

3000 metres water depth 2002

LIFT, POWER &
CONSTANT
SIGNALS
SUPPLIED TO
3000M, USING A
DP1, VOO. ONLY
POSSIBLE DUE TO
PRINCIPLES-BASED
INNOVATION AND
THE WINDER SYSTEMS'
MINIMAL WEIGHT &
FOOTPRINT.

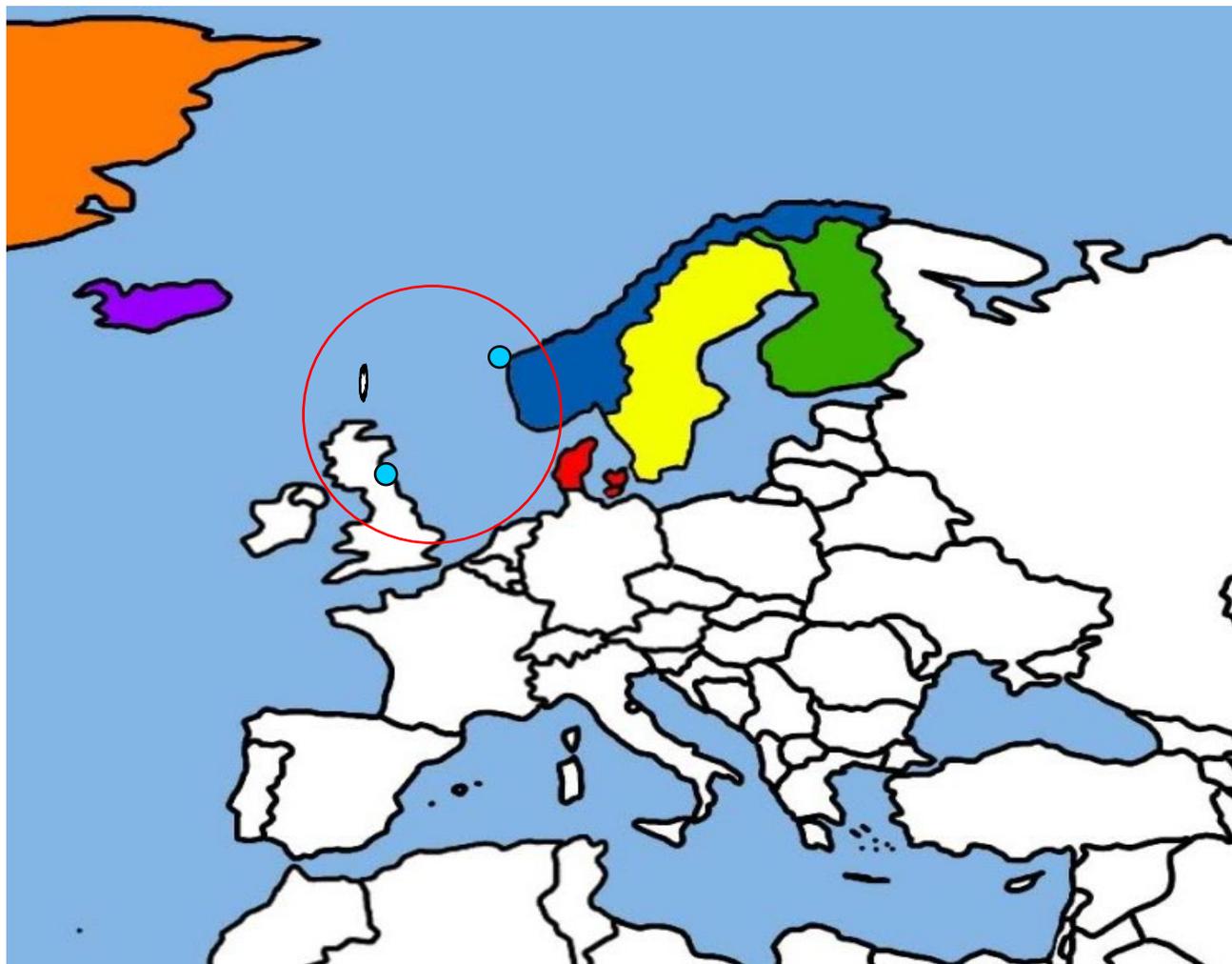


ss Persia

We had to make the change to synthetic filament rope and vessel of opportunity, if we wished to continue our specialist discipline of cargo recovery. All work was carried out on 'No Cure/No Pay'!

deep
tek

Deep Tek Companies



Deep Tek AS is located in Fosnavåg, Norway.

Deep Tek Ltd is located near St Andrews, in Fife.

Both work together on Technology Development and Implementation.





Revision of founding Discussion Document, which is now ten years old

Learning from the Past – Looking to the Future, Leading Discussion and Thinking



Salvage & Decommissioning Committee

Discussion Document:

Developing a Consistent, Cross-Sector Approach for Assessing the Impact of Man-Made Materials, Objects, Structures and Substances

(MMOSS)

on the Marine Ecosystem

Foresight Future of the Sea

A Report from the Government
Chief Scientific Adviser

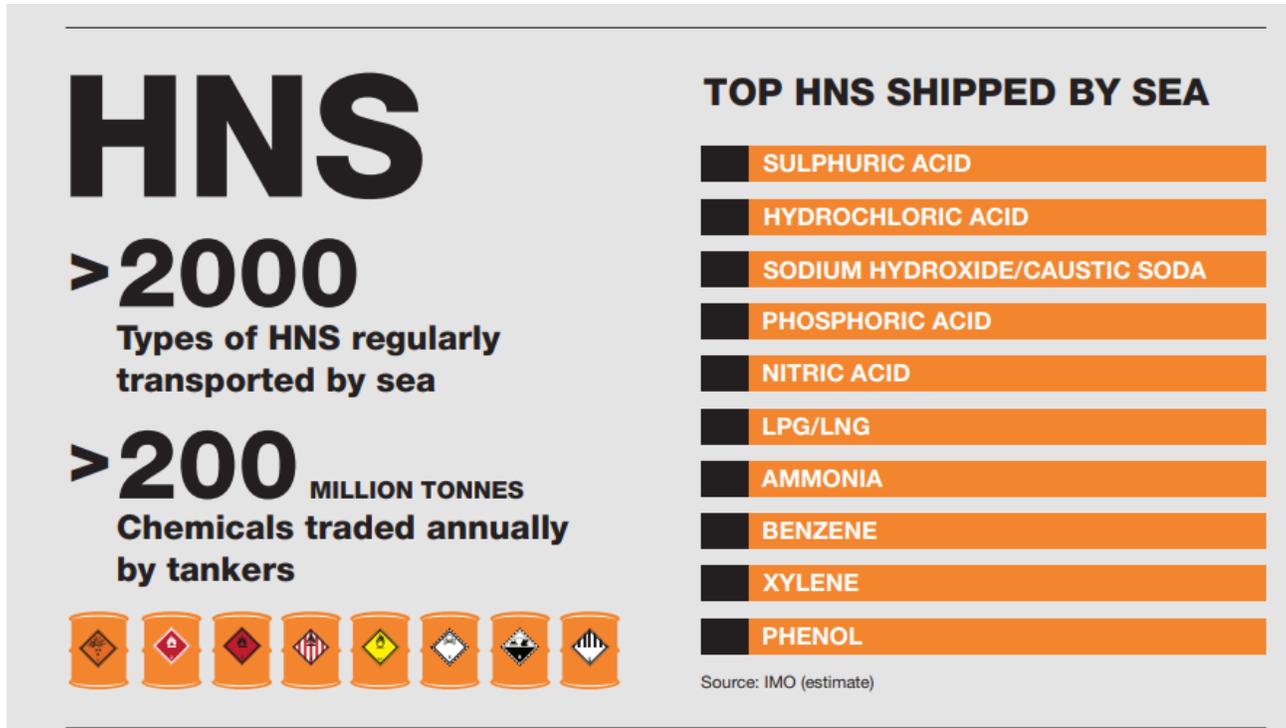


Taking Recommendations and Conclusions of Foresight: Future of the Sea Report as Core Messages

*The sea is critical to planet Earth, and its future will fundamentally affect ours. Science and innovation have an important part to play in shaping that future. Science holds the key to understanding the impact of a changing marine environment, informing our response to it, while emerging technology brings opportunities to develop **and stimulate economic growth**, as well as improve our marine science capability. (Foresight Future of the Sea, A report from the Government Chief Scientific Advisor, 2018).*

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/706956/foresight-future-of-the-sea-report.pdf

What is transported by Sea?



<https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/MEPC2-Circ27.pdf>

'HNS' include: oils; other liquid substances defined as noxious or dangerous; liquefied gases; liquid substances with a flashpoint not exceeding 60°C; dangerous, hazardous and harmful materials and substances ...defined as possessing chemical hazards.



In what Quantity?

NUMBER OF SHIPS CARRYING HNS WORLDWIDE IS GROWING



CONTAINER SHIPS CARRYING PACKAGED HNS:

2600 IN 2000

5000 IN 2015

Source: Equasis



LNG TANKERS:

250 IN 2007

420 IN 2014

Source: GIIGNL



CHEMICAL TANKERS:

3100 IN 2005

4070 IN 2014

Source: Equasis



LPG TANKERS:

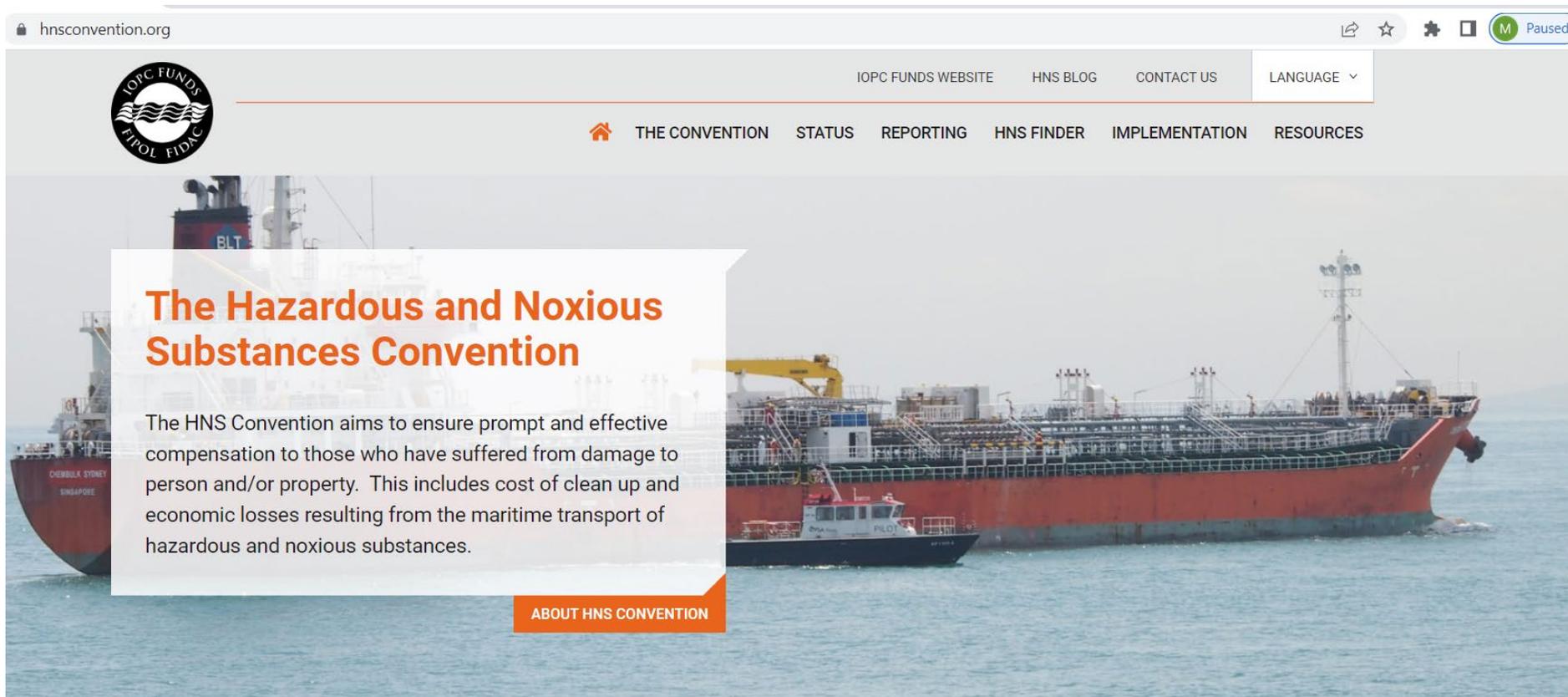
940 in 2000

1250 in 2014

Source: Clarksons

Old figures...

What measures are in place?



hnsconvention.org

IOPC FUNDS WEBSITE HNS BLOG CONTACT US LANGUAGE ▾

THE CONVENTION STATUS REPORTING HNS FINDER IMPLEMENTATION RESOURCES

The Hazardous and Noxious Substances Convention

The HNS Convention aims to ensure prompt and effective compensation to those who have suffered from damage to person and/or property. This includes cost of clean up and economic losses resulting from the maritime transport of hazardous and noxious substances.

ABOUT HNS CONVENTION

HNS Convention 2010 – designed to ‘fill a gap in liability and compensation’.

Is this a shared view?

COMPENSATION: THE MISSING LINK



PREVENTION

International regulations are in place covering:

- Ship design, operations and safety on board
- Safe transport of dangerous goods
- Safety of loading and unloading operations



PREPAREDNESS & RESPONSE

International regulations are in place encouraging (or facilitating):

- Preparedness and response to shipping incidents, including HNS
- International or regional arrangements for pollution response



LIABILITY & COMPENSATION

In the event of an HNS incident during transport by sea:

- No uniform and comprehensive international regime currently in force to provide compensation for costs, including clean-up and restoring the environment



Status – not yet ratified. Current signatories include Canada and Norway

Potential Opening of Trade Routes

The economic attraction of the North East Passage



	
<p>PREVENTION</p> <p>International regulations are in place covering:</p> <ul style="list-style-type: none"> • Ship design, operations and safety on board • Safe transport of dangerous goods • Safety of loading and unloading operations <p>✓</p>	<p>PREPAREDNESS & RESPONSE</p> <p>International regulations are in place encouraging (or facilitating):</p> <ul style="list-style-type: none"> • Preparedness and response to shipping incidents, including HNS • International or regional arrangements for pollution response <p>✓</p>

Do we believe this as far as the potential Arctic routes are concerned?

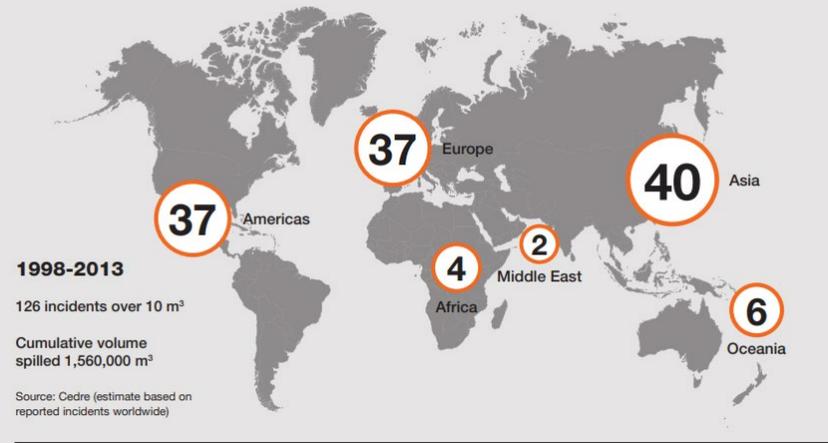
If not...

1. What policy measures should we suggest are put in place?
2. What should be the function of ESG and insurance?



Foreseeable Event. Not 'if' – but, 'when'?

SHIP-SOURCE HNS INCIDENTS



POTENTIAL CONSEQUENCES OF HNS INCIDENTS

HUMAN HEALTH AND SAFETY



Short-term and long-term health risks (e.g. toxic gas release, exposure to chemicals, etc.)



Death and personal injury (e.g. explosion)

ECONOMIC LOSSES



Impact on fisheries



Impact on tourism

CLEAN UP COSTS AND IMPACTS ON THE ENVIRONMENT



Preventive measures to minimize damage



Impact on wildlife and toxicity towards marine species



Clean-up and removal costs



Restoration of sensitive habitats



In-built assumption that sensitive habitats can be restored.

