

# Danish Offshore Regulations in relation to Well Decommissioning

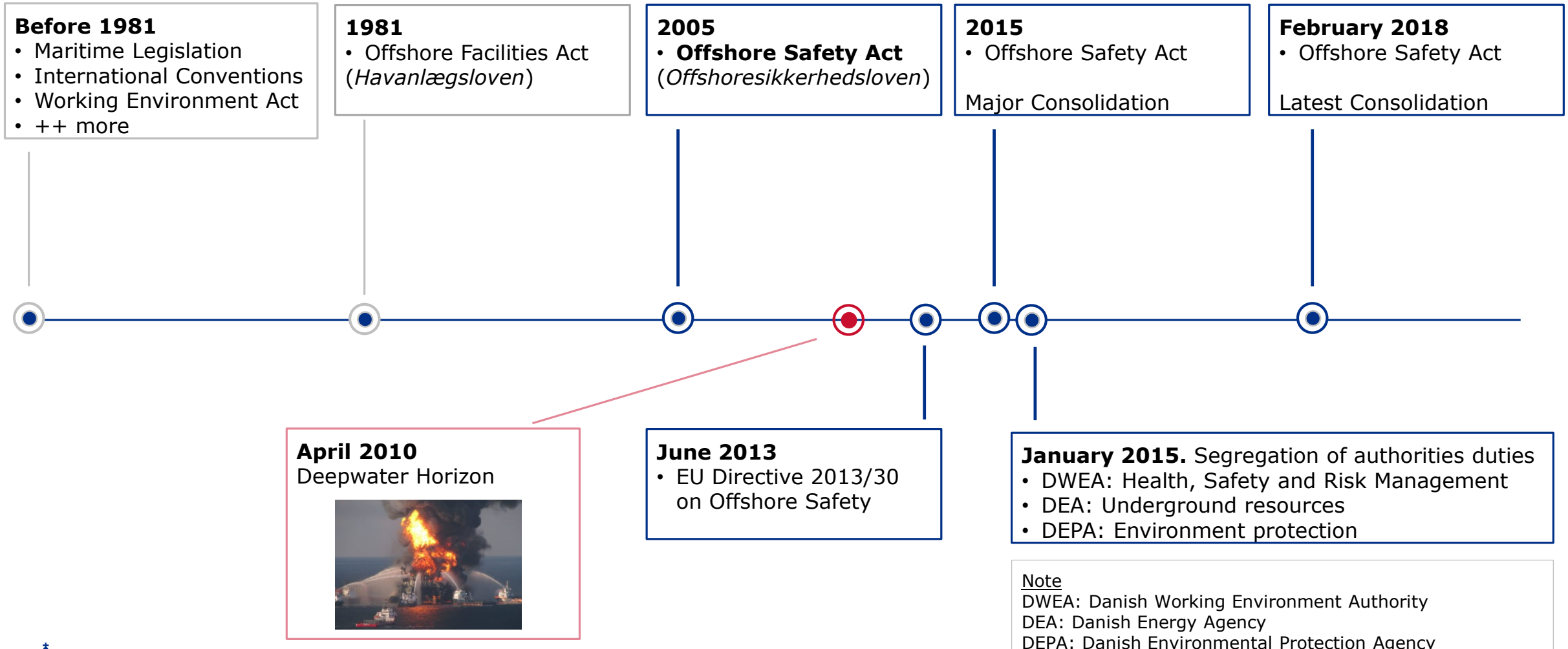
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# Offshore Oil and Gas – Timeline for Key Changes in Regulations



# Offshore Safety Act and Executive Orders

## Offshore Safety Act (Consolidated Feb 2018)

### Purpose

- *"Promote a high level of health and safety offshore which is in accordance with technical and social developments in society"*
- *"Create a framework that allows companies themselves to address health and safety issues offshore"*

### Key Requirements

- *Management System*
- *Health and Safety Document*
- *Risk Assessment and Risk Mitigation (ALARP)*
- *Independent Verification (of SECE)*
- *Approvals and Permits*
- *Emergency Response*
- *Training and Competencies*

## Executive Orders (Bekendtgørelser)

- 31 Executive Orders in place
- Defines specific rules and requirements in accordance with Offshore Safety Act

## Offshore Safety Council (Offshoresikkerhedsråd)

- Representatives from the employee organisations, employers, and other relevant authorities
- Assist in preparing regulations pursuant to Offshore Safety Act
- Follows technical and social developments regarding offshore oil and gas operations

## Details

- Visit [www.offshore.at.dk](http://www.offshore.at.dk)
- Offshore Safety Act in Danish and English
- Executive Orders. Available in Danish only

# Danish Working Environment Authority (DWEA)

- Section for Offshore Oil and Gas Activities (OOG)

## Key Roles

- **Safety and health inspections** of offshore oil and gas production installations, mobile installations, well operations etc.
- **Review of design** of production facilities and fixed non-production installations and pipelines.
- **Permits** in connection with the operation, modification and dismantling of offshore installations and pipelines.
- **Approvals** of planned **well operations** where there is a risk of accidental release of oil, gas or hazardous substances or materials that could lead to a major accident.
- Preparation of safety and health **rules**, including implementation of EU directives.



## DWEA Offshore Oil and Gas Team

- 9 Inspectors / Technical Experts
- 3 Legal Experts
- 1 Director

# DWEA International Engagement

- Where do we discuss the future of (well) decommissioning?

## North Sea Offshore Authorities Forum (NSOAF)

- Position Paper issued in 2016, encouraging industry to develop Joint Code of Practice for Well Decommissioning
- DWEA have shared Position Paper with "Oil & Gas Denmark"
- Position Paper currently in process of being updated



## International Regulators Forum (IRF)

- General discussions of possible benefits from aligned norms, standards and best practice

## EU Offshore Authorities Group (EUOAG)

- Possible review of decommissioning requirement and subsequent need for issue of associated Directive

## **NSOAF Wells Working Group set goals**

- Reduce the risk of well decommissioning incidents in NSOAF area
- Identify problem areas and challenges in well decommissioning management
- Address gaps between jurisdiction across NSOAF countries
- Reach a common understanding of regulatory requirements and national standards
- Provide industry with a regulatory environment allowing for advances in well decommissioning processes meeting HSE requirements
- Highlight the importance of considering well decommissioning from the design phase of a well's lifecycle

# Well Decommissioning Regulation in Denmark– Simplified

## 1) Operator Risk Assessment

- Determine if well operation carries risk of accidental release of substances and materials that may lead to a major accident?
  - **Yes – DWEA Approval required (§28a)**
  - **No – DWEA Notification required (§28b)**



## 2) Legal Section 28a Approval

- Detailed well programme
- Risk assessment
- Verification of well operations, cf. EO 835 § 56-60
- Recommendations made by third party verification
- Changes to internal contingency plan

## Minimum Technical Requirements

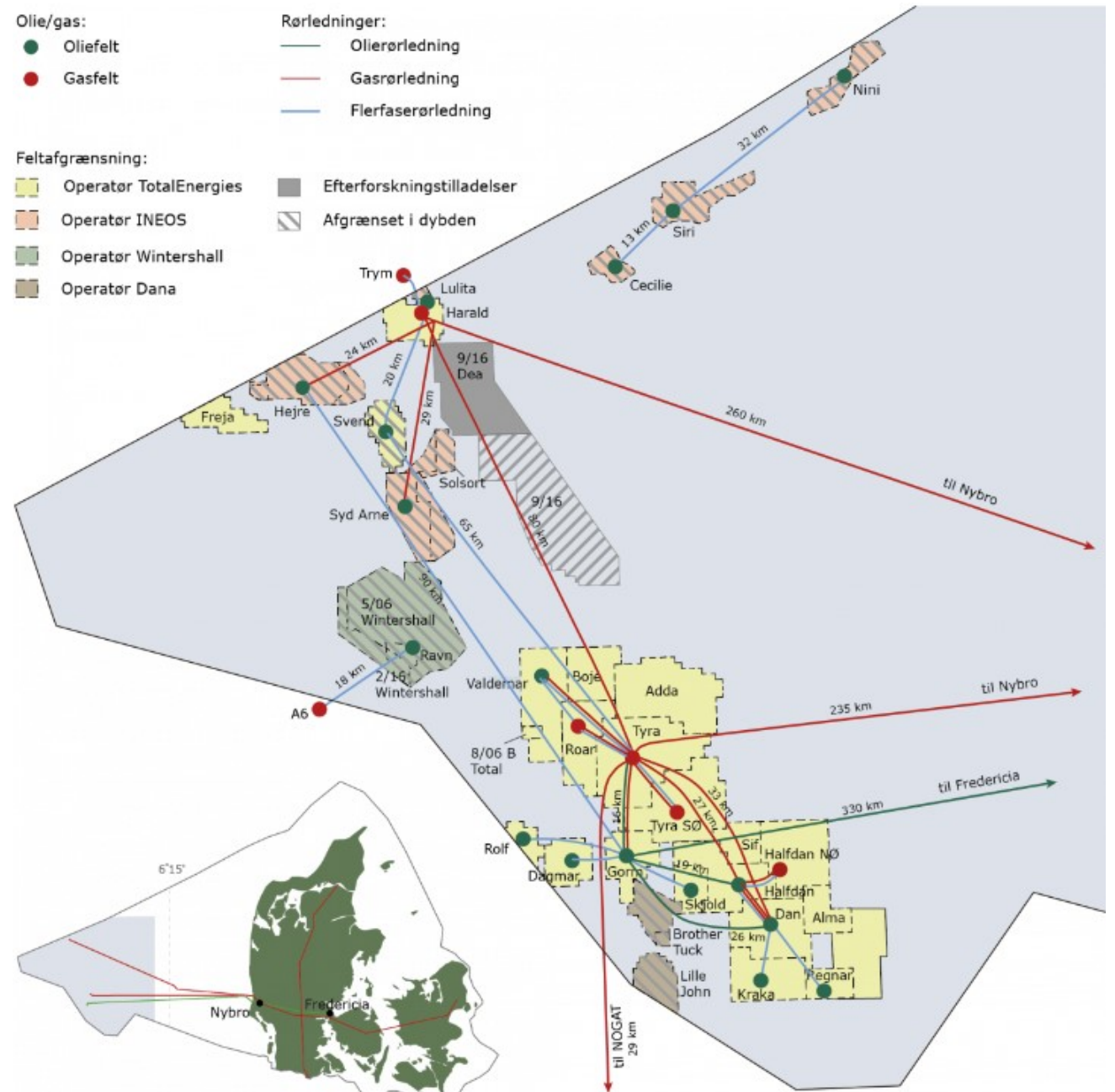
- Recognised norms and standards must be applied in connection with constructing, drilling and **abandoning** a well
- Deviation accepted if higher health and safety level will be achieved or due to the technological development
- Risk assessment and an ALARP assessment is required in order to deviate from a standard

## Recognised Norms, Standards and Guidelines

- NORSOK-D010, Well Integrity Standard
- Oil and Gas UK, Guidelines on Well decommissioning

# Wells to be abandoned In Denmark

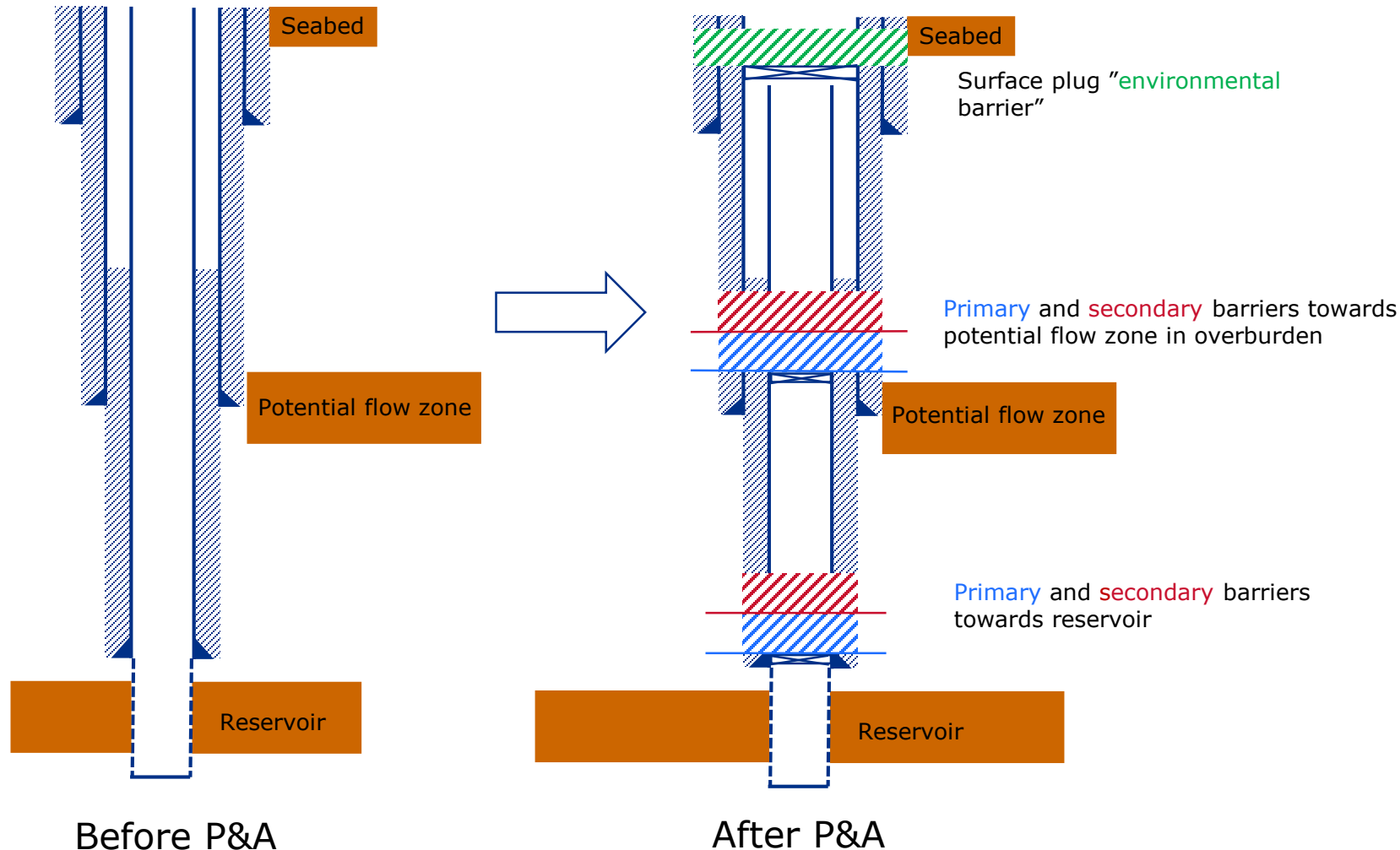
- Two main operators
- Ca. 500 wells to be abandoned in the next 30 years
- Approximately 5% of North Sea well inventory
- CCS



Source: Energistyrelsen

September 2021

# Well Decommissioning



- Typical abandonment design in Denmark
- Each permanent barrier is a sum of well barrier elements
- Well barrier elements acceptance criteria
  - Test
  - Verification
  - Monitoring
- Robust & reliable solutions