

Net-zero Flexible Power: High Capture Rate Project Review Meeting

Delta Hotel Philadelphia Airport - June 6-7, 2024

WIFI CONFERENCE Password is: PHLDEG4

Thursday, June 6th

8:00 – 8:30 AM Check-in and breakfast buffet

Session Moderator: Ron Munson ((National Energy Technology Laboratory (NETL))

8:30 – 9:00 AM Meeting Objectives and Overview High CR activities at FECM
Dan Hancu and Sara Hamilton, DOE-Fossil Energy and Carbon Management (FECM)

9:00 – 9:30 AM State of the Knowledge: Net-Zero Flexible Power (Title: The prospects of flexible natural gas fired CCGT with CCS within a green taxonomy)
Mai Bui (Imperial College London)

9:30- 10:40 AM Panel 1: Technology Developers

Moderator: Ron Munson (National Energy Technology Laboratory (NETL))

Laurent Thomas (Shell), Erik Meuleman (ION Clean Energy), Marty Lail (Research Triangle Institute (RTI)), David Phillips (Aker Carbon Capture)

10:40 –10:55 AM Refreshment Break

10:55 – 12:15 AM Current FECM Projects on High Capture Rates Part 1

Moderator: Mariah Young (National Energy Technology Laboratory (NETL))

1. Plastic Additive, Sorbent-Coated, Thermally Integrated Contactor for CO₂ Capture (FE0032132). Albert Stella (GE Vernova)

2. Highly Efficient Regeneration Module for Carbon Capture Systems in Natural Gas Combined Cycle (FE0032135). Elisabeth Perea (SRI International)
3. Bench Scale Test of a Polyethyleneimine Monolith Carbon Capture Process for Natural Gas Combined Cycle Point Sources (FE0032138). Christopher Bertole (Cormetech)
4. Dual-Loop Solution-Based Carbon Capture System for Net Negative Carbon Dioxide Emissions with Lower Costs (FE0032134) and Enhancement of Carbon Capture Reactor Performance (FE0032217). Heather Nikolic (University of Kentucky Research Foundation)

12:15 – 1:15 PM Buffet Luncheon

Session Moderator: Sara Hamilton (DOE-FECM)

1:15 – 2:30 PM Panel 2: Technology Developers

Moderator: Sara Hamilton (DOE-FECM)

Tim Merkel (MTR), Yang Han (Ohio State University), Gokhan Alptekin (TDA), Miles Abarr (Carbon America), Mark Claessen (Svante)

2:30 – 2:45 PM Talk 1: Technical and Economic Feasibility of Net-Zero Flexible Power (Title TBD)

Tianyu Gao (Electric Power Research Institute (EPRI))

2:45 – 3:00 PM Talk 2: Optimal design of high capture processes with examination of validation requirements and impacts of uncertainty

Ben Omell (National Energy Technology Laboratory (NETL))

3:00 – 3:20 PM Refreshment Break

Session Moderator: Tim Fout (DOE-FECM)

3:20 – 4:20 PM Panel 3: OEM and Utilities

Moderator: Tim Fout (DOE-FECM)

Carl Herman (Calpine), John Northington (Southern Company), Matt Davidsaver (GE Vernova), Samuel Kelty (PPL Corporation)

4:20 – 4:50 PM Overview of the FLExible Carbon Capture and Storage (FLECCS) program (ARPA-E)
Jack Lewnard (ARPA-E)

4:50 – 5:00 PM Concluding Remarks and Adjourn Day 1, June 6, 2024

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June 7, 2024

8:00 – 8:30 AM Check-in and breakfast buffet

8:30 – 10:10 AM Current FECM Projects on High Capture Rates Part 2

Moderator: Krista Hill (National Energy Technology Laboratory (NETL))

1. A New Thermal Swing Adsorption Process for Post-Combustion Carbon Capture from Natural Gas Plants (FE0032151). Gokhan Alptekin (TDA)
2. Nano-Confined Ionic Liquid Membrane to 97 Percent Carbon Dioxide Capture from Natural Gas Combined Cycle Flue Gas (FE0032215). Shiguang Li (Gas Technology Institute)
3. High Performance Solvent for Natural Gas Combined Cycle (NGCC) Flue Gas CO₂ Capture (FE0032216). Aravind Rabindran (Susteon)
4. Generation Non-Aqueous Solvents (GEN2NAS) for CO₂ Capture from Natural Gas Combined Cycle Plants (FE0032218). Jak Tanthana (Research Triangle Institute (RTI))
5. Techno-economic Assessment of EEMPA Solvent for CO₂ Separation from Natural Gas Combined Cycle Power Plant (FWP 70814). Yuan Jiang (Pacific Northwest National Laboratory (PNNL))

10:10 – 10:30 AM Refreshment Break and organize into breakout rooms

10:30 AM – 12:00 PM Breakout Rooms Discussion

12:00 – 12:10 PM Concluding Remarks and Adjourn Day 2, June 7, 2024