PECMC
INTERNATIONAL
Pittsburgh Energy and Carbon Management Conference

Forty-Third Annual International Pittsburgh Energy and Carbon Management Conference (Virtual)

October 28-30, 2026

Call-for-Papers

Abstracts Deadline: Sep 30, 2026

"Clean Energy Transformation and Carbon Management for a Sustainable Future"

Participating Organizations

Ajou University, SOUTH KOREA
Commonwealth Scientific and Industrial Research Organization (CSIRO), AUSTRALIA
CONSOL Energy Inc., USA
Freiberg University of Mining & Technology, GERMANY
Gas Technology Institute (GTI), USA
Hamilton Maurer International, USA
HTI, USA
Institute for Chemical Processing of Coal, POLAND
Istanbul Technical University, TURKEY
KeyLogic Systems, Inc., USA
Longbridge Energy Consulting, USA
MIE University, JAPAN
National Institute of Clean and Low-Carbon Energy (NICE), CHINA
ONB Engineering Research and Technical Services LLC, USA
Osaka University, JAPAN
Penn State University, USA
Sotacarbo S.p.A., ITALY
Southern University of Science and Technology, CHINA
The Ohio State University, USA
U.S. DOE/NETL, USA
U.S. Geological Survey, USA
University of Kentucky, USA
University of Pittsburgh, USA
University of Wyoming, USA
West Virginia University, USA

Hosted by: University of Pittsburgh

Call for Papers

43rd Annual International Pittsburgh Energy and Carbon Management Conference (PECMC)

The Conference will be held **virtually October 28-30, 2026.**

The Conference was founded in the early 1970s to address global energy shortages. This year, the conference focuses on the benefits of clean energy and carbon management technologies in mitigating the effects of global climate change. Our faithful conference attendees, who have been successful in developing and using a fossil fuel-based economy over the years, are now focusing on mitigating the global temperature rise driven by mankind's reliance on fossil fuels and the resulting greenhouse gas emissions. For example, the Conference is addressing both the energy and non-energy uses of fossil fuels, as well as carbon management, to meet the ambitious Net Zero emissions scenario by 2050. In this pathway, in addition to the main pillars of decarbonization, including energy efficiency & conservation, renewables, nuclear, low-emissions fuels, and carbon capture, utilization, and storage (CCUS) technologies, there are cross-cutting enablers, such as innovation, international collaboration, and digitalization, which could accelerate progress by strengthening policy or providing more effective technological solutions. (For more background information on the world's energy system, including energy supply & transportation, uses of energy, and managing demand & emissions, visit the International Energy Agency website https://www.iea.org/energy-system.)

Conference Theme: "Clean Energy Transformation and Carbon Management for a Sustainable Future," surrounding the continued utilization of primary energy resources, coupled with carbon management, to better enable and transition to the global future clean energy market.

Abstracts Submission

Abstracts of potential papers may be submitted in all program topics. The abstract must include sufficient and adequate information for evaluation by the Technical Program Committee of the conference.

An abstract template is available here: https://www.engineering.pitt.edu/subsites/conferences/pcc/pittsburgh-coal-conference/conference/2023-conference/abstract-template/

Please submit an abstract by email to ipcc@pitt.edu.
The final deadline is Sep 30, 2026.

Conference Proceedings

The proceedings of the PECMC-2026 will be published online after the conference.

For a paper to be included in the conference proceedings, a paid registration of the presenter must be received and a complete manuscript in English, must be sent by email to the conference office prior to the conference date.

Proceedings of the previous International Pittsburgh Coal conferences are available and can be purchased online: https://www.engineering.pitt.edu/subsites/conferences/pcc/pittsburgh-coal-conference/Proceedings/orderform/

Note to Authors

The PECMC does not provide any financial support to contributing authors. Benefits from participation include the privilege of presenting papers at the conference and publication of the papers in the Conference Proceedings for worldwide distribution.

Oral Presentations & Posters

All presentations will take place online via Zoom.

Oral Presentations: Each author is allowed 20 minutes including a 5-minute Q&A period.

Presenter Instructions are available here: https://www.engineering.pitt.edu/subsites/conferences/pcc/pittsburgh-coal-conference/conference/presenter-instructions/

Conference Website: http://www.pccpitt.org

Please contact the Conference Coordinator with any questions.

Conference Coordinator, Ms. Rebecca Bauroth
Email: ipcc@pitt.edu
Tel: +1 (412) 624-7440
Please call us and you may leave a voice message. We will return your call ASAP.

Program Topics

1. Gasification Technologies
- Industrial Applications, Economics and Environmental Issues
- Underground Coal Gasification (UCG)
- Syngas to Power (Gas Turbines, Fuel Cells)
- Gasification Science and Modeling
- Novel Gasification Technologies and Concepts
- Co-Gasification of Coal and other Carbon-Based Fuels
- Systems Analysis
- Low Rank Coal Utilization
- Polygeneration

2. Clean Coal Demonstration and Commercial Projects
- Existing and planned clean coal major demonstrations (process and technology demonstrations, (i.e., CCS, IGCC, SCPC, USC, SNG, CTL, Oxy-combustion, etc.)
- Existing and planned clean coal commercial projects (fully integrated systems) and trends
- Industrial-scale and utility-scale carbon capture and carbon storage projects (i.e., >250,000 tons/year of CO_2), lessons learned from technology, demonstrations and first commercial deployments
- Energy storage demonstrations applicable to medium- and long-term storage of energy from coal and fossil energy systems Intermediate-scale demonstrations, (i.e., 25-50 MWe)
- Commercially available technology reviews/updates (vendor reports on advanced technology commercial offerings)
- Financing, business and risk management strategies for major demonstration and commercial projects, including first-of-a-kind projects with or without carbon capture and storage
- Regulatory impacts on major demonstration and commercial projects
- Insurance strategies for CO_2 capture and geologic storage

3. Combustion Technologies
- Industrial applications and environmental Issues
- Flue gas clean up and ash chemistry
- Modeling and economic evaluation
- Combustion technology advancements (Pulverized Coal, Fluidized Beds, Co-Firing, etc.)
- Novel Combustion and Cycle Technologies (Oxyfuel, Chemical looping, CO_2 Cycles, etc.)
- Basic studies, materials, and instrumentation

4. Clean Coal and Gas to Fuels
- Coal-To-Liquids fuels, CTL (Direct Liquefaction, Fischer-Tropsch, MTG, DME, etc.)
- Gas-To-Liquid, GTL
- Synthesis gas cleanup
- Substitute Natural Gas (SNG)
- Hydrogen production
- Syngas to chemicals/materials

5. Carbon Management
- Pre-combustion capture
- Post-combustion capture
- Direct Air Capture (DAC)
- CO_2 sequestration (Monitoring, Mitigation and Verification; Storage: Depleted Oil/Gas Reservoirs, Aquifers, Basalt, Coal Bed Methane, etc.)
- Transportation infrastructure issues
- Legal and regulatory issues
- Carbon dioxide to chemicals/fuels

6. Value-Added Products from Coal
- Nano-carbons
- Fibers
- Composites
- 3D Printing
- Additive Manufacturing
- Electrodes
- Capacitors
- Construction Materials
- Concretes
- Thermal Insulators
- Activated Carbons
- Tars, Cokes and Pitches
- Chemicals
- Covetics and other carbon alloys

7. Energy Storage
- Chemical (Hydrogen, Ammonia, Methanol)
- Thermal (Thermochemical, Sensible, Latent)
- Mechanical (Compressed Air, Pumped Hydro)
- Electrochemical (Batteries: Flow, Li-ion, Lead Acid)
- Other (Geothermal)

8. Clean Hydrogen
- Production
- Transportation
- Storage
- Utilization

9. Coal Bed Methane and Shale Gas
- Geology
- Exploration
- Resources and reserves
- Drilling and production
- Completion methods
- Gas quality and processing
- Environmental impacts
- Abating methane emissions from gas and coal production
- Economics and future outlook

Program Topics (continued)

10. Power Plants
- Thermodynamic and economic analysis
- Boiler technology and design
- Steam turbine technology (reheat, regeneration, steam seals, blade aerodynamics)
- Gas turbines technology (syngas or hydrogen-rich combustion, compressor aerodynamics, turbine blade heat transfer, materials)
- Heat Recovery Steam Generator (HRSG)
- Condenser design and operation
- Cooling tower design and improvements
- Water treatments
- Post combustion gas cleaning
- IGCC integration and components (ASU, gasifiers, syngas cooling, gas clean up, water- gas-shift, and desulfurization)
- Oxy-fuel combustion plants
- Organic Rankine Cycle (ORC)
- Combined Heating and Power (CHP)
- Energy storage (CAES, ice)
- Power plants operation and maintenance experiences
- Any other or innovative new cycles

11. Critical Minerals and Rare Earth Elements (REE) in Fossil Fuel Derived Solids and Liquids
- Critical minerals and rare earth elements in coal and petroleum fuels
- Critical mineral and rare earth element chemistry in power systems
- Mining waste
- Fly ash and slag
- Separation methods
- Rare earth geochemistry
- Measurement and characterization: challenges and solutions
- Modeling
- Mining and recovery methods in industry
- Status of supply and trade
- Emerging issues

12. Coal Ash Management
- Ash pond reclamation
- Extension of landfills over ash ponds
- Long-term recovery of materials from ash ponds
- Long-term recovery of materials from ash ponds
- Secondary uses of closed ash ponds
- Coal Combustion Residuals (CCRs) landfill management
- Beneficial uses of CCRs
- Critical mineral and rare earth element extraction from CCRs
- Role of CCRs for CO_2 storage

13. Coal Science
- Chemistry
- Geoscience/coal resources
- Trace elements/emission
- Coal processing
- Coal preparation
- Coal utilization
- Coal utilization by-products (Ash, Fertilizers, etc.)

14. Coal Mining, Preparation, and Handling
- Coal seam and coal mine methane/gas management in coal mines
- Geological issues related to coal mining/properties of coal-measure, rocks/ground behavior
- Coal mining and reclamation
- Mine safety

15. Sustainability and Environment
- Energy production and water use – conservation and recycle
- Life Cycle Analysis (LCA) or Energy Production Systems (EPS)
- Energy production and the environment
- Energy sustainability – efficiency and conversation to reduce GHG
- GHG, inventory protocol, legal and regulatory considerations, credits

16. Artificial Intelligence and Digital Twin Applications in Carbon Management and Energy Systems
- AI-driven process optimization for carbon capture, storage, and utilization (CCUS)
- Digital twin modeling of power plants and industrial carbon sources
- Predictive maintenance and anomaly detection in energy infrastructure
- Machine learning for emissions forecasting and control
- Integration of AI with carbon footprint monitoring and reporting
- Intelligent control systems for decarbonized energy systems
- Data-driven decision support for low-carbon system planning
- Real-time monitoring and diagnostics for energy and carbon flows