



WHEN TRUST MATTERS

# Carbon Transport Panel

DNV CO2 Research

**Cynthia Spitzenberger**

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**[cynthia.spitzenberger@dnv.com](mailto:cynthia.spitzenberger@dnv.com)**

# A global assurance and risk management company



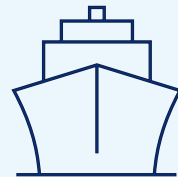
~15,000  
employees

100,000+  
customers

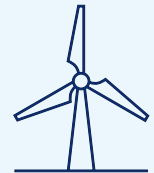
100+  
countries

5%+  
of revenue to R&D

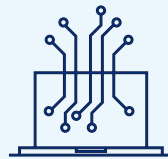
Ship and offshore  
classification and advisory



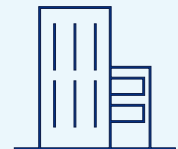
Energy advisory, certification,  
verification, inspection and  
monitoring



Software, cyber security,  
platforms and  
digital solutions



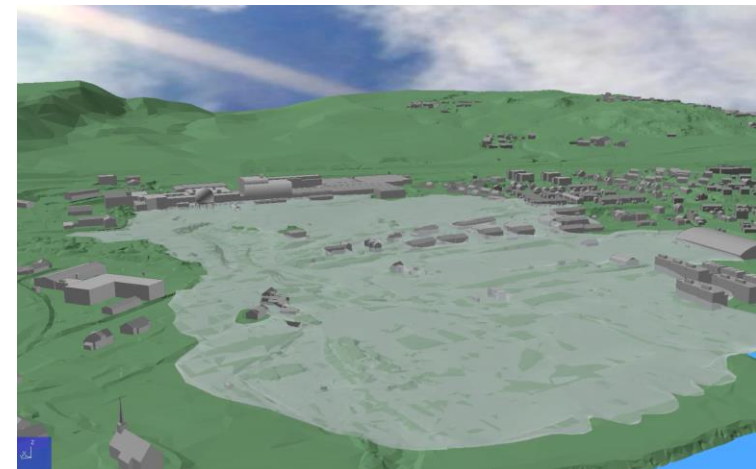
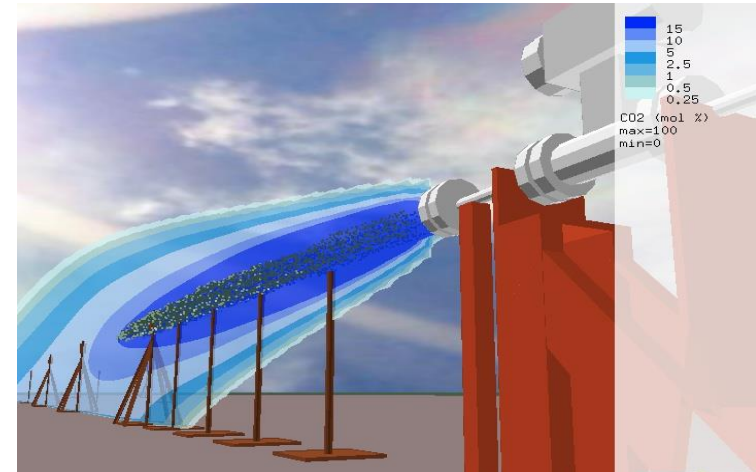
Management system  
certification, supply chain and  
product assurance



# KFX-CO<sub>2</sub> Joint Industry R&D Project (2019-2024)

## CO<sub>2</sub> simulation software to meet CCS safety challenges

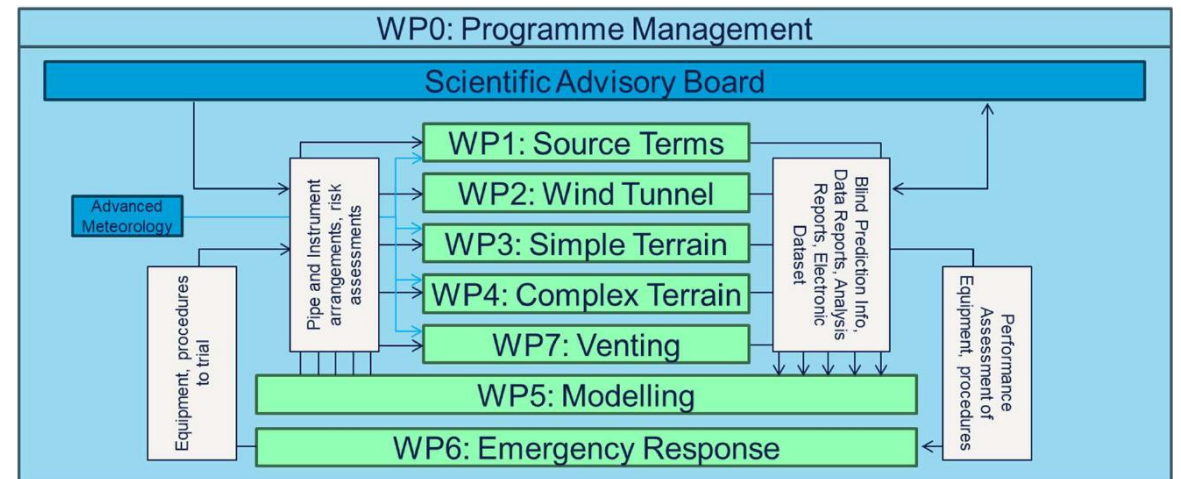
- Ongoing development of CO<sub>2</sub> dispersion simulation technology for 3D industrial analyses that takes into account important effects of CO<sub>2</sub> thermodynamics, geometries, topography and atmospheric conditions
- Based on DNV's Computational Fluid Dynamics (CFD) software KFX
- Has already proven to add significant value to safety design for planned full-scale CCS plants
- Improved modeling capabilities to be released in 2025
- Partners:



# SkyLark (2024-2027)

## CO<sub>2</sub> Transportation Safety Research

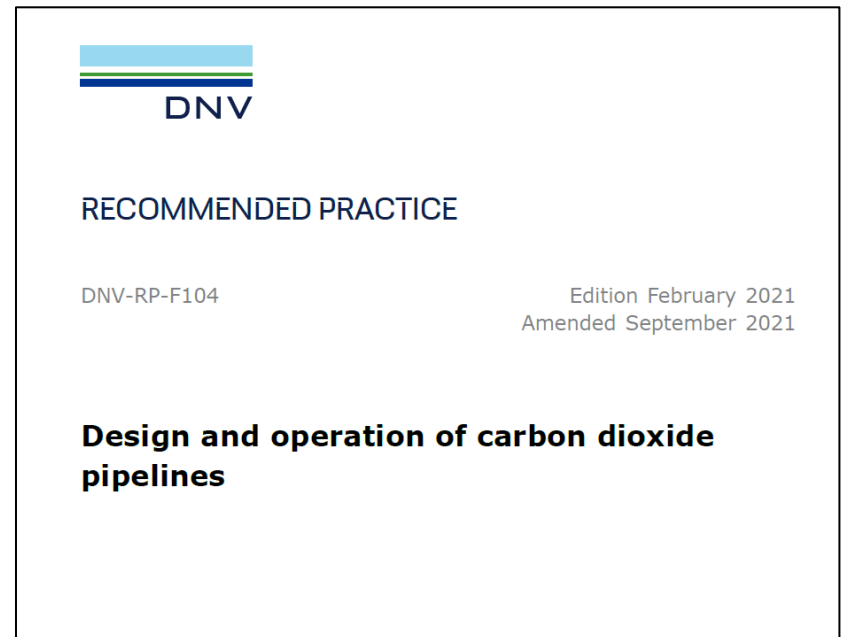
- Challenges / Knowledge gaps identified for purpose of research:
  - 1: Source characteristics from CO<sub>2</sub> pipeline craters
  - 2: Terrain effects on dense clouds
  - 3: Emergency Response
  - 4: Operational Issues (venting)
  
- June 2024 – Technical and Commercial Proposal now available on request. Sponsors still actively being sought throughout summer '24.
  
- Work packages will start in Sept / Oct '24



# CO2SafePipe (2023-2025)

Close knowledge gaps in the transportation of CO<sub>2</sub> in pipelines

- Headed by DNV Norway to update CO<sub>2</sub> Recommended Practice DNV-RP-F104
  - Inclusion of gas phase pipelines into scope
  - Typical stream compositions and effect of impurities
  - Running ductile fracture
    - Numerical modeling
    - Full-scale or medium-scale testing (full-scale test complete)
    - Fracture arrestor type and spacing
  - Low temperature effects
  - Environmental effects on dispersion
  - Leak detection technology
  - Requalification / repurposing



# Safeguarding life, property, and the environment

[cynthia.spitzenberger@dnv.com](mailto:cynthia.spitzenberger@dnv.com)

[www.dnv.com](http://www.dnv.com)