



# CLEAN COAL TODAY

A NEWSLETTER ABOUT INNOVATIVE TECHNOLOGIES FOR COAL UTILIZATION

## INDEX OF ARTICLES

The *Clean Coal Today* newsletter is a quarterly publication prepared and distributed by the U.S. Department of Energy (DOE) Office of Coal & Power Systems (OC&PS). The newsletter objective is to inform OC&PS Program stakeholders of Clean Coal Power Initiative (CCPI), Power Plant Improvement Initiative (PPII), and Clean Coal Technology (CCT) Demonstration Program project status and activities, as well as other major OC&PS research and development (R&D), environmental, and international programs and activities. The newsletter features the latest R&D advances. It also reports on commercial spinoffs, and explores timely policy and environmental topics. Regular columns include News Bytes, R&D Milestones achieved by in-house and contractor researchers, and state clean coal undertakings. Periodic guest articles from stakeholders also are featured.

The newsletter reaches the broad customer/stakeholder audience including users and vendors of clean coal technologies, the coal R&D community, regulators and public policy makers, environmental organizations, the financial community, exporters, public interest groups, and the public in general. *Clean Coal Today* is distributed to some 4,000 domestic and international readers, and can be found on the Clean Coal Technology Compendium (<http://www.lanl.gov/projects/cctc>).

*Clean Coal Today* has provided readers with information on key actions that have brought coal into the limelight during the past year. The Administration continues to place coal in a prominent position in the U.S. energy mix, and has brought new focus this year on technical issues surrounding hydrogen from coal, and the capture and sequestration of CO<sub>2</sub>. Progress has been made on the Power Plant Improvement Initiative launched in October 2000, and the Clean Coal Power Initiative, begun in the spring of 2001, as both continue to expand upon the government's efforts in clean coal technology development and demonstration.

Beginning with Issue 1, published in 1990, this *Clean Coal Today Index of Articles* for quarterly issues 1-55 will assist readers to identify articles of interest in prior editions of *Clean Coal Today*. Pages 2-9 present articles on CCT projects, organized by category (Environmental Control Devices, Advanced Electric Power Generation, Coal Pro-

cessing, and Industrial Applications). Pages 10-20 present all other articles by subject area.

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• Improving the "Enabling Environment" for CCTs (Fourth Annual CCT Conference)	Winter 1995: 8
• Expanding the International Market (Fourth Annual CCT Conference)	Winter 1995: 12
• O'Leary Heralds Bright Future for Coal	Fall 1996: 12
• Commercialization Updates/Briefs	Fall 1996: 3; Winter 1996: 3; Spring 1997: 6; Summer/Fall 1997: 3; Winter 1997: 3
• Opportunities for IGCC	Winter 1996: 9
• DOE/Industry Seminars Identify CCT Opportunities and Challenges	Winter 1997: 4
• Challenges and Opportunities for Clean Coal Technology (Sixth Annual CCT Conference)	Summer 1998: 1
• Carbon Offsets Create Business Opportunities for CCTs (Sixth Annual CCT Conference)	Summer 1998: 10
• CCT Program Successes	Summer 1999: 11
• Clean Coal Technology in the Next Millennium (Seventh Annual CCT Conference)	Fall 1999: 3
• Successful Demonstration of SNCR at AEP's 600-MWe Cardinal Plant	Summer 2000: 6
• Powerplant Award, Multiple Visits Precede JEA Dedication	Fall/Winter 2002: 1

## — Cofiring —

• Coal Biomass Cofiring Effort Gains Momentum	Summer 1998: 4
• Biomass/Coal Cofiring Gains Favor Within Biomass Industry	Winter 1998: 7
• Results Successful from Treated-Wood/Coal Cofiring Tests	Spring 2000: 8

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• Coal, Tires, and Sawdust Move Tri-Firing Concept Forward	Spring 2001: 12
• Biomass Cofiring Opportunities Awards	Spring 2001: 13

## — Environmental Programs —

• Clean Coal Projects Join Integrated Effort to Obtain Toxic Air Pollutant Data	Winter 1991: 7
• Update — Clean Coal Air Toxics Testing Programs	Winter 1993: 3
• Air Toxics: Hazardous Emissions From Coal Combustion	Spring 1997: 8
• CCT NO <sub>x</sub> Controls Realize Commercial Acceptance	Winter 1997: 5
• Monitoring Effort Initiated Under PM <sub>2.5</sub> Program	Summer 1998: 8
• Carbon Offsets Create Business Opportunities for CCTs	Summer 1998: 10
• Novel Concepts Awards	Summer 1998: 14
• Kyoto Update: COP 5	Winter 1999: 9
• FE's Mercury Program – Quality Measurements and Cost-Effective Controls	Summer 2000: 8
• Regulatory Update	Summer 2000: 10
• PM <sub>2.5</sub> Monitoring Effort Advances	Fall 2000: 6
• FE Hosts Annual NO <sub>x</sub> Specialty Conferences	Fall 2000: 13
• Carbon Products Consortium Reviews Accomplishments and Future Research (guest article)	Winter 2000: 4
• DOE Stays Ahead of Mercury Regulation Momentum	Spring 2001: 5
• Sulfur Removal From Gasification-Derived Syngas	Summer 2001: 4
• Environmental Benefits Topical Report Published	Summer 2001: 6
• Gasification Technologies Workshop for Environmental Regulators	Summer 2001: 8
• TVA Mined Land Becomes Carbon Sink	Fall 2001: 8
• Ongoing Research Updates PM <sub>2.5</sub> Source Fingerprints	Winter 2001: 6
• DOE Examines Environmental Issues in By-Product Use	Spring 2002: 12
• Coalbed Methane — Enhancing Production and Sequestering CO <sub>2</sub>	Summer 2002: 7
• Clear Skies Initiative	Summer 2002: 8
• DOE Addresses Emerging Electric Utility Water Issues	Spring 2003: 8
• DOE Explores Externalities Cost	Spring 2003: 12
• Low-NO <sub>x</sub> Testing Produces Results	Summer 2003: 3

## — Fuel Cells —

• Fuel Cells — a Key to Vision 21	Summer 1999: 7
• SECA Seeks to Accelerate Fuel Cell Commercialization	Spring 2001: 10

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• Kentucky Pioneer IGCC/Fuel Cell Project Underway	Spring 2003: 5
• SECA Core Technology Program Review Meeting	Fall/Winter 2003: 3

## — Hydrogen —

• DOE Offices Coordinating Hydrogen Activities	Summer 2001: 7
• DOE Announces New Hydrogen-Sequestration Efforts	Spring 2003: 2
• New Zealand's National Hydrogen Workshop	Spring 2003: 7
• DOE Highlights Growing Hydrogen Program	Fall/Winter 2003: 6
• Coal-Based Hydrogen Coproduction with CO <sub>2</sub> Capture	Fall/Winter 2003: 7

## — International Activities —

• DOE Report to Congress: CCT Expressions of Interest in Foreign Countries	Summer 1995: 7
• Polish Energy Experts Discuss Privatization (Fourth Annual CCT Conference)	Winter 1995: 7
• Clean Coal Outlook in Brazil	Spring 1996: 4
• FE Plays Key Role in WPF International Activities	Summer 1996: 7
• Clean Coal Goes to India	Summer 1996: 8
• U.S./Australia CCT Interests in Sync	Fall 1996: 4
• Fossil Energy Activity in China	Fall 1996: 5
• New China Laws to Reduce SO <sub>2</sub>	Fall 1996: 5
• International CCT Finance Seminar	Fall 1996: 7
• FE to Co-Chair New U.S.-India Coal Advisory Group	Winter 1996: 4
• Clean Coal Technology Workshop in India	Winter 1996: 5
• New Chinese CCT Project	Spring 1997: 4
• World Bank's Clean Coal Initiative	Spring 1997: 4
• U.S. AID Support in India	Spring 1997: 5
• U.S./Israel Technical Information Exchange	Spring 1997: 5
• DOE Signs Fossil Energy Annex with Italy	Summer/Fall 1997: 10
• DOE Supports Brazil's Quest for Coal	Summer/Fall 1997: 10
• DOE-Ukraine Clean Coal Task Force	Summer/Fall 1997: 10
• India Coal Washing Plant Receives Accolades	Summer/Fall 1997: 11
• DOE Sponsors CCT and Coal Utilization Workshop	Winter 1997: 9
• FE Advocates CCTs Through APEC	Winter 1997: 10
• Korea Energy/Environment Workshop a Success	Winter 1997: 10
• U.S.-China Energy and Environmental Technology Center (The)	Spring 1998: 6
• International News Bytes	Spring 1998: 7

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• DOE Supporting South Africa Energy Initiatives	Summer 1998: 11
• TDA Joins DOE in Supporting Brazil's Quest For Clean Energy	Summer 1998: 12
• Ukraine Conference Highlights Financial Recovery, Obstacles to Power Sector Development	Summer 1998: 12
• United Nations CCT Study Tour	Summer 1998: 13
• CCTs to be Evaluated for Philippines Palawan Province	Fall 1998: 9
• South Africa Project Recognized for Contributing to GHG Reduction	Fall 1998: 9
• Pittsburgh Coal Conference — Panel Highlights Asia Energy Picture	Winter 1998: 5
• APEC's Focus on Coal	Winter 1998: 8
• FE Supports Taiwan, China's CCT Projects	Winter 1998: 9
• Mexico FBC Options	Spring 1999: 8
• Multi-Fuel Reburning Holds Promise for Ukraine	Spring 1999: 8
• FE Outreach in Slovakia	Spring 1999: 9
• Fossil Energy Committed to International Energy Agency Goals	Spring 1999: 10
• DOE Plays Major Role in Reducing Emissions in Krakow, Poland	Summer 1999: 8
• First Annual Meeting of U.S.-China Energy and Environmental Technology Center	Summer 1999: 9
• U.S./Japan Workshop Highlights R&D Cooperation	Summer 1999: 9
• U.S./Turkey Conference Highlights Fossil Energy	Fall 1999: 6
• FE Visits Russia on Information Exchange Mission	Fall 1999: 7
• Recent FE Initiatives in India	Fall 1999: 7
• PCAST Supports International Energy Cooperation Programs	Winter 1999: 10
• Support for International Energy Cooperation Programs	Winter 1999: 10
• FE Regulates Electricity Trade with Mexico and Canada	Winter 1999: 11
• Joint Statement Signed for Technical Cooperation to Strengthen Russian Coal Sector	Winter 1999: 11
• CoalTech '99 Conference in Jakarta, Indonesia	Winter 1999: 12
• Triboelectrostatic Separation Applied to Slovakian Brown Coal	Winter 1999: 12
• DOE Participates in International Conference in India	Spring 2000: 10
• FE Shares Gasification Technology Options with Japan	Spring 2000: 10
• FE Assists South African Utility in Evaluating CCTs	Summer 2000: 11
• U.S. and China Sign Technology Protocol	Summer 2000: 11
• Presidential Mission to India Unveils Energy Efficiency Initiatives	Summer 2000: 12
• New IEA Clean Coal Centre Study Areas	Summer 2000: 13
• FE Hosts Foreign Service Officer Training Course	Fall 2000: 10
• India Greenhouse Gas Project to Include Regional Centres	Fall 2000: 10

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• APEC Coal Flow Seminar: A Tool for Regional Stability	Fall 2000: 11
• IGCC Protocol with India Signed	Winter 2000: 10
• International CO <sub>2</sub> Ocean Sequestration Field Experiment: 2000 Oceanographic Research Cruise	Winter 2000: 10
• Vietnam Emerging as a Global Coal Partner	Winter 2000: 11
• Information Exchange Through ICCR	Winter 2000: 12
• Two Major Conferences in China Under DOE-MOST Protocol	Spring 2001: 8
• FE-NETL Provides Training for Indian Power Plant Managers	Spring 2001: 9
• DOE Fossil Energy International World Wide Web Site	Spring 2001: 9
• APEC Exports Group on Clean Fossil Energy	Summer 2001: 11
• New Coal Ash Newsletter Launched in India	Summer 2001: 12
• Interagency Group Drafting Plan for Clean Energy Technology Exports	Summer 2001: 13
• NETL to Support TCAPP Activities in China	Summer 2001: 13
• China Meetings Advance Fossil Bilateral R&D Efforts	Fall 2001: 1
• U.S. and Canadian Cooperation on Carbon Sequestration Research	Fall 2001: 12
• NETL Supports Cooling Tower Efficiencies Training in India	Fall 2001: 12
• Albany Research Center Hosts Indonesian Engineers	Fall 2001: 13
• New APEC Report on CO <sub>2</sub> Reduction Options	Winter 2001: 8
• ICCR Meeting Discusses Member Energy Plans	Winter 2001: 8
• Engineers from India Trained in Utility Overhaul and Maintenance	Spring 2002: 8
• EETC Efforts for “Green” 2008 Beijing Olympics	Spring 2002: 9
• FE and Partners Explore Opportunities for CCTs in Thailand	Summer 2002: 11
• Meeting of Coal Advisory Group in Kolkata, India	Summer 2002: 12
• IEA Group Drafts Fossil Fuels Zero Emissions Strategy	Summer 2002: 12
• China EETC Workshop and Plant Tours	Fall/Winter 2002: 8
• Climate Technology Award Goes to NETL Partner	Fall/Winter 2002: 9
• IGCC Briefings Completed Under U.S.–China Protocol	Fall/Winter 2002: 10
• IEA Committee Discusses Progress under Multiphase Flow Agreement	Fall/Winter 2002: 10
• FE Assistant Secretary Mike Smith Visits China Spring	Spring 2003: 1
• New Zealand’s National Hydrogen Workshop	Spring 2003: 7
• NETL and Chinese Institute Cooperate on CO <sub>2</sub> Scrubbing Projects	Summer 2003: 13
• U.S.-UK Collaboration in Clean Coal Technology	Summer 2003: 13
• DOE and U.S.-China Conferences Focus on Coal	Fall/Winter 2003: 1

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- India and United States Continue Collaboration Fall/Winter 2003: 9
- FGD Training in China Fall/Winter 2003: 9

## — Internet/Information Services —

- DOE TechLine Automated Fax Service Winter 1991: 6
- FE International On-Line Fall 1996: 6; Winter 1996: 5;  
Spring 1997: 6; Summer 1998: 9
- DOE Launches New Clean Coal Technology Web Site (CCT Compendium) Spring 1998: 9; Fall 1999: 13
- Coal-Related Web Sites Spring 2000: 11
- DOE Fossil Energy International World Wide Web Site Spring 2001: 9

## — National Laboratory Activities —

- In Memoriam: Co-Workers from METC; Co-Workers from PETC; Close Associates from the Industrial Community Special  
Memorial Issue
- FETC Celebrates 50th Anniversary Summer 1998: 13
- Research & Development News Fall 1998: 10
- FETC's "In-House" R&D Winter 1998: 1
- New National Laboratory Established Spring 2000: 5
- Albany Research Center Supports FE Mission Summer 2000: 4
- NETL Fine Particulate Research Fall 2000: 8
- NETL Hosts Sensors and Controls Workshop Summer 2001: 9
- NETL Hosts Virtual Simulation Workshop Winter 2001: 10
- Climate Technology Award Goes to NETL Partner Fall/Winter 2002: 9
- Low-NO<sub>x</sub> Testing Produces Results Summer 2003: 3
- Promising Pilot Tests for CMB Technology Summer 2003: 10
- SECA Core Technology Program Review Meeting Fall/Winter 2003: 3
- NETL Completes a Successful PDU Test Fall/Winter 2003: 11
- Revolutionary Advanced Energy System Modeling Fall/Winter 2003: 13

## — Power Plant Improvement Initiative —

- Congress Enacts New Power Plant Improvement Initiative Winter 2000: 1
- Progress Under Two Clean Coal Funding Vehicles Winter 2001: 7
- First PPII Projects Successfully Negotiated Fall/Winter 2002: 4
- Two New PPII Projects Move Forward Summer 2003: 8

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### — Regulatory Issues —

- Power Generation Competition Threatens Clean Coal (Fourth Annual CCT Conference) **Winter 1995:** 9
- Domestic Regulatory Challenges (Fourth Annual CCT Conference) **Winter 1995:** 11
- Fossil Energy Role in Deregulation **Fall 1999:** 10
- Gasification Technologies Workshop for Environmental Regulations **Summer 2001:** 8
- Mercury/PM<sub>2.5</sub> Conference Addresses Regulatory and Technology Issues **Fall/Winter 2002:** 13

### — State Activities —

- North Dakota Clean Coal Activity **Spring 1997:** 12
- Ohio Clean Coal Activity **Spring 1997:** 12; **Fall 1999:** 12
- SSEB Legislative Digest **Spring 1997:** 13
- Mississippi Supporting Innovative Eco-Industrial Complex (Red Hills EcoPlex) **Summer/Fall 1997:** 7; **Fall 1999:** 12
- North Dakota Funding CCT Activities **Summer/Fall 1997:** 7
- Illinois Supporting LEBS Project **Fall 1999:** 12
- National Conference of State Legislatures/Utility Restructuring **Fall 1999:** 12
- Wisconsin Plan Emphasizes Fuel Diversity **Winter 2001:** 12
- Ohio, A Partner in Clean Coal **Fall/Winter 2002:** 6

### — Ultra-Clean Transportation Fuels Program —

- Clean Fuels Awards **Fall 1998:** 6
- Coal-Derived Fuels and the Ultra-Clean Transportation Fuels Initiative **Summer 1999:** 3
- Fossil Energy's Transportation Fuels and Chemicals R&D Program **Spring 2000:** 4
- Projects Advance Development of Ultra-Clean Transportation Fuels **Spring 2001:** 3

### — Vision 21 —

- FE Unveils Vision 21 Concept for Closing Carbon Cycle **Summer/Fall 1997:** 13
- FE Organizes Separations Workshop for Vision 21 System **Fall 1998:** 12
- Advanced Turbines — Building Blocks of Vision 21 **Spring 1999:** 2
- Virtual Energy Plants of the Future **Summer 2001:** 3
- Membrane Improvements Support Gas Separation **Winter 2001:** 4
- NETL Hosts Virtual Simulation Workshop **Winter 2001:** 10

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## — Other —

- In Memoriam: Co-Workers from METC; Co-Workers from PETC; Close Associates from the Industrial Community **Special Memorial Issue**
- NCC Touts Future Role of Coal **Summer/Fall 1997: 4**
- Solid Fuels and Feedstocks Program Builds on Past Successes **Winter 1997: 7**
- New Coal Stakeholder: Coal Utilization Research Council **Fall 1998: 8**
- By-Products Consortium Funds R&D Proposals **Winter 1999: 4**
- FE Carries Out Membrane Technology R&D **Winter 1999: 6**
- United States Energy Association's Focus on Coal **Winter 1999: 6**
- UCIG Meets to Evaluate Coal-Derived Fuels Research **Winter 1999: 9**
- Power Plant Hall of Fame **Summer 2000: 3**
- Power Systems Development Facility – Ensuring Clean Affordable Power for the 21<sup>st</sup> Century **Fall 2000: 1**
- Latest EIA Coal Facts **Spring 2001: 11**
- National Energy Policy Highlights **Summer 2001: 2**
- Long-Running University Coal Research Program Advances Science of Coal **Fall 2001: 9**
- NAS Review Validates FE Research Efforts **Fall 2001: 10**
- EPRI — Bringing Advanced Clean Coal Technology to Market **Spring 2002: 4**
- High-Temperature Materials Testing Record at CERF **Spring 2002: 10**
- Energy & Environmental Research Center **Spring 2003: 10**