

**S. Julio Friedmann**  
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Dr. Julio Friedmann is the Deputy Assistant Secretary for Clean Coal, Office of Fossil Energy at the Department of Energy. In this capacity, he is responsible for the DOE's R&D program in advanced fossil energy systems, large demonstration projects, carbon capture, utilization, and storage (CCUS), and clean coal deployment.

In his prior appointment as Chief Energy Technologist for Lawrence Livermore National Laboratory, Dr. Friedmann's research portfolio included smart grid and energy systems analysis, conventional and unconventional hydrocarbons, CO<sub>2</sub> capture, utilization, and sequestration, nuclear fuel cycle, geothermal power, and renewable power prediction and integration. This included research, development and technology assessment in shale gas, hydrofracturing, CO<sub>2</sub>-enhanced oil recovery, and underground coal gasification.

Dr. Friedmann is one of the most widely known and authoritative experts in the U.S. on carbon capture and sequestration. In this role, he has testified before the US House, Senate, and several state legislatures, published in *Foreign Affairs*, *Financial Times*, and the *New York Times*. In addition to close partnerships with many private companies and NGOs, Julio has worked closely with the U.S. State Department, the U.S. Environmental Protection Agency, and the U.S. Energy Association. He is a principle co-author on the MIT "*Future of Coal Energy*" Report, the National Petroleum Council report "*Facing Hard Truths*", and the World Resources Institute "*CCS Guidelines*" report. Dr. Friedmann has led technical work on large CCS projects in Europe, Africa, North America, and China. He was the program leader for the California Energy Systems for the 21<sup>st</sup> Century (CES-21) and was co-director for the US-China Clean Energy Research Center on Clean Coal and CCS. He has served on the technical advisory boards for Summit Power and GreatPoint Energy, and served on the National Coal Council (an advisory team for the Secretary of Energy).

Dr. Friedmann received his B.S and M.S. degrees from M.I.T., followed by a Ph.D., at the University of Southern California. After graduation, he worked for five years as a senior research scientist in Houston, first at Exxon and later ExxonMobil. He next worked as a research scientist at the Univ. of Maryland, collaborating with the Joint Global Change Research Institute (JGCRI) at the Univ. of Maryland and the Colorado Energy Research Institute at Colorado School of Mines. A native of Rhode Island, he has worked in Calif., Wash., Utah, Wyo., Colo., China, Japan, India, Indonesia, Spain, Ireland, the North Sea, Nigeria, Angola, Venezuela, Azerbaijan, and Australia.