NERA
ECONOMIC CONSULTING

Dr. David Harrison Jr.

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Dr. David Harrison is a Managing Director and Co-Chair of NERA's Global Environmental Group. He has extensive experience evaluating the economic effects of a wide range of energy and environmental and other policies and programs as a consultant, academic, and government official.

Dr. Harrison has been active in the development and economic assessment of climate change policies around the world, including recent evaluations of the potential "social cost of carbon" developed by the United States government. He participated in the development or evaluation of major greenhouse gas emission trading programs and proposals in the US, including those in California, the Northeast, and the Midwest, and various federal initiatives, as well as programs in Europe and Australia. He and his colleagues assisted the European Commission and the UK government with the design and implementation of the European Union Emissions Trading Scheme (EU ETS) and national European programs related to climate change, renewable policies, and energy efficiency policies. He also has directed numerous projects for individual companies and trade associations--including those in electricity, oil and gas, refining, petrochemical, pulp and paper, cement, iron and steel, chemical, aluminum, and other sectors--to evaluate the potential effects of climate change policies. Most recently, Dr. Harrison and colleagues have used NERA's proprietary energy-macroeconomic model (New ERA) to evaluate the potential economic impacts of a US carbon tax and to evaluate the potential economic impacts of federal regulations on carbon dioxide emissions from existing power plants. He has lectured frequently on climate change and related topics at numerous conferences in the US and abroad.

Dr. Harrison has led numerous assessments of the economic impacts of major economic activities and policies on local, state, regional, and national economies. In addition to studies of major national policies using NewERA, Dr. Harrison has directed studies of the local and state economic impacts of major energy infrastructure (power plants, natural gas pipelines, and others), transportation infrastructure (airports, highways), manufacturing and mining activities (including mining, chemical, petrochemical, automotive, and many others), and large commercial and retail developments. These local and state assessments have used a wide range of economic models, including state-of-the-art regional models such as that developed by Regional Economic Models, Inc. (REMI) as well as customized models based upon available data. The projects have been developed for numerous areas in the US and abroad including Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin as well as the US as a whole and various countries and sub-regions in Africa, Europe, and the Caribbean.

Dr. Harrison has extensive experience spanning more than two decades evaluating the costs and benefits of air quality regulations under the Clean Air Act and other social regulatory policies, including various health and safety regulations. These studies have been done for a large number of sectors, including electricity, automobile, trucking, marine, chemical, iron and steel, petroleum, pulp and paper, small utility engines, small handheld equipment, snowmobiles, construction equipment, and others. He and his colleagues have worked closely with company officials and collaborated with various

technical consultants in the development of information on these programs. The results of these analyses have been presented to company officials, government agencies, and the media.

Dr. Harrison has directed benefit-cost analyses for numerous electric power plants under Section 316(b) of the Clean Water Act and other regulations related to water quality. These have included facilities on the major water bodies, including the Atlantic Coast, the Great Lakes, the Pacific Coast, and various rivers. The power plants have included numerous nuclear and fossil units. These assessments have included estimates of the potential impacts on electricity cost and reliability using detailed electricity market models in various electricity regions of the United States. Dr. Harrison has testified regarding these cost-benefit assessments in numerous state workshops and administrative hearings. He also has assisted the Utility Water Act Group (UWAG), the Edison Electric Institute (EEI), and individual utilities in their evaluation of the EPA 316(b) regulations as well as of EPA effluent guideline regulations. He has presented the results of these assessments to senior EPA and OMB officials. Dr. Harrison was a co-signer of an Amicus Brief submitted to the Supreme Court of the United States regarding the comparison of benefits and costs under Section 316(b) of the Clean Water Act.

Before joining NERA, Dr. Harrison was an Associate Professor at the John F. Kennedy School of Government at Harvard University, where he taught microeconomics, energy and environmental policy, cost-benefit analysis, transportation policy, regional economic development, and other courses for more than a decade. He also served as a Senior Staff Economist on the US government's President's Council of Economic Advisors, where he had responsibility for environment and energy policy issues. He is the author or co-author of two books on environmental policy and numerous articles on various topics in professional journals.

Dr. Harrison received a PhD in economics from Harvard University, where he was a Graduate Prize Fellow. He holds a BA in economics, *magna cum laude*, from Harvard College, where he was a member of Phi Beta Kappa, and an MSc in economics from the London School of Economics, where he was the Rees Jeffreys Scholar.

Education

PhD in economics, Harvard University
MSc in economics, London School of Economics
BA in economics, *magna cum laude*, Harvard College (Phi Beta Kappa)

Publications

- *The Challenge of Measuring Pipelines' GHG Footprints*
- *NERA Electricity Insights | Q1 2018*
- *NERA Electricity Insights | Q4 2017*
- *NERA Electricity Insights | Q3 2017*
- *Airbnb's Global Support to Local Economies: Output and Employment*
- *Portland Harbor Sustainability Project Provides a Multi-Disciplinary Environmental, Economic, and Social Sustainability Analysis of Remediation Alternatives for a Major Superfund Site*
- *Economic Impact Analysis Report for the Sustainability Evaluation of EPA Portland Harbor Superfund Site Remedial Alternatives*
- *Potential Electricity and Energy Price Outcomes under EPA's Federal Plan Alternatives for the Clean Power Plan*
- *Testimony Before US House Science Committee on EPA's Final CPP Rule*
- *Energy and Consumer Impacts of EPA's Clean Power Plan*
- *EPA Regulatory Impact Analysis of Proposed Federal Ozone Standard: Potential Concerns Related to EPA Compliance Cost Estimates*
- *Testimony on Impacts of US Environmental Protection Agency Regulations*
- *Economic Impacts of a 65 ppb National Ambient Air Quality Standard for Ozone*
- *Potential Impacts of the EPA Clean Power Plan*
- *Assessing Economic Impacts of a Stricter National Ambient Air Quality Standard for Ozone*
- *Socio-Economic Impact Analysis of Alaska LNG Project*
- *Economics in Environmental Decision-Making: US Environmental Protection Agency Provides for Site-Specific*

Cost-Benefit Analysis in Setting 316(b) Clean Water Standards

- *Economic Outcomes of a US Carbon Tax*
- *Economic Implications of Recent and Anticipated EPA Regulations Affecting the Electricity Sector*
- *Comments on EPA's Notice of Data Availability for §316(b) Stated Preference Survey*
- *Evaluation of Incentives in International Sectoral Crediting Mechanisms*
- *Economic Policy Instruments for Reducing Greenhouse Gas Emissions*
- *Climate Change Risks and Opportunities: How Companies Can Develop Information to Comply with SEC Guidance Regarding Climate Change Disclosure*
- *Impacts of Continental Airlines Operations on the New York-New Jersey Regional Economy*
- *A Victory for Economic and Environmental Rationality: Supreme Court Allows Cost-Benefit Analysis in Setting Important Clean Water Act Standards*
- *Now the Hard Work: How to Get the 'Biggest Bang for the Buck' from the Federal Economic Stimulus Package*
- *Evaluation of NHTSA's Benefit-Cost Analysis of 2011-2015 CAFE Standards*
- *Economic Assessment of Fish-Protectection Alternatives at Pilgrim Nuclear Power Station*
- *Using Emissions Trading to Combat Climate Change: Programs and Key Issues*
- *Allocation and Related Issues for Post-2012 Phases of the EU ETS*
- *Complexities of Allocation Choices in a Greenhouse Gas Emissions Trading Program*
- *The Line in the Sand: The Shifting Boundary Between Markets and Regulation in Network Industries*
- *Interactions of the EU ETS with Green and White Certificate Schemes: Summary Report for Policy Makers*
- *Economic Instruments for Reducing Ship Emissions in the European Union*
- *Assessment of the Feasibility of Benchmarked Allocation Approaches for Phase II of the EU Emissions Trading Scheme*
- *Initial Review of Potential Expansion of the UK Phase 2 NAP to Additional CO2 Sources*
- *TXU Activities Regarding Actual and Potential US Air Emissions and Climate Change Policies*
- *A Climate Policy Framework: Balancing Policy and Politics*
- *Evaluation of the Feasibility of Alternative Market-Based Mechanisms to Promote Low-Emission Shipping in European Union Sea Areas*
- *Alternatives for Implementing the UK's National Allocation Plan*
- *Emissions Trading in the U.S.: Experience, Lessons, and Considerations for Greenhouse Gases*
- *A Groundbreaking Proposal: European Greenhouse Gas Emissions Trading*
- *Fleetwide Emissions and the Cost-Effectiveness of the Consent Decree Pull-Ahead Requirements for Heavy-Duty Diesel Engines*
- *Evaluation of Alternative Initial Allocation Mechanisms in a European Union Greenhouse Gas Emissions Allowance Trading Scheme*
- *Commentary: Obstacles to Global CO2 Trading*
- *Priorities for the Development of GHG Trading Programs: Implications of the U.S. Experience*
- *Tradable Permits for Air Pollution Control: The United States Experience*
- *Emissions Trading: Turning Theory Into Practice in the Los Angeles Air Basin*
- *The Use of Externality Adders for Greenhouse Gas Emissions in Electric Utility Resource Planning*
- *The Socioeconomic Effects of Externality Adders for Electric Utility Emissions*
- *Utility Externalities and Emissions Trading: California is Developing a Better Way*

Practice Areas

Energy
Environmental Economics
Water

About NERA

NERA Economic Consulting (www.nera.com) is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For over half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. With its main office in New York City, NERA serves clients from more than 25 offices across North America, Europe, and Asia Pacific.