TECHNOLOGY CENTRE MONGSTAD

– catching our future

Accelerating CO_2 Capture Innovation: Collaboration between Technology Centre Mongstad and CCSI^2

Presented by:
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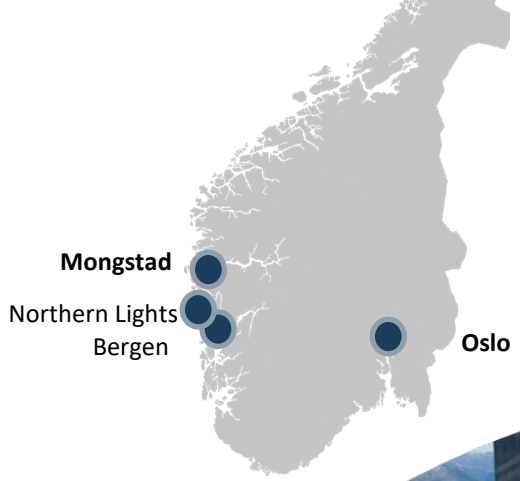

WE enable carbon capture deployment

Who
The world's largest post-combustion CO_2 capture test centre

Why
To create and accelerate a competitive carbon capture market

How
By offering facilities and capabilities for taking the last step before commercialization

What

- Technology testing to support technology developers
- Sharing knowledge with the public domain
- Advisory services to support technology buyers

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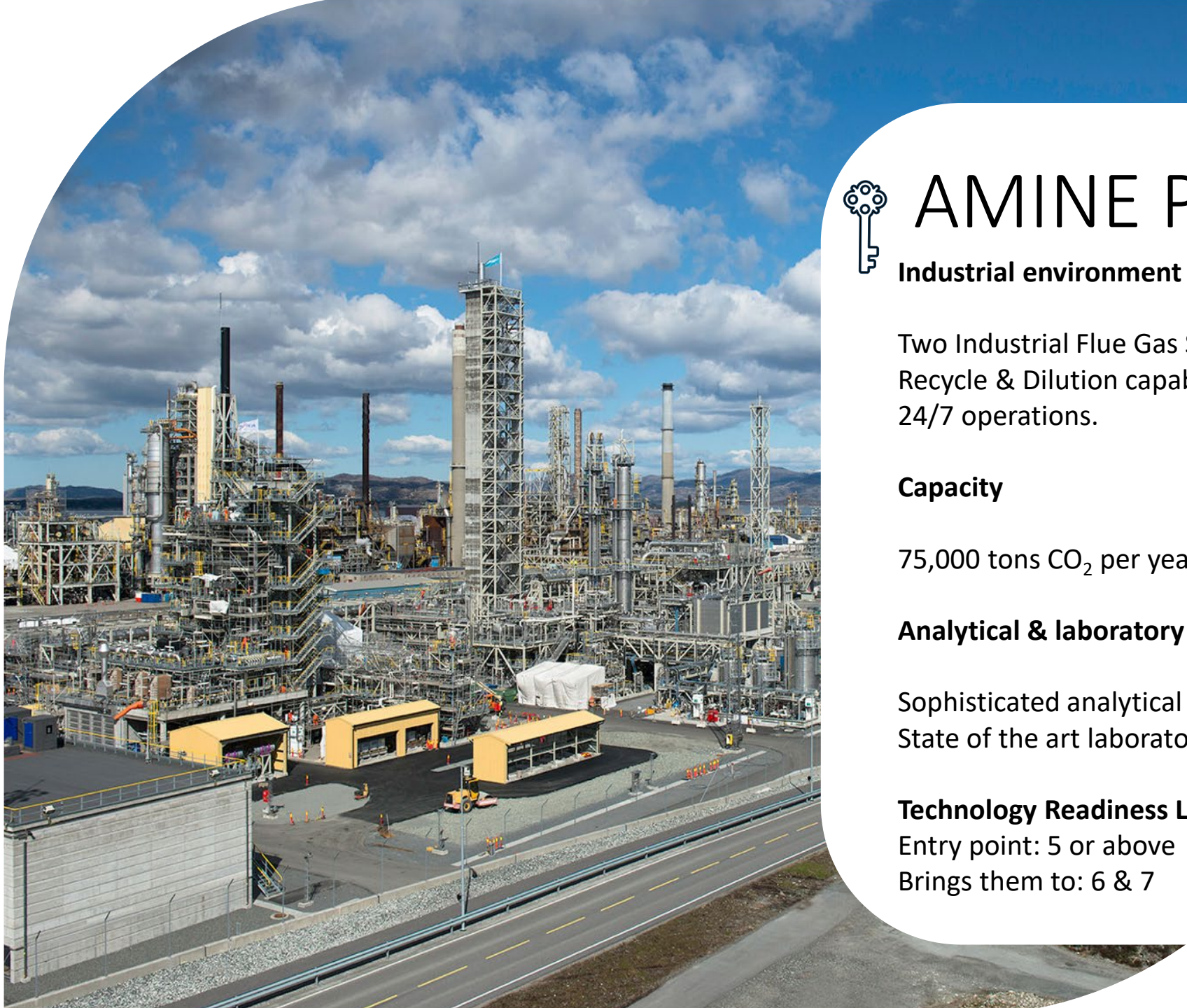

AMINE PLANT at TCM

Industrial environment

Two Industrial Flue Gas Sources (Refinery, Power Plant).
Recycle & Dilution capabilities (1–20 % CO_2).
24/7 operations.

Capacity

75,000 tons CO_2 per year.

Analytical & laboratory capabilities

Sophisticated analytical methods.
State of the art laboratory.

Technology Readiness Level
Entry point: 5 or above
Brings them to: 6 & 7

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Site for EMERGING TECHNOLOGIES at TCM

Industrial environment

Two Industrial Flue Gas Sources (Refinery, Power Plant).
Recycle & Dilution capabilities (1–20 % CO_2).
24/7 operations.

Capacity

18,000 tons CO_2 per year.
Possibility to test multiple technologies in parallel.

Analytical & laboratory capabilities

Sophisticated analytical methods Stat
e of the art laboratory

Technology Readiness Level

Entry point: 3 or above
Modular technologies → de-risking the final size module before full-scale deployment.

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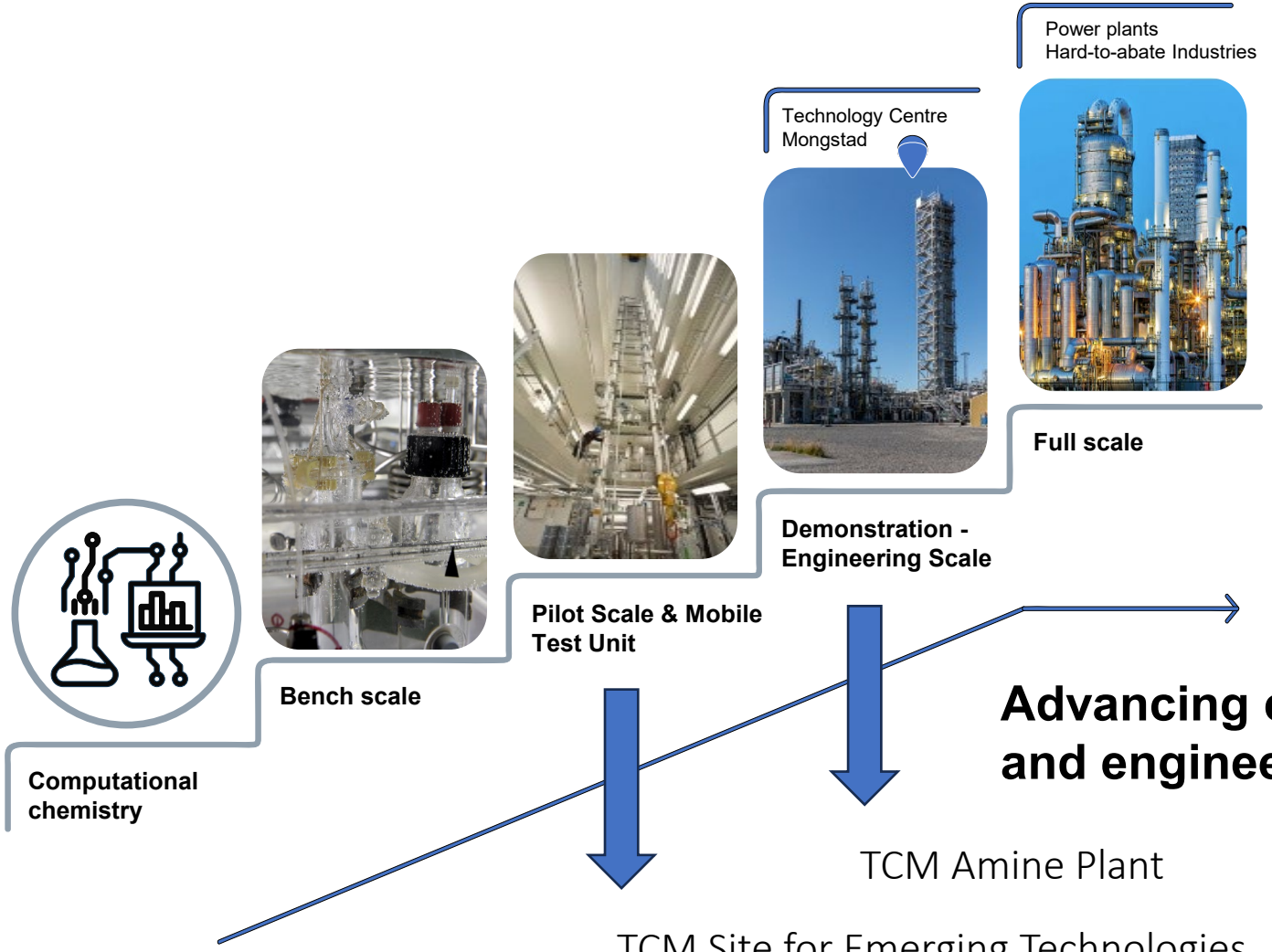
IS YOUR TECHNOLOGY at the right TECHNOLOGY READINESS LEVEL?



Conducted TEST CAMPAIGNS

> 32.000 hrs
Proprietary Campaigns

Solvent Technologies

Start 2012

AKER CARBON CAPTURE · ALSTOM · Cansolv 1st campaign · Carbon Clean Solutions · Cansolv 2nd campaign · ION CLEAN ENERGY · FLUOR · MITSUBISHI HEAVY INDUSTRIES · RTI INTERNATIONAL · Cansolv 3rd campaign

2023 >

Start 2020

Emerging Technologies

MTR · TDA · SAIPEM · PROSPIN · MOF4AIR · InnoSepra · ACCSESS

Sponsored by TCM Owners, EU and CLIMIT

> 20.000 hrs
Non-proprietary Campaigns

> 60
Scientific publications

2013

2023 >

MEA-1 | MEA-2 | MEA-3 | MEA-4 | MEA-5 | Align-CCUS | CESAR-1

Synergies Between TCM and CCSI2

- **Shared Goals**:
  - Both focus on scaling up CO2 capture technologies efficiently and effectively.
  - Both aim to reduce costs and risks associated with technology commercialization.

- **How TCM's Industrial Scale Complements CCSI2**:

  - **Real-World Data from TCM**: TCM provides empirical data from large-scale testing, which can enhance CCSI2's simulations.

  - **Pilot Testing Validation**: TCM's ability to test technologies at an industrial scale can validate predictions made by CCSI2 tools.

  - **Risk Mitigation**: By combining TCM's physical testing with CCSI2's digital tools, developers can more confidently move from pilot to commercial deployment.

Benefits of Collaboration

- **Accelerated Commercialization:** Faster pathway from R&D to market-ready solutions.
- **Cost Savings:** Reduced financial risk through optimized processes and fewer trial-and-error approaches.
- **Data-Driven Decisions:** Enhanced decision-making through the combination of high-quality industrial data and advanced simulation.
- **Improved Performance**: Iterative process optimization leads to higher capture rates and more energy-efficient technologies.
- **Stronger Industry Position:** A more robust platform for developing competitive, scalable CO2 capture technologies.

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Pathway for Collaboration

- **Data Integration and Exchange**: Leverage TCM's industrial-scale data to enhance the accuracy and predictive power of CCSI2 simulations.

- **Joint Testing and Simulation Campaigns**: Use CCSI2 tools to simulate optimal conditions for CO2 capture technologies, and then validate these conditions through TCM's large-scale testing.

- **Technology De-Risking and Scale-Up**: Minimize risks in scaling up CO2 capture technologies through iterative testing at TCM and predictive modeling with CCSI2.

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