

Environmental Regulations for Offshore Drillings: Comparing International Regulations and Recommendations for Israel

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DRILLING OPERATIONS

POTENTIAL SOURCES OF EFFECTS

ACCIDENTS

- Oil spills
- Chemical spills
- Gas releases
- Dropped objects
- Collisions

WASTES RETURNED TO SHORE

- Solid wastes
- Liquid wastes and tank washings
- Muds and cuttings

DISCHARGES TO SEA

- Sediments from riserless drilling
- Cooling water
- Ballast water
- Dissolution of corrosion protection and antifouling protection
- Deck drainage and washings
- Sewage and food waste
- Machinery space and other oily drainage
- Muds and cuttings
- Brines, cement returns and other drilling chemicals

Key

- Routine
- Optional
- Accidental events

HELICOPTERS

SEMISUBMERSIBLE RIG

DERRICK

PONTOONS

RISER

ANCHORS

BLOW OUT PREVENTOR

ATMOSPHERIC EMISSIONS

- Combustion emissions from power generation
- Fugitive emissions from fuel and chemical storage
- Local exhaust ventilation emissions
- Dust from bulk loading
- Combustion emissions if well test flaring

OTHER INTERACTIONS

- Physical presence of rig and support vessels
- Airborne noise
- Underwater noise
- Light
- Physical disturbance of seabed from anchoring or spud cans
- Rock dumping to prevent scour around the spud cans

JACK-UP RIG

DERRICK

RIG LEGS

SPUD CANS

• Most Drilling Operations effects required routine & strict authority supervision;

• Accidents need full preparations & regulations in order to reduce likelihood and mitigate consequences.

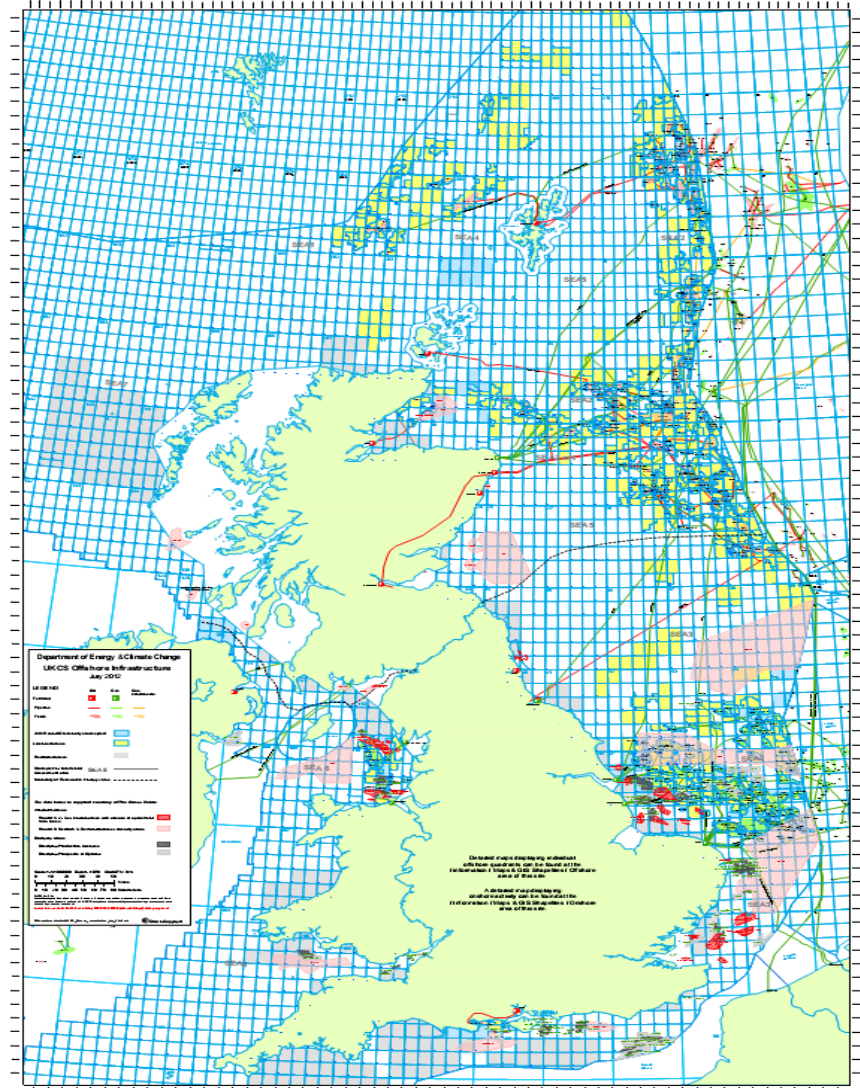
U.S.A - Long List of Federal Regulations

- Responsibility for 7 billion people, over 6200 leases, ~3,200 production structures, over 34,000 wells.
- Vast & Mature Industry.
- Hundreds of Federal Regulations, long complex “shop list” to comply.
- Authority - Ministry of interior.
- Enforcing - **BOAM**, **BSEE**.
- Central Control & supervision
(Is it effective?)



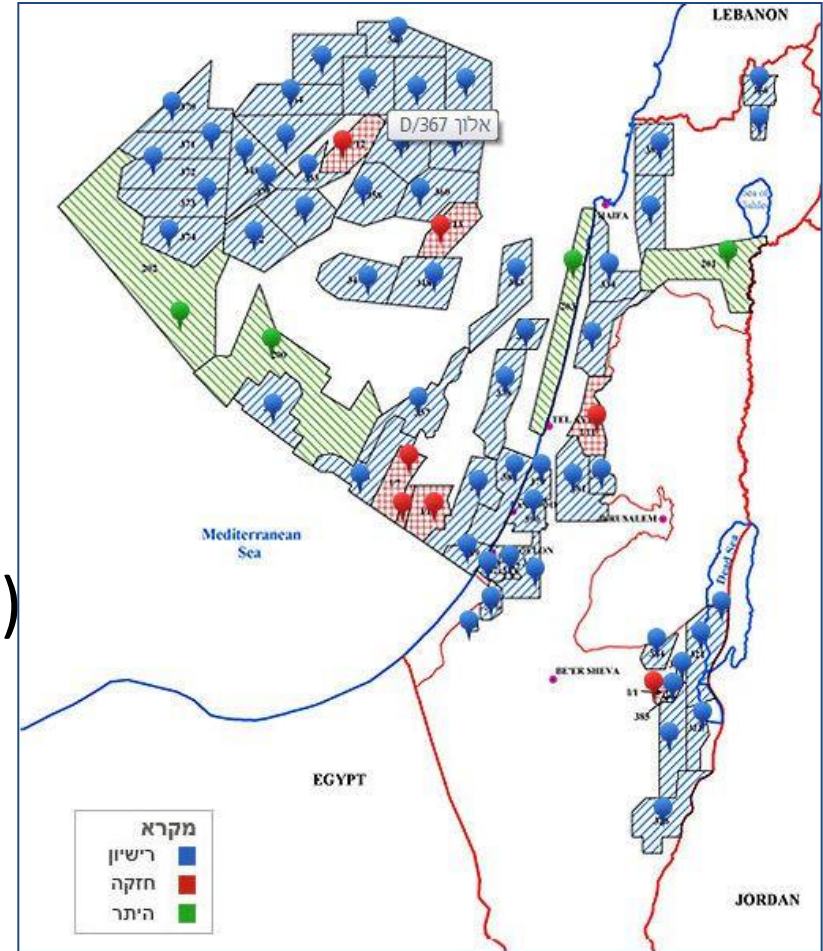
UK- Separation of Enforcing Powers

- Over 300 Offshore facilities.
- Regulations as outcomes of disasters (Torrey Canyon- 1967, Piper Alpha- 1988).
- Goal-setting approach to safety.
- Close cooperation and trust between regulators & industry.
- Enforcing authorities/Regulators:
 - **HSE** - Health and Safety Executive.
 - **EDU** - Energy Development Unit.
 - **MCA** - Maritime & Coastguard Agency.



Israel – Racing Towards a Disaster

- Evolving industry.
- Regulator – Energy Ministry.
- **Regime - ???**
- **Contingency plan & abilities** – ? (“in progress”)
- **Special legislation** - not defined.
- **Public transparency** - ??



EU – Facing the Problem

EU investigation after DWH (2010) showed that EU faces a threefold problem:

- A) The risk of a major offshore oil / gas accident is significant:
 - (1) Existing legislation & regulatory insufficient.
 - (2) Existing industry practices provide partial solution.
- B) Suboptimal levels of emergency preparedness.
- C) Inadequate liability provisions.

**** That cause EU to Chang Policy to Directive ****
(instead of guidelines) activate 2013-2014

Comparison Chart

subject	USA	UK	Norway	Denmark	Israel
Enforcing Authorities	BOEM, BSEE	EDU, HSA, MCA	NPD, PSA	DEA, KLIF	Gas Authority, Petroleum directorate
Regulations /Standards	Exist	Exist	Exist	Exist	Not defined
Enforcing Planning & Pre-Approval (well design, cementing, BOP'S, SEMS, ESD,etc)	Compelling	Compelling	Compelling	Compelling	Not defined
Central and Self Supervision (including equipment) & Objective Expert Control	Exist	Exist	Exist	Exist	Not defined
Contingency Plan & abilities —equipment, training preparations.	Compelling	Compelling	Compelling	Compelling	????
Developer Liability and compensation provisions	Exist & defined	Exist & defined	Exist & defined	Exist & defined	Not defined In published regulations

Recommendations for Israel

- **Strict regime with goal setting approach** (Danish & EU regulations and standards).
- **Revised and simplified legislation guidelines.**
- **International cooperation** (regulators, risk mitigation).
- All exploration and drilling activities should require **preparation of EIA.**
- **Central control and strict supervision** while using objective 3rd party revision experts.
- **WCS mitigation** of oil spills and accidents(the full national contingency plan).
- **Full developer-responsibility** and insurance capacity for outcomes (global standards).
- **Full Transparency and public oversight for all phases.**

Thank You

