

## Successful cross-discipline workshop May 27

Almost 100 participants at digital OG21 cross-discipline workshop.

OG21 has as part of the on-going strategy revision conducted a number of open industry meetings and technology group workshops since January this year. The cross-discipline workshop on May 27 was the last of the planned meeting activities.

Close to 100 people participated, including representatives from the OG21 board, the OG21's Technology Groups (TGs) as well as some stakeholders of particular importance for OG21.

The purpose of the workshop was to test whether the technology priorities that have been identified so far in the process, adequately address the OG21 strategic objectives.

To do so, group discussions were focused on 4 dilemmas (topics):

**Topic A: Reduction of GHG'es while maintaining production and replacing reserves.**

**Topic B: Cost reductions while improving safety.**

**Topic C: Digitalization – realization of effects while managing cyber risks and other concerns.**

**Topic D: The energy transition and job creation.**

Results from the workshop will now be used in the final development of the OG21 strategy.

A high level summary of the group discussions is provided below:

### 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