational manuals</li> <li>• Soil heating tests</li> <li>• Igniter enhancement</li> <li>• Safety officer and IH guide</li> <li>• Personnel selection and training guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• ISB equipment and efficiencies</li> <li>• Information document on combustion plumes and residues from In-Situ Burning</li> <li>• Good Practice Guide for ISB</li> </ul>

# Risk Assessment and Response Planning

- Risk assessment-based methodology for offshore
- A scenario-based planning standard for an upstream release and estimation of the associated quantities
- An assessment of environmental/commercial resources at risk
- An assessment of response resource needs and capability and the ability to cascade resources in to the spill area
- Embedding the above in contingency planning
- Proving the response through drills and exercises

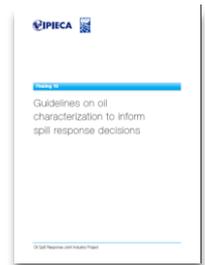


Current status and future needs for aerial dispersant application

Mutual aid indemnification and liability including legal pro-forma templates for global use

Guidelines on oil characterization to inform spill response decisions

Assessment of response effectiveness of OSRO's



# Surveillance, Modelling & Visualization

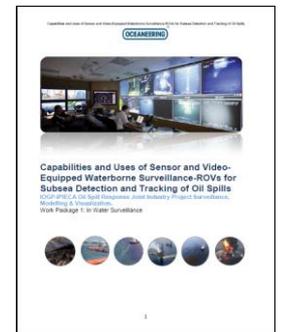
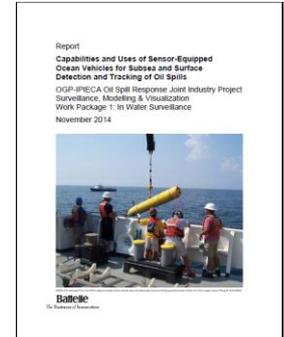
WP1 - In-Water Surveillance (BP/Metocean)

WP2 - Surface Surveillance (Shell/Geomatics)

WP3 - Modelling & Prediction (Total/Metocean)

WP4 - Metocean Databases (Total/Metocean)

WP5 - GIS / Common Operating Picture (Shell)



An Assessment of Surface Surveillance Capabilities for Oil Spill Response using Satellite Remote Sensing

Provided for IPECA and OGP



Abstract: This report provides an assessment of satellite surveillance for oil spill response, carried out for IPECA and OGP under contract OGP-IIP Paper 001.

10 April 2014

Kim Partington  
Pricer Imaging Limited

Reference PL4520-08-76-1.2

An Assessment of Surface Surveillance Capabilities for Oil Spill Response using Airborne Remote Sensing

Provided for IPECA and OGP



Abstract: This report provides an assessment of airborne surveillance for oil spill response, carried out for IPECA and OGP under contract OGP-IIP Paper 001.

21 May 2014

Kim Partington  
Pricer Imaging Limited

Reference PL4520-08-76-1.3

JIP 001: WP 2 Final Report  
Surface Surveillance Capabilities for Oil Spill Response using Remote Sensing

Provided for IPECA and OGP



This report provides the key recommendations from WP 2, which formed an assessment of surface surveillance capabilities for oil spill response, carried out for IPECA and OGP under contract OGP-IIP Paper 001.

10 March 2014

WP 2 Working Committee

Report prepared by Pricer Imaging Limited, under contract OGP-IIP Paper 001, for the OGP-IIP Working Committee. The report is the property of Pricer Imaging Limited and is not to be distributed outside the OGP-IIP Working Committee.

Prepared by Pricer Imaging Limited

Reference PL4520-08-76-1.2



Work Package 5: Common Operating Picture  
Recommended practice for Common Operating Picture architecture for oil spill response  
FINAL REPORT



OGP-IPECA

OSR-IIP PROJECT  
RECOMMENDATIONS ON VALIDATION TECHNIQUES

Final report

OGP-IPECA | REPORT NO. IPECA-001 | 001 | 10 | 10 | 2014

OGP-IPECA | REPORT NO. IPECA-001 | 001 | 10 | 10 | 2014

OGP-IPECA | REPORT NO. IPECA-001 | 001 | 10 | 10 | 2014



OGP-IPECA

OSR-IIP  
REVIEW OF ARKELLA AND METOCLEAN DATABASES

Final report

OGP-IPECA | REPORT NO. IPECA-001 | 001 | 10 | 10 | 2014

OGP-IPECA | REPORT NO. IPECA-001 | 001 | 10 | 10 | 2014

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national  
ciliation  
& Gas  
Producers

# Good Practice Guidance (GPGs)

## RESPONSE

- Aerial Surveillance of Oil Spills
- Satellite Remote Sensing of oil Spills
- In-water Surveillance
- Dispersants: Sea surface
- Dispersants: Subsurface
- At Sea Containment and Recovery
- In-Situ Controlled Burning
- Shoreline Response Planning and SCAT
- Shoreline Cleanup Techniques
- Inland Responses
- Waste Management
- Oiled Wildlife Management
- Economic Assessment & Compensation
- Responder Health and Safety

## STRATEGY

- Oil Spill Preparedness & Response framework
- Incident Management Strategies
- Net Environmental Benefit Analysis (NEBA)

## PREPAREDNESS

- Contingency Planning
- Sensitivity Mapping
- Tiered Preparedness & Response
- Training
- Exercises

## IMPACTS

- Impacts on Marine Ecology
- Impacts on Shorelines

**How do these GPG's and  
guidance documents help us  
in satisfying regulator  
principles and expectations?**

# Response capability should be fit for purpose

- The key to defining “fit for purpose” is understanding scenarios, which lead to understanding risks and defining needs

## Example 1:

- JIP 6 “Risk Assessment and Response Planning for offshore installations” presents a detailed methodology for an operator to carry out an assessment of response resource needs and capability and to prove to themselves and the regulator that they have the ability to cascade resources in to the spill area

This provides a validated link into a step-wise contingency planning process, which is how the industry is – or should be – consistently planning for upstream OSR

# Response capability should be fit for purpose

## Example 2: Detection and monitoring

As part of the “Surveillance, Modelling and Visualization” (SMV) program of the JIP, we assessed six scenarios to evaluate combinations of technologies to detect and monitor hydrocarbons in:

1. An onshore spill
2. A release at a coastal terminal
3. An oil tanker in transit offshore
4. An offshore platform oil and/or gas—both surface and subsurface accidental releases of finite amount
5. An offshore pipeline rupture
6. A deep water well blowout—Macondo-type continuous release

# Performance levels should be set to promote effective preparedness

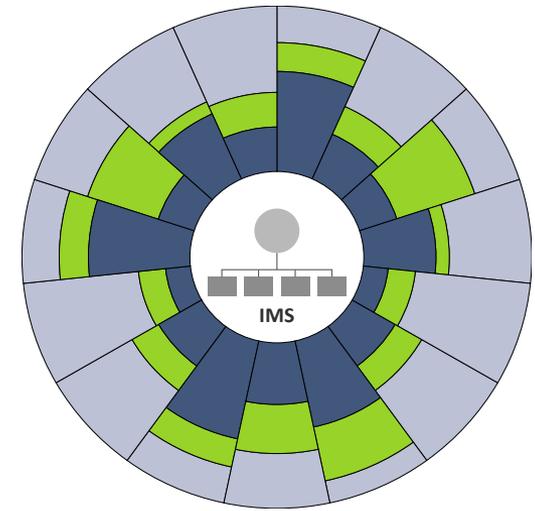
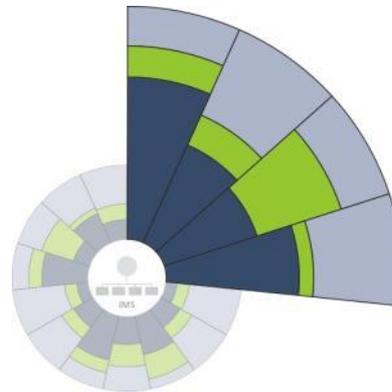
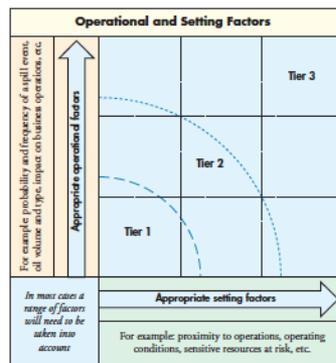
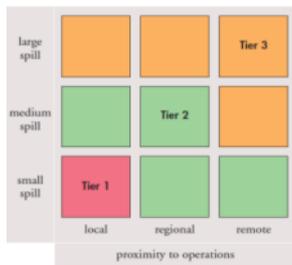
- There are some situations in which strict performance measures can directly correlate to effective responses – but there are relatively few of them.
- Identifying meaningful performance measures for preparedness is a challenge. Our preference is to focus on assessment rather than numerical measures
- Some examples:
  - The EDRC approach for mechanical recovery is flawed more than a few kilometers off shore
  - Duplication of resources for each operator in the same basin is inefficient and counterproductive
  - Data – driven NEBA assessments attempt to quantify qualitative decisions
- So.... If these are problematic, what does work?

# Performance levels should be set to promote effective preparedness

- “Preparedness” is part of a multi-component system:
  - Equipment + people + planning + training + exercising + review = response capability
- “Box – ticking” is great at establishing whether the components are there... but is ineffective at demonstrating whether they will work as intended in a real response
- Industry capability can be verified through participation and observation in planning and exercises
- In our view, participating in exercises will also help demonstrate the need and value of pre-approvals in improving the speed and efficacy of response
- An effective Incident Management System is an underrated component of success

# Response equipment and services have evolved: so must the Tiered Preparedness and Response model

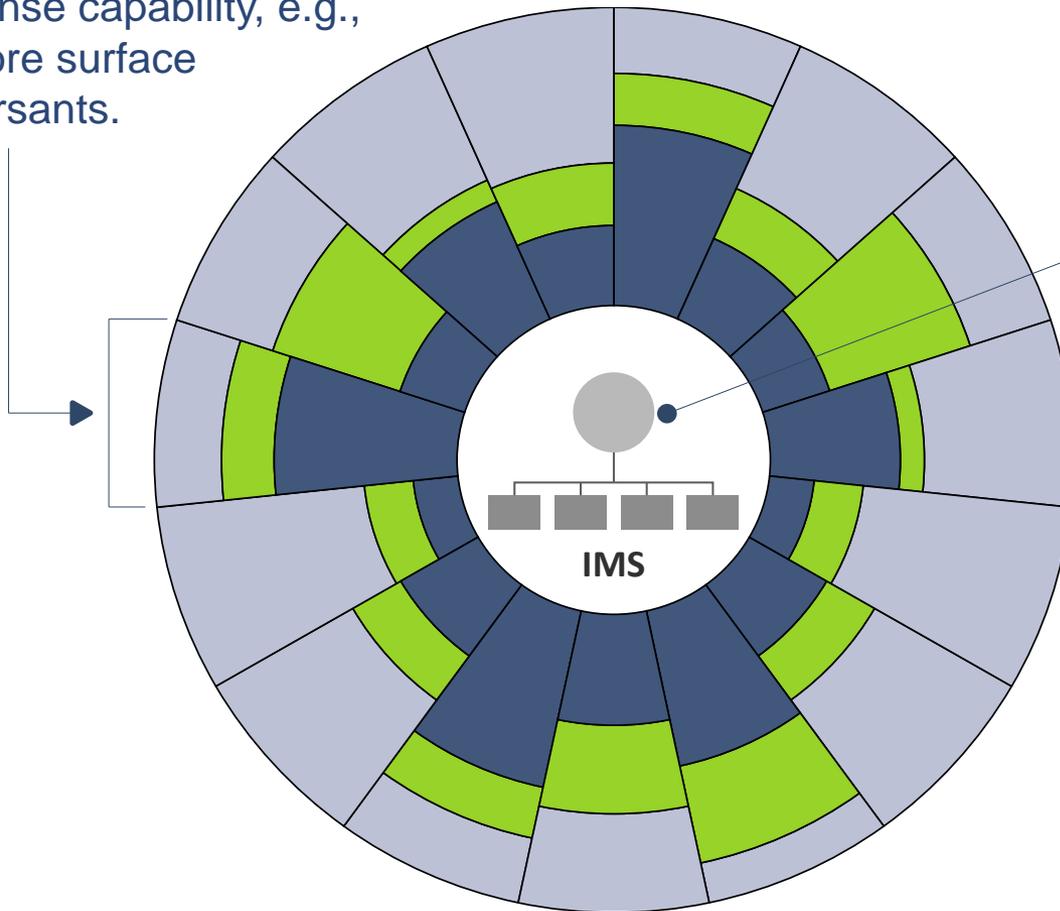
- Modern technology, advanced logistics capabilities, and new communication tools have improved industry's ability to cascade resources to an incident location.
- The benefits of today's specialization and expertise are diminished if they must be replicated at each operating site or within each country.
- The model facilitates a tiered response by depicting which response capabilities are needed and in what timeframe.



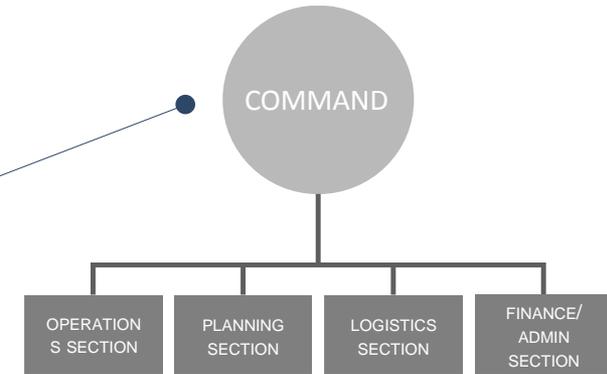
EVOLVING  
MODEL

# The new Tiered Preparedness and Response model

Each wedge represents a specific type of response capability, e.g., offshore surface dispersants.



Incident Management System



The incident management system (IMS) symbol is at the center of the model to indicate that incident management is a central consideration when planning for potential incidents using the Tiered Preparedness and Response approach.

# Examples of appropriate resource capacity

At each location, factors may exist which influence the ability to cascade resources and, therefore, require tailored capacities for each response capability. example: offshore surface dispersants

## LOCATION

## FACTORS

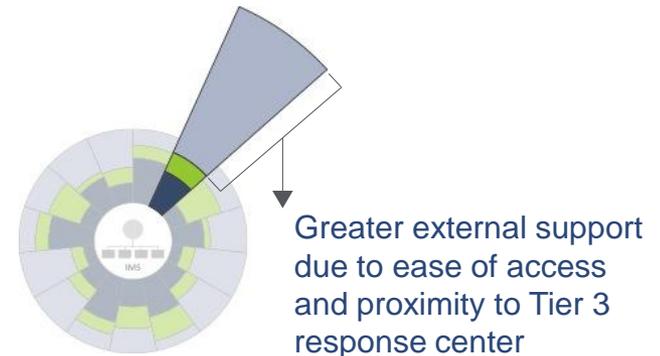
## DISPERSANT RESPONSE



A remote location in a country with access challenges and/or severe weather

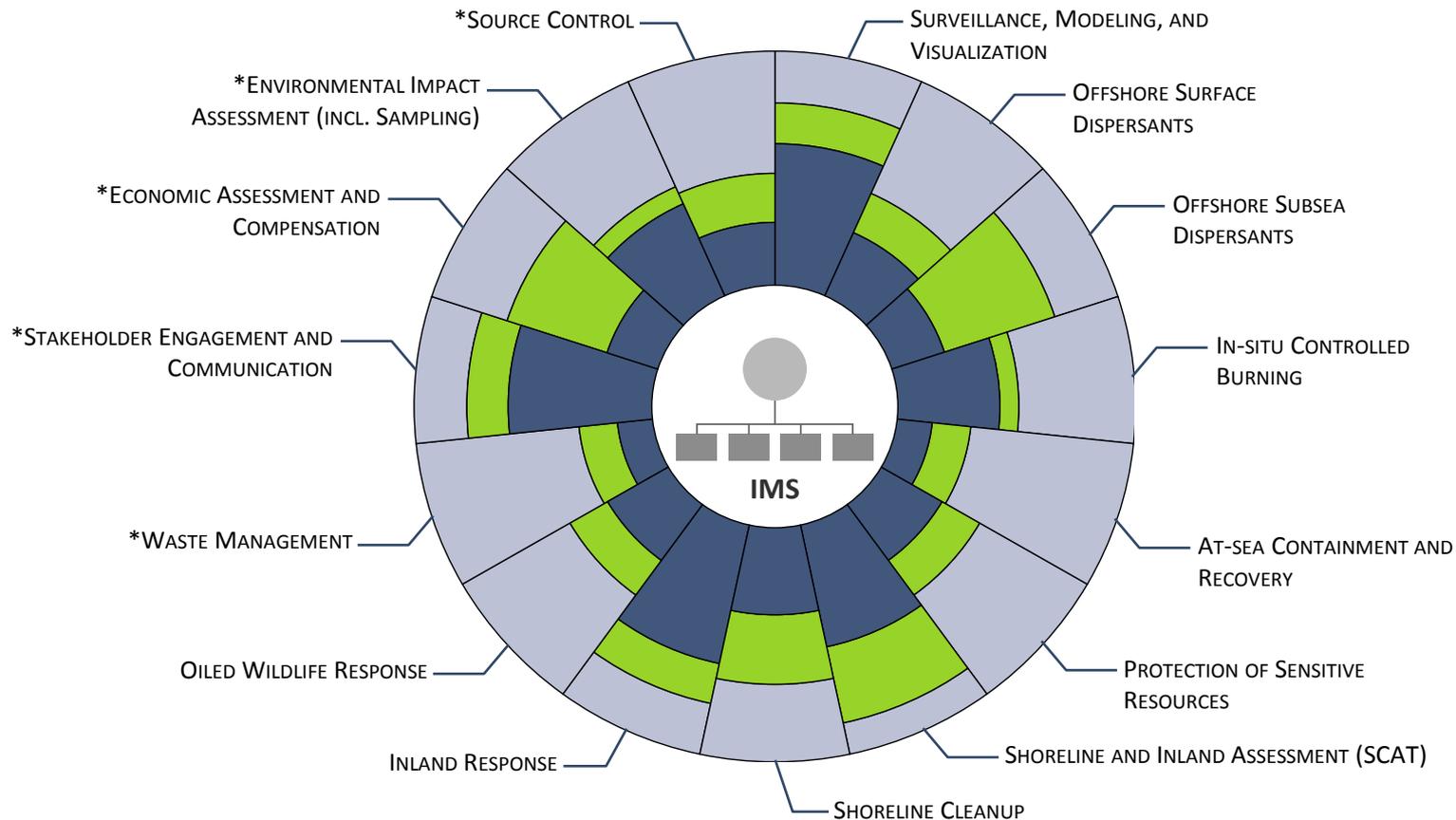


A coastal location adjacent to a Tier 3 response center



# Capabilities of Tiered Preparedness and Response

The following 15 capabilities essentially represent the scope of Tiered Preparedness and Response:



# Response capability must be sustainable

- A scalable approach allows for resources to cascade in from multiple international sources
- Plans should include sustaining a response through multiple IMS position backups
- GRN: Global Response Network of OSROs provides access to a broader pool of responders
- Industry expects to utilize all sources of response capability
- We do not view “sustainability” as a national issue – it is much broader

# Summary: where we have the opportunity to work together

- Consistent use of global NEBA methodology – not Arctic NEBA, US NEBA, European NEBA etc.
- Adoption of pre-approvals where supported by peacetime NEBA conclusions
- Ready access to all response tools as supported by NEBA
- Support for utilizing the most effective response tools first
- Adoption of clear TPR principles in planning (TPR GPG)

# Summary: where we have the opportunity to work together

- Support efforts to remove or reduce barriers (people, equipment, etc..)
- Participation in exercises and drills (Exercise and Training GPG)
- Adopt a risk – based approach to offshore response planning (JIP 6)
- Set realistic expectations for OSRO competency and capability (JIP 9)
- Set realistic principles for exercise frequencies and the basics of Contingency Planning

# Good Practice Guidance for an Holistic Oil Spill Capability

