



Energy Systems Network: Board of Directors

Joe Loughrey (ESN chair)
Retiring Vice-Chairman, Cummins, Inc

F.J. "Joe" Loughrey is Vice-Chairman of Cummins, Inc., headquartered in Columbus, Indiana. Cummins is a global power leader in the manufacturing, distribution and servicing of diesel engines and related technologies.

The company serves customers in more than 160 countries through its network of 550 Company-owned and independent distributor facilities and more than 5,000 dealer networks. Cummins' reported net income of \$ 550 million on sales nearing \$ 9.9 billion in 2005.

Loughrey joined Cummins in 1974, and since that time has held key positions in Human Resources and Employee Relations. He has also served as Vice President of the company's Heavy Duty Engines Division.

In 1990, Loughrey was named Group Vice President of Worldwide Operations and Technology and later served as Executive Vice President of other key Cummins' divisions.

He was elected to the Cummins' Board of Directors in 2005, the year in which he was named President and Chief Operating Officer of the company. He served as President & COO until August 1, 2009, when he became Vice-Chairman of the company, announcing his retirement effective April 1, 2009. He continues to chair the Conexus Indiana advanced manufacturing and logistics initiative and now the Energy Systems Network.

James E. Rogers
Chairman, President & CEO – Duke Energy

Jim Rogers is chairman of the board, president and chief executive officer of Duke Energy.

Rogers has more than 20 years of experience as a chief executive officer in the electric utility industry. He was named president and chief executive officer of Duke Energy following the merger of Duke Energy and Cinergy in April 2006. Before the merger, Rogers served as Cinergy's chairman and chief executive officer for more than 11 years. Prior to the formation of Cinergy, he joined PSI Energy in 1988 as the company's chairman, president and chief executive officer.

Rogers has served as deputy general counsel for litigation and enforcement for the Federal Energy Regulatory Commission (FERC); executive vice president of interstate pipelines for the Enron Gas Pipeline Group; and as a partner in the Washington, D.C., office of Akin, Gump, Strauss, Hauer & Feld. Prior to those appointments, he served as assistant to the chief trial counsel at FERC; as a law clerk for the Supreme Court of Kentucky; and as assistant attorney general for the Commonwealth of Kentucky, where he acted as intervener on behalf of state consumers in gas, electric and telephone rate cases. He was also a reporter for the Lexington (Kentucky) Herald-Leader.

In the course of his career, Rogers has served more than 40 cumulative years on the boards of Fortune 500 companies. He is currently a director of Fifth Third Bancorp, Cigna Corporation and Applied Materials, Inc. He has served as a director of Duke Realty Corporation, Cinergy Corp., PSI Energy, Bankers Life Holding Corporation, Irkutskenergo AO, and Indiana National Bank.

He is past chairman and ex officio member of the Executive Committee of the Edison Electric Institute; and is chairman of the Institute for Electric Efficiency. He serves as a member of the board of directors and the Executive Committee of the Nuclear Energy Institute, and is a board member of the Institute of Nuclear Power Operations. Rogers also serves on the boards of the U.S. Chamber of Commerce, the Business Roundtable, the National Coal Council, the National Petroleum Council, and the Nicholas Institute for Environmental Policy Solutions.

Rogers is chairman of the Edison Foundation and co-chair of the National Action Plan for Energy Efficiency and the Alliance to Save Energy. He serves on the board of directors and the Executive Committee of the World Business Council for Sustainable Development. Rogers is also a member of the Honorary Committee of the Joint U.S.-China Cooperation on Clean Energy (JUCCE). He has testified 19 times on energy and environmental policies before congressional committees. In 2007, Rogers was named the energy industry's CEO of the Year by Platts and Business Person of the Year by the Charlotte Business Journal.

Jeffrey J. Owens

President, Delphi Electronics & Safety and President, Asia Pacific

Jeffrey J. Owens, 54, is a vice president of Delphi Corporation and president of Delphi Electronics & Safety. He also is responsible for regional coordination in Asia in addition to his divisional responsibilities. He has global responsibility for 19 manufacturing and 31 engineering resource centers with more than 29,000 employees in 16 countries who build more than 310,000 sensors, power modules, radios, instrument clusters and electronic control modules every day. In addition, the Delphi division produces about 1 million integrated circuits (ICs) each day, making it one of the largest in-house manufacturers of custom ICs in the United States. He is also a member of the Delphi Strategy Board, the company's top policy-making group, and the executive champion for the engineering task team.

Throughout his career, Owens has served in a variety of engineering, manufacturing, finance and management assignments. Owens began his automotive career in 1973 as a General Motors Institute engineering student sponsored by the Delco Electronics Division of General Motors (GM) in Kokomo, Ind. He joined Delco in 1978 as an associate manufacturing engineer where he established integrated circuit assembly to support the advent of engine controls.

Following an assignment in finance in 1982, Owens returned to engineering from 1984 to 1990 and was instrumental in helping to establish high-volume, solid-state electronics capability for Delco. In 1990, he was named managing director and moved to Tucson, Ariz., to establish HE Microwave, a joint venture with Hughes Aircraft for the design and manufacture of automotive warning systems and military radar components.

Owens was promoted to director of Advanced Engineering and Systems Integration in 1994 after returning to Delco and in 1995, he was named executive director of Emerging Products & Systems. In 1997, Owens was named director of Systems and Software Engineering. He became the product line executive for Integrated Body in January 1998 and in September of that year, was promoted to general director of Engineering. Owens was named general director of Business Line Management in October 2000. He was named to his current position effective September 2001.

Owens earned a bachelor's degree in engineering from Kettering University (formerly General Motors Institute) in 1978 and a master's degree in business administration from Ball State University in 1983. He completed the Global Executive Program at Duke University in 1997.

Charles Gassenheimer
Chairman & CEO – Ener1, Inc.

Charles Gassenheimer is Chairman and Chief Executive Officer of Ener1, Inc. He is also Chief Executive Officer of Ener1 Group, the largest shareholder of Ener1, Inc.

Ener1 develops and manufactures compact, high performance lithium-ion batteries to power the next generation of hybrid and electric vehicles. The publicly traded company (NASDAQ: HEV - News) is led by an experienced team of engineers and energy system experts at its EnerDel subsidiary located in Indiana. EnerDel has developed proprietary battery systems based on technology originally pioneered with the assistance of the Argonne National Lab. In addition to battery technologies, Ener1 develops commercial fuel cell products through its EnerFuel subsidiary and nanotechnology-based materials and manufacturing processes for batteries and other applications through its NanoEner subsidiary.

Over his career, Charles has forged a reputation as a dynamic businessman, with a proven track record in structuring and managing complex capital markets transactions, as well as in transforming failing companies into highly competitive businesses.

Before joining Ener1, Charles was Managing Director and Portfolio Manager of both the Convertible Arbitrage Division and Private Investment Group of Satellite Asset Management, a hedge fund with approximately \$6 billion in assets. Prior to that, he was Portfolio Manager and head of the distressed securities investment group of Tribeca Investments, the hedge fund division of Citigroup Global Investments. Charles has also served as a Vice President at Credit Suisse First Boston.

Charles began his career with Coopers & Lybrand in the field of operational and financial turn-around management services. He graduated with a degree in Economics from the University of Pennsylvania.

S. Michael Hudson

Chairman & CEO, I-Power Energy Systems, LLC

Mike Hudson serves as Chairman and CEO of I-Power Energy Systems, which produces a unique integrated system of on-site power generation that can utilize multi-fuel energy sources to produce full-time, efficient electricity in tandem with or independent of the utility grid systems.

Prior to his current role with I-Power, Hudson was Vice Chairman, Rolls-Royce North America from 2000 until his retirement in 2002. Prior to that he held the position of President, Chief Executive Officer of Rolls-Royce Allison following its acquisition by Rolls-Royce in 1995. He also served as Chief Operating Officer and Chief Financial Officer at various times during this period. Mr. Hudson was one of two managers who with Clayton Dublier acquired Allison Gas Turbine from General Motors Corporation. He has served on the management boards of several joint venture companies in which Rolls-Royce Allison has had interest. Mr. Hudson is a member of the Board of directors of the Indianapolis Water Company.

Mr. Hudson has served as Chief Engineer for advanced technology engines, Chief Engineer for small production engines, supervisor of design for the Model 250 engines, Chief of Preliminary Design and Chief Project Engineer in vehicular gas turbines during his tenure at Allison. Mr. Hudson joined Allison in 1968 as the project engineer for the ATEGG core engine demonstrator program.

Following graduation from the University of Texas with a degree in mechanical engineering, Mr. Hudson was employed by Pratt & Whitney Aircraft from 1962 to 1968 working in aircraft engine design, installation and performance, engine development and demonstration, and industrial and marine engine application engineering.

Mr. Hudson is a Fellow of the Society of Automotive Engineers and the Royal Aeronautical Society, an honorary Fellow of the American Helicopter Society and an Associate Fellow of the American Institute of Aeronautics and Astronautics. Mr. Hudson has been a member of the Board of Directors of the National Association of Manufacturers and of the Society of Automotive Engineers, and has served as Chairman of the SAE's Aerospace Council, been on their Aerospace Program Office Committee and their Finance Committee. He has received the SAE Franklin W. Kolk Air Transportation Progress Award and the Royal Aeronautical Society British Gold Metal and has been associated with five Collier Trophy winning programs.

John E. Waters

CEO and President, Bright Automotive

John E. Waters brings more than 25 years of entrepreneurialism, engineering experience, and advanced automotive expertise to Bright Automotive, a company ready to transform the automotive industry with proven, scalable, and highly efficient transportation solutions.

A pioneer in electric vehicles, John invented the battery pack system for General Motors' first production electric vehicle, the EV1, and subsequent electric and hybrid electric vehicles. He also advanced and commercialized enabling battery technologies, such as lead acid, nickel metal hydride, lithium-ion, and applied them to transportation solutions. John helped launch Delphi Corporation's lithium battery business, led the joint venture of lithium battery manufacturer EnerDel, and developed lithium battery systems for the Segway® Human Transporter and the iBOT® medical device.

John launched Bright Automotive from Rocky Mountain Institute where he established the Transportation Practice a few years earlier. While at RMI, he consulted with several Fortune 100 companies, including Alcoa, Dell, and Ford Motor Company, to develop sustainable energy solutions and corporate strategies.

Amory B. Lovins

Co-Founder, Chairman and Chief Scientist – Rocky Mountain Institute

Amory B. Lovins is the Rocky Mountain Institute's Cofounder, Chairman, and Chief Scientist. RMI is an independent, entrepreneurial, nonprofit organization that fosters the efficient and restorative use of resources to make the world secure, just, prosperous, and life-sustaining. The Institute's staff shows businesses, communities, individuals, and governments how to create more wealth and employment, protect and enhance natural and human capital, increase profit and competitive advantage, and enjoy many other benefits — largely by doing what they do far more efficiently.

Lovins is a consultant experimental physicist educated at Harvard and Oxford. He has received an Oxford MA (by virtue of being a don), ten honorary doctorates, a MacArthur Fellowship, the

Blue Planet, Volvo, Heinz, Lindbergh, Right Livelihood ("Alternative Nobel"), World Technology, and *Time* Hero for the Planet awards, the Benjamin Franklin and Hapgood Medals, and the Nissan, Shingo, Mitchell, Jean Meyer, and Onassis Prizes.

He is an honorary member of the American Institute of Architects, Foreign Member of the Royal Swedish Academy of Engineering Sciences, Fellow of the Royal Society of Arts, and Honorary Senior Fellow of the Design Futures Council. He has lately led the redesign of over \$30 billion worth of facilities in 29 sectors for radical energy and resource efficiency. He has briefed nineteen heads of state, held several visiting academic chairs (most recently the 2007 MAP/Ming Professorship at Stanford), written twenty-nine books and hundreds of papers, and consulted for scores of industries and governments worldwide.

The Wall Street Journal named Mr. Lovins one of thirty-nine people worldwide "most likely to change the course of business in the '90s"; *Newsweek* has praised him as "one of the Western world's most influential energy thinkers"; and *Car* magazine ranked him the twenty-second most powerful person in the global automotive industry.

France Córdoba

President, Purdue University

France A. Córdoba became the eleventh President of Purdue University on July 16, 2007. Prior to joining Purdue, Córdoba served as Chancellor at the University of California (UC) Riverside from 2002 to 2007, where she was also a Distinguished Professor of Physics and Astronomy.

An internationally recognized astrophysicist, Córdoba also served as professor of Physics and Vice-Chancellor for Research at UC Santa Barbara. Before joining UC Santa Barbara in 1996, she was Chief Scientist at NASA from 1993 to 1996, serving as the primary scientific advisor to the NASA administrator and the principal interface between NASA headquarters and the broader scientific community.

Córdoba's scientific career contributions have been in the areas of observational and experimental astrophysics, multi-spectral research on x-ray and gamma ray sources, and space-borne instrumentation. She has published more than 150 scientific papers, and has a current experiment flying on the European Space Agency's X-Ray Multi-Mirror Mission. She is the winner of NASA's highest honor, the Distinguished Service Medal, and was recognized as a 2000 Kilby Laureate. She was elected to the American Academy of Arts and Sciences, is a national associate of the National Academies, and a member of the National Science Board, the 24-member governing body of the National Science Foundation. She is also a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science (AAAS), and the Association for Women in Science (AWIS).

In September 2007, Córdoba was named to the board of directors of BioCrossroads, Indiana's initiative to grow the life sciences through a public-private collaboration. She was also named to

the board of trustees for Mayo Clinic in May 2008 and began a six-year presidential appointment to the National Science Board in November 2008.

The oldest of twelve children, Córdova attended Stanford University, where she graduated cum laude with a bachelor's degree in English, and, among other activities, conducted anthropological field work in a Zapotec Indian pueblo in Oaxaca, Mexico. She earned a PhD in Physics from the California Institute of Technology in 1979. In 1997, she was awarded an honorary doctorate by Loyola Marymount University, Los Angeles.

Córdova is married to Christian J. Foster, a science educator. They have two children in college.

Thomas J. Snyder
President, Ivy Tech Community College

Thomas J. Snyder serves as president of Ivy Tech Community College, the nation's largest singly-accredited statewide community college system and the largest institution of higher education in Indiana.

Appointed in 2007, Snyder leads the strategic, academic and operational processes of Indiana's largest and fastest growing college with more than 120,000 students at 23 campuses and 100 learning centers that provide a full-spectrum of educational resources, transfer credits, associate degrees, workforce training and professional certification.

In his inaugural year at Ivy Tech, Snyder added new senior leadership by appointing the first Provost, Dr. Donald Doucette, a 30-year community college executive to chair academic programs, services and technological infrastructure; Susan Brooks, a former U.S. District Attorney and active statewide governmental liaison, was installed as Senior Vice President for Workforce and Economic Development; Joyce Rogers was recruited from her post as President and CEO of Indiana Black Expo to serve as Vice President of Development to lead statewide foundation and fundraising initiatives and former Gencorp general counsel, law professor, college dean and Colorado Supreme Court justice, Dr. Gregory Kellam Scott, joined the strategic team to chart the new era of progress for the college.

Snyder has installed numerous growth and expansion initiatives to meet the future student services requirements. A negotiated agreement with Dell now provides students with significant computer discounts. Several new facilities projects have been announced and completed. Efficiency improvements, bookstore restructuring, costs savings initiatives and joint ventures have generated more than \$ 3 million in new revenue in his first year. And under his leadership the community college has realized upgraded bond ratings of AA- from both Standard and Poor's Ratings and Fitch Ratings.

Prior to joining Ivy Tech, Snyder held Chairman and CEO/President positions at Flagship Energy Systems Center and Delco Remy International, Inc., respectively. During his 11 years at the helm of Delco Remy, he established a new business model and diversified the company from a \$500 million automotive parts supplier to \$1.3 billion in sales as global leader in truck, off-road and aftermarket products with more than 6,000 employees worldwide.

Snyder began his career at General Motors Corporation, advancing through executive positions in engineering, marketing and sales for automotive batteries, magnetics and electric vehicle components.

He graduated from Kettering University, formerly General Motors Institute in 1967, with a degree in mechanical engineering. Snyder also holds a master's degree in business administration from Indiana University. Snyder also completed a six-year tour of duty with the Air Force with research and development assignments at Vandenberg and Andrews Air Force Bases and the Pentagon. He serves on the boards of Conexus, Contech, Ener1, BioCrossroads, The Greater Indianapolis Progress Committee, The Education Council of the National Association of Manufacturers, Great Lakes Manufacturing Council, and the Paramount Theatre. Additionally, he is active on the Executive Committee of the Indiana State Chamber of Commerce and the Executive Council of St. Theodore Guerin High School in Noblesville.

Mark Miles

President & CEO, Central Indiana Corporate Partnership

Mark Miles is President and Chief Executive Officer of the Central Indiana Corporate Partnership, Inc. ("CICP"), a regional coalition of the CEO's of Central Indiana's most significant employers and leaders of universities with substantial research operations who seek to foster growth and opportunity throughout the region, advocate policy directions and engage in collaborative efforts to address issues facing the region. CICP encourages region-wide planning and goal setting in both the public and private sectors that recognize the interdependence of the entire area. CICP also develops objective data and analyses that lead to an informed consensus about activities that help Central Indiana businesses to become more globally competitive.

Before joining CICP in January 2006, Mark Miles served as CEO of the Association of Tennis Professionals (ATP) for 15 years, and was Executive Director of Corporate Relations for Eli Lilly & Company in the late 1980s. During his tenure at Eli Lilly, Miles was deeply involved in a number of civic pursuits, including serving as Chair of the Organizing Committee for the Pan American Games in Indianapolis in 1987. Miles was also involved in the public sector, managed his own marketing firm in the 1980s and acted as volunteer director for the Indianapolis tennis tournament (now the RCA Championships).