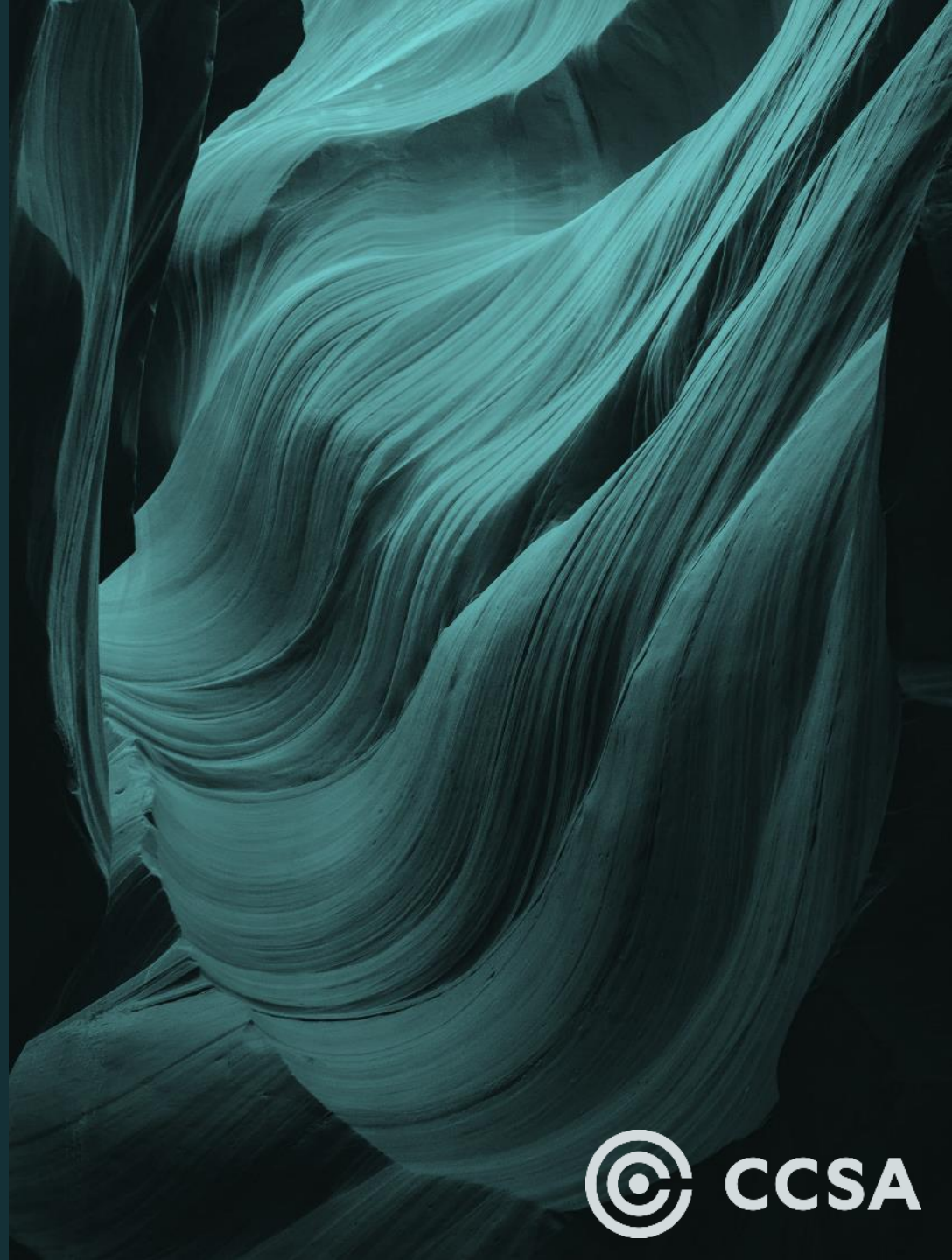
CCSA Health & Safety Task Subgroup

Virtual Meeting

Convenor: Toby St Leger (Harbour Energy, James Jenkins (DNV), Jenny Sutcliffe (Phillips66)

8th October 2024



House Keeping

- Meeting is being recorded for internal note taking purposes
- CCSA Competition Law Policy notice is attached to the meeting invite

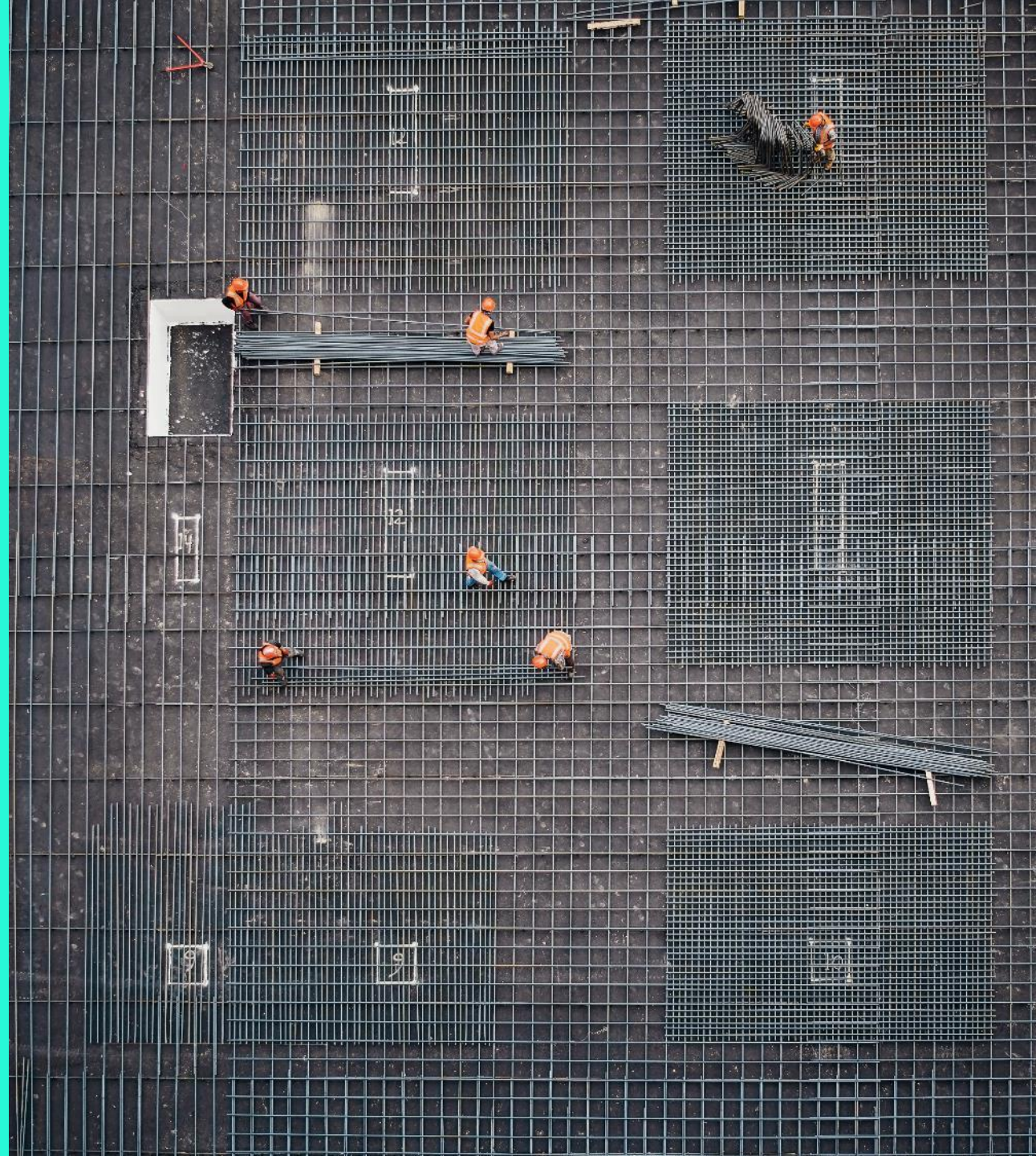
- If you are not speaking, please mute your microphone
- Please **raise your hand** if you wish to comment, you will be invited to come off of mute, if you can also turn on your camera
- Please also pose any **comments in the chat** and these will be picked up by the secretariat

Agenda

No.	Approx. Time	Item	Speaker
1	10:30 [5 mins]	**Introductions and CCSA competition law policy notice**	Despoina Tsimprikidou (CCSA)
2	10:35 [20 mins]	**Presentation of key health & safety topics:** - Offshore and nearshore SSIVs - ESDV leakage rates - Emergency responses - CO2 Hazard and Effects Criteria – personal protection, ALARP, Good Practice Guidance - Supply Chain & 3rd party assets	Toby St Leger, John Entwistle, All
3	10:55 [up to 60 mins]	**Discussion:** - Set health & safety priorities - Agree on future workstreams	All
4	11:55 [5 mins]	**AOB, next steps and next meeting date**	Despoina Tsimprikidou (CCSA)

Key Health & Safety Topics: Presentation & Discussion

Toby St Leger
John Entwistle
All



Overview

Infrastructure

- Capture Plants
- Pipelines
  - On / Offshore
- AGIs / Compression facilities
- Offshore Installations
  - Surface
    - NUI / NPA / PAI
  - Sub Surface
    - Wells / Manifolds

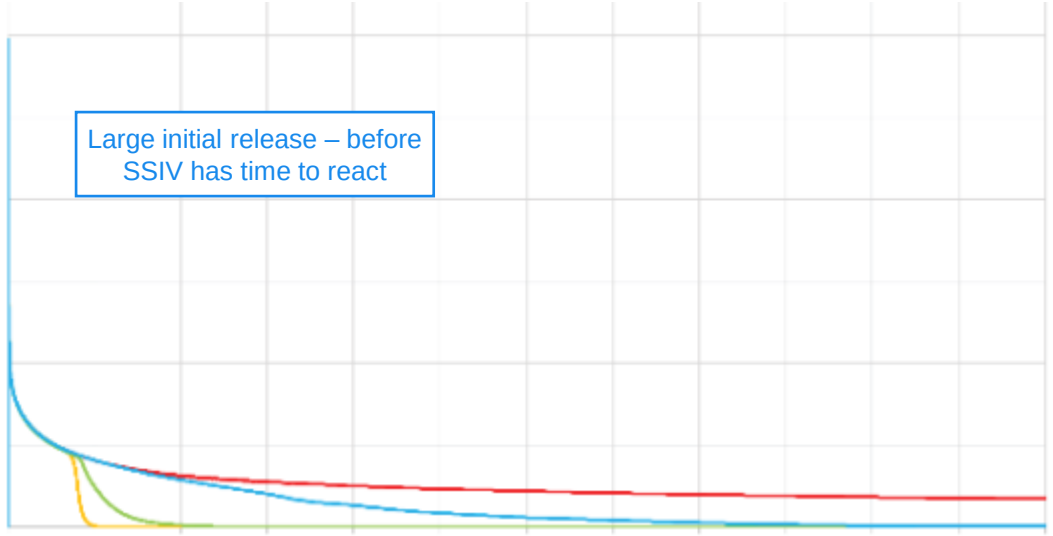
Operating Conditions / Model

- Pressures, Temperature, Flow etc
- Gas / Dense phase

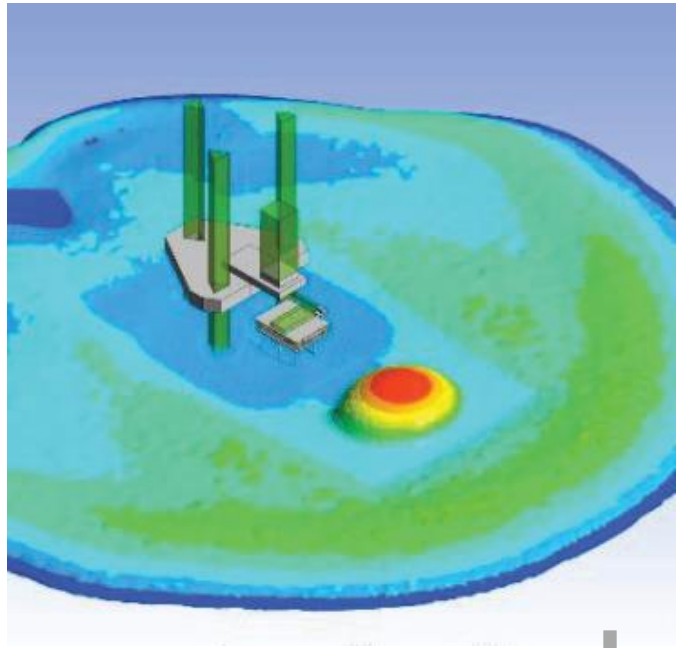
Which developers/ operators are doing what ?

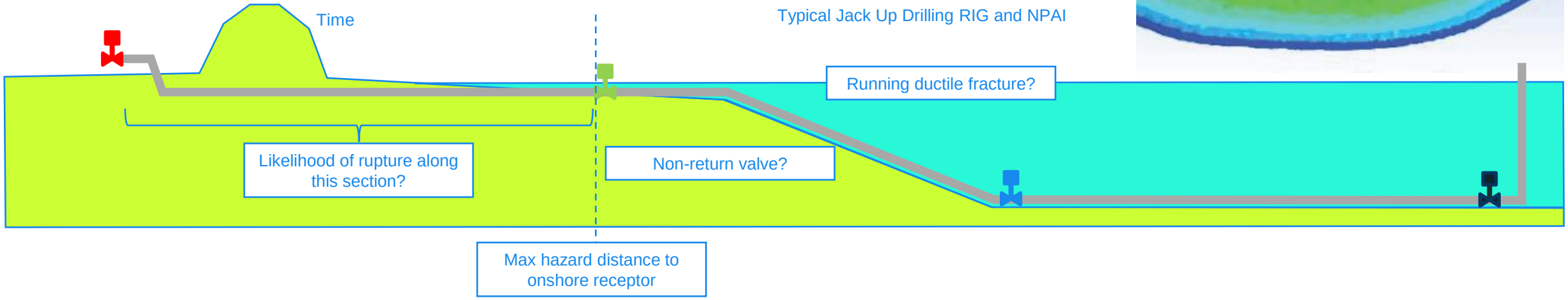
Common / unique areas of interest for safety and level of interest

Offshore & Nearshore SSIVs



Typical Jack Up Drilling RIG and NPAI

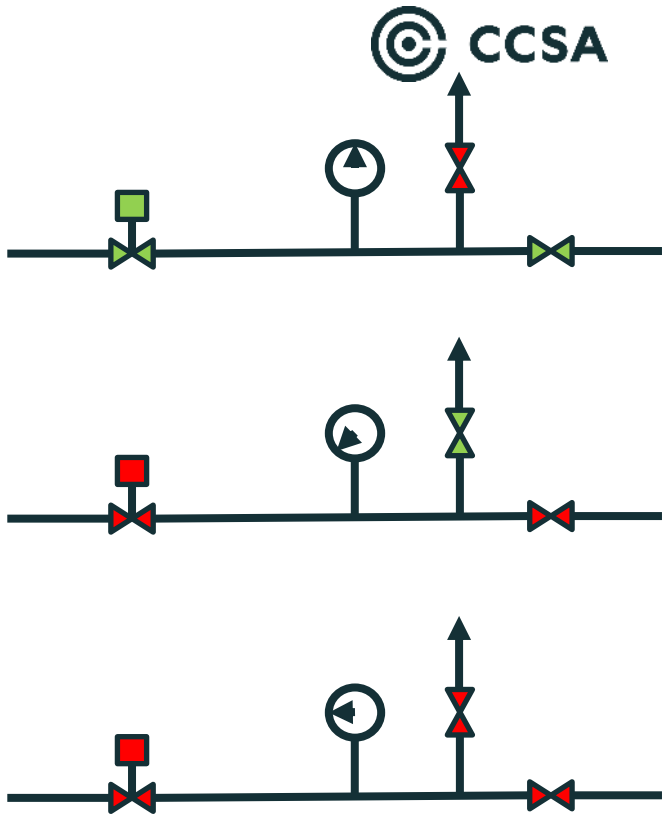




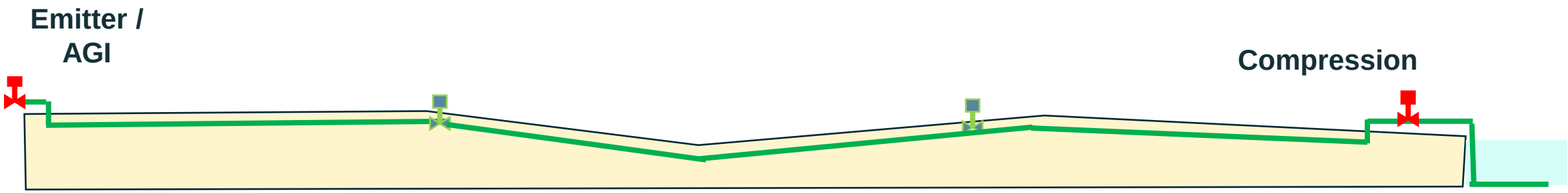
ESDV Leakage Rates

- *"The operator should make an assessment of the maximum internal [leakage] rate that can be tolerated. The rate of leakage should be based on the installation's ability to control safely the hazards produced by such a leak."*
  ACOP to PSR Schedule 3 (offshore installations)

- Annex D of PD 8010-4 alludes to similar testing of ESDV in onshore pipelines.
- Traditional method measures rate of repressurisation downstream of valve
- Does downstream section need to be flattened?
- Time consuming to vent dense phase CO_2
- What is an acceptable leakage rate? IDLH at site boundary?
- Are other technologies available?
- Does anyone have any experience using them?
- Are they proven for use with CO_2?



Cross Country Pipelines - BVS



Is installing BVS "reasonably practicable"?

What are the relevant advantages and disadvantages?

CO2 Hazard and Effects Criteria

TOXIC

- DtL / SLOT & SLOT
- COSHH & STEL/LTEL
- UK HSE CO2 Hazard Guidance
- General Guidance on physiological effects
- DNV RISKMAN Guidelines
- EI Guidelines
- IOGP Guidelines
- **OTHERS ???**

Low Temperature / Cryogenic

- Vulnerability of people - IOGP/DNV and Company criteria
- Eni Company damage / impairment criteria
- DNV RISKMAN & EI Guidelines
- **OTHERS ???**

Basis and methodologies for Evaluation & Risk Management

- **QRA / Toxic Gas Dispersion**
  - **Failure mechanisms and data DFP etc**
- **Low Temperature Assessments**
- **Others ?**

Emergency Responses

Onshore

- Operator's Emergency Response Plans
  - Emitter Interfaces
  - Leak detection
  - Shut down and Isolation
  - etc
- Offsite / Local Authority
- Nearby Industries, Populated areas, Crossings / Proximity etc

Offshore

- Detection, Isoloation, Depressurisation
- Escape Sets
- Safe Refuges
  - Safe breathing duration / cold jet impingement etc
- Means of Escape (TEMPSC, direct to sea)
  - Breathing air, ICE, electric
- ERRV
  - Ability to function within CO2
- MCA

Supply Chain and 3rd Party Assets

Capability to Design for CO2 Safety Operate in a CO2 Risk Environment

General Considerations

- Expertise and established standards / specifications etc for CO2 infrastructure design, engineering and integrity
  - In pipe hazards (e.g corrosion, multiphase, degradation etc)
- Well Services & Vendors

Offshore

- Jack Up Barge in Combined Operations
  - Safety Case, CO2 MAH related SECEs for Detection & Emergency etc
- MODU for well interventions, workover, drilling etc (SS or Platform Wells)
  - Safety Case and CO2 related SECEs + Rig systems for CO2 fluids (e.g diverters)
- Attendant Vessels
- Helicopters

Onshore ??

Potential Workstreams & Outputs

CCSA Position Paper

- Set out identified health & safety priorities.
- Lay out any challenges industry is facing.
- Use position paper to engage with government and regulators.

Industry & Regulator Workshop

- Follow similar structure as CCSA/Environment Agency Pathway to Permitting Workshops.
- Identify common ground and key challenges and priorities.
- Agree ways of working.

Roadmap for Policy Development

- Set out industry, government and regulator health & safety actions to support project deployment in the UK.
- Engage with external organisations on Good Practice Guidance.

Resource Library

- Collate industry expertise and useful existing resources.

AOB & Conclusions

- **AOB**
- **Actions**
- **Date for next meeting:** TBC
- **Close Meeting**