

SUMMARY OF WORKSHOP

A

Reduction of GHG'es while maintaining production and replacing reserves:

1. Water management
2. Offshore carbon capture
3. New energy carriers
4. Manage intermittency
5. "Zero emissions" drilling

- A further list of linked dilemmas

B

Cost reductions while improving safety:

1. P&A – leaving steel behind while maintaining barriers; use natural barriers; new barrier materials; P&A for CCS wells - avoid corrosion from below; design wells for P&A.
2. Quality of sensor data: holistic view; CBM
3. Digitalization, automation: need redundancy for human errors; maintain skills & knowledge; share learning on failures; share operational data
4. Contracts and incentives: GHG reductions; careful w/ HSE impacts.

C

Digitalization – realization of effects while managing cyber risks and other concerns:

1. Data gathering: CBM; new use of sensors
2. Data management: formats; standards; access/sharing
3. Data applications: defining good use cases is the challenge; transparency of AI;
4. Cyber security: change of mindset (intended actions); IT/OT interfaces;
5. Human aspects is essential in realizing digitalization effects
6. Leverage cross-industries opportunities
7. Demonstrate full value of digitalization – creates new jobs/opportunities

D

The energy transition and job creation opportunities:

1. Competitive advantages: HSE; business oriented; system approach tradition; Norw. innovation culture; digitalization; educational level; standards; collaboration; CCS; maritime competence; seabed mining; -> national and global market
2. Risks: brain drain; O&G attractiveness -> alliance w/ other industries; communicate interesting tasks
3. Align 21-processes for national competitiveness
4. New business models and smaller projects: opportunity for agile suppliers
5. Nuclear
6. Re-use infrastructure – re-purposing
7. Leverage technology from other industries