
RICHARD B. STEWART: A PERSONAL ACCOUNT AND ROLE AT EDF

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I. OUR PERSONAL RELATIONSHIP

Sixty-three years ago, during freshman week in September 1957, I met Dick Stewart as he was entering Yale’s Vanderbilt courtyard with a group of classmates. He was hard to miss since he was taller and larger than the other students, both physically and mentally. We worked together on the Yale Daily News, were members of the same fraternity, shared an interest in music, and even played bridge as partners. Dick was considered by my classmates who knew him as a Renaissance Man because he seemed to know everything. His breadth of knowledge, intellect, immense range of interests, and curiosity earned him that praise.

After we graduated from Yale in June 1961, Dick went off to Oxford University as a Rhodes Scholar, and I attended the University of Munich on a West German government fellowship for a year.

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[†] Editor’s Note: This Article reflects the personal recollections of the author’s relationship and work with Professor Stewart, and how their work has intersected at the Environmental Defense Fund. Wherever possible, those recollections have been corroborated with external sources.

I next saw Dick in the student dining area at that University during lunchtime one day. I was in a long queue with fellow students, and suddenly I saw Dick, striding into the room where I was queuing, clearly looking for me. He stood out above all the students. I yelled his name! I was thrilled to see him along with some other classmates traveling with him. Later, in the early spring of 1962, we traveled together for five weeks in Spain. Dick just seemed to have extensive knowledge of the history of Spain and the architecture of the cathedrals and other buildings of historic note. The finale of that trip took us to Paris where we went to the opera, something that we continue to do today at the Metropolitan Opera since we share an interest in music.

After my one year on the Continent, I returned to Yale Law School and Graduate School from which I graduated in 1966 with a master's degree in Philosophy and a law degree. While Dick was attending Harvard Law School, I would see him occasionally when I went to Boston to visit my family either when he came to my parents' home for Sunday lunch or when I attended lectures at Harvard Law School in courses that he or other college classmates were taking. After we graduated from our respective law schools, Dick went to Washington, D.C., clerked for a U.S. Supreme Court Justice, Potter Stewart, and then went to work at Covington & Burling. I left New Haven for New York, and in 1968, after two years at a small mid-Manhattan law firm, I was appointed an Assistant U.S. Attorney in the Southern District of New York where I gained extensive trial experience in the Criminal Division for close to five years.

II. DICK STEWART'S ROLE AT THE ENVIRONMENTAL DEFENSE FUND SINCE THE MID-1970S

In May 1973, as an experienced trial lawyer, I became an environmental attorney for the Environmental Defense Fund (EDF).¹ Until the fall of 1977, when EDF moved its Long Island office into Manhattan, its world headquarters was in a ramshackle farmhouse

¹ For more on the history of EDF, see *Our Story: How EDF Got Started*, ENV'T DEF. FUND, <https://www.edf.org/about/our-history> (last visited Feb. 18, 2021).

in Long Island's East Setauket near Stony Brook University.² Despite its humble office, EDF's founding scientists and a local lawyer brought a lawsuit in 1967 that resulted in a prohibition on spraying DDT in Suffolk County.³ This success had huge national implications. It also demonstrated EDF's strong science-orientation from the beginning. Soon, economics joined the sciences as critical disciplines in the legal and policy work that EDF pursued. EDF had a part-time economist on staff when I started in 1973. In 1976, it became the first national environmental organization to hire a full-time Ph.D economist,⁴ Zach Willey, in its Berkeley, California office.

In 1975, Clifford Russell—a member of the EDF board at the time, a Ph.D economist at Resources for the Future, and later a professor at Vanderbilt University—read an article on administrative law that Dick had published in the *Harvard Law Review*.⁵ He was deeply impressed with Dick's intertwining of legal and economic thinking and his assessment of the rising role of environmental and other public interest organizations. Upon his recommendation, Dick became a member of the EDF board. As a result, our paths converged again. Dick, as an academic, and I, as a trial lawyer, had independently become interested in environmental matters and now found ourselves working for the same organization.

Dick and the rest of the EDF board and staff, with their interest in innovative legal thinking, advocacy, and economics as well as science, fit together seamlessly. It was not so much that any of Dick's specific legal writing was important to EDF, but rather it was his endorsement of the way EDF staff integrated law and economics with science. This way of thinking was pronounced in a later law

² See Letter, *Longest Tenured Employee Retires*, ENV'T DEF. FUND 8 (Sept. 1997), https://www.edf.org/sites/default/files/175_Sep97.pdf (“[T]he 100-year-old farmhouse in East Setauket, NY . . . would be its headquarters until 1977.”).

³ See *Yannacone v. Dennison*, 285 N.Y.S.2d 476 (N.Y. Sup. Ct. 1967). Although the complaint was dismissed, Suffolk County stopped spraying DDT after the lawsuit: the state legislature banned it shortly after the dismissal. See ENV'T DEF. FUND, *DDT WARS AND THE BIRTH OF EDF* (2015), <http://www.edf.org/content/ddt-wars-and-birth-edf-pdf>.

⁴ See ENV'T DEF. FUND, *ANNUAL REPORT 2016* 1 (2016), http://www.edf.org/sites/default/files/EDF_AR2016.pdf.

⁵ See Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667 (1975).

review article by Dick,⁶ where he discussed market innovation and modifying command-and-control regulation as central topics. Dick's academic thinking provided, in effect, a firm environmental and administrative law framework for EDF's policy initiatives. It enhanced our stature and credibility in cases that we took to court, including two cases with EDF as lead plaintiff before the U.S. Supreme Court. We won one of these cases 9-0,⁷ and another 7-2.⁸ In addition, for me, Dick's presence helped to confirm that I had taken the right path by, instead of going to a law firm after the U.S. Attorney's office, joining a small, fledgling, national not-for-profit environmental organization with iffy financial underpinnings headquartered in an historic farmhouse in those early years, and using my trial experience to advance the goals of the newly enacted Clean Water Act,⁹ Clean Air Act,¹⁰ and other federal statutes.

Dick became chair of the board from 1980–83, and then stepped down when he found an outstanding replacement in Frank Loy, the President of the German Marshall Fund. Dick remained on the board until President George Bush chose him to be the Assistant Attorney General for the Land and Natural Resource Division of the U.S. Justice Department in 1989.¹¹

In 1983, I became the General Counsel of EDF and, in that role, oversaw the formal legal action that staff lawyers pursued. The General Counsel is also the staff liaison to the Litigation Review (later Advocacy) Committee (LAC) that the board set up at the request of the Ford Foundation, an early major financial supporter in the 1969–74 period. The chair of the LAC in 1983 was James Benkard, a litigation partner at Davis Polk & Wardwell. In addition to Dick who had joined the LAC when he became a board member, with Jim Benkard's support, I asked some other law professors whom I knew

⁶ See Richard B. Stewart, *Regulation, Innovation, and Administrative Law: A Conceptual Framework*, 69 CAL. L. REV. 1256 (1981).

⁷ See *Env't Def. v. Duke Energy Corp.*, 549 U.S. 561 (2007).

⁸ See *City of Chicago v. Env't Def. Fund*, 511 U.S. 328 (1994).

⁹ See Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816 (codified as amended at 33 U.S.C. §§ 1251–1388).

¹⁰ See Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (codified as amended at 42 U.S.C. §§ 7401–7671q).

¹¹ See *ENRD Assistant Attorneys General: Then and Now*, U.S. DEP'T OF JUST., <https://www.justice.gov/enrd/enrd-assistant-attorneys-general-then-and-now> (last updated Jan. 20, 2021).

to serve on the LAC with Dick. Another new member at that time was Richard Lazarus, now a professor at Harvard Law School, who had served as a summer legal intern for me the summer of 1977. A third was Oliver Houck, a law professor at Tulane Law School in New Orleans, where I was involved in working on the restoration of the Mississippi River Delta in coastal Louisiana. The role of the LAC—then and now—is to review the litigation requests prepared by EDF legal staff when they want to initiate formal legal action, including initiating or intervening in federal and state court cases, formal agency adjudicatory proceedings, and formal petitioning.

Except during the years when he served in the Justice Department, Dick has continued as a member of the EDF LAC. During that time, Dick, with other members of the LAC, has reviewed, commented on, and approved scores of LAC litigation requests from staff attorneys, often joined by staff economists or scientists. But the important role of the LAC is not just this formal function. It is the ability of LAC members like Dick to discuss legal theories and arguments with staff lawyers, and to suggest ways to frame those theories and arguments, including constitutional issues such as the dormant commerce clause, in a manner that advances EDF's goals. Throughout these years, Dick has been unbelievably generous sharing his thinking on issues and sharing his time.

III. INTEGRATION OF ECONOMICS AND LAW AT EDF SINCE THE 1970s

EDF has a well-deserved reputation for using market instruments and economic incentive systems, and then finding the ways to use applicable law to embrace these instruments. Dick's scholarship helped EDF lawyers and economists sharpen these legal arguments and provided an academic legal framework for embracing "market-type incentive systems"¹² moving away from reliance on command-and-control regulation.

For the remainder of this article, I will discuss four examples of such market instruments: (1) marginal cost pricing, both in the transportation and electric utility sphere; (2) cap and trade with emissions trading; (3) reduction or elimination of federal subsidies that have contributed to environmental degradation; and (4) trade

¹² See generally Stewart, *supra* note 6, at 1326.

policies. Among national environmental organizations, EDF has been uniquely positioned to advocate for and advance “market-type incentive systems” as envisioned by Dick since it has had—and still has—many outstanding Ph.D economists on its staff, worked closely with leading academic economists, and has always encouraged its staff attorneys, including me, to work closely with such economists. Staff Ph.D economists with whom I worked during my career at EDF included Zach Willey, who initially worked in our Berkeley, California office starting in 1976, before moving to a field office in Bend, Oregon; Dan Dudek, who joined the New York office in late 1985 and whose focus has been on cap and trade systems both in the United States and China; Nat Keohane, who has been leading EDF’s international climate program; Beia Spiller, an economist in the EDF New York office who has worked closely with the New York University School of Law Institute for Policy Integrity; Ferit Ucar, a former economist in the New York office, and Jamie Fine, an economist in the EDF northern California office.

In addition, several academic economists have played major roles in the development of economic thinking at EDF and influenced the attorneys’ work. Two with whom I worked personally on EDF matters were William Vickrey, who was awarded the Nobel Prize in the Economic Sciences in 1996, just days before he died,¹³ and Robert Stavins, a professor at the Harvard John F. Kennedy School. In the early 1980s Rob served on the staff of our Berkeley, California office, which was founded by Tom Graff, the most important activist and thinker on California water policy from 1971 until the turn of the century.

Dick Stewart, more than any other law school professor or preeminent legal thinker, was responsible for devising an administrative legal framework that facilitated and gave credence to the integration of environmental legal policies, including statutory and regulatory interpretation, with the aforementioned economists’ research and analysis.

¹³ See Press Release, Nobel Prize, Royal Swedish Acad. of Scis., Prize in Economic Sciences 1996 Press Release (Oct. 8, 1996), <https://www.nobelprize.org/prizes/economic-sciences/1996/press-release/>. See generally *William Vickrey – Biographical*, NOBEL PRIZE, <https://www.nobelprize.org/prizes/economic-sciences/1996/vickrey/biographical/> (last visited Mar. 9, 2021).

A. Marginal Cost Pricing

While EDF was active in federal and state adjudicatory proceedings arguing for adoption of marginal cost pricing policies before Dick became involved, I mention these actions because they serve as an early example of EDF's advocacy for "market-type incentive systems." In 1975, the Port Authority of New York and New Jersey increased its Trans-Hudson bridge and tunnel tolls and its PATH tube fares.¹⁴ At the time, as an interstate transportation facility, it was required to obtain approvals from the U.S. Department of Transportation (DOT) under a provision of the Bridge Act of 1906, which was ultimately rescinded after this proceeding,¹⁵ potentially due to pressure from the Port Authority. Under the Act and its relevant regulations, other parties could not only comment but request a formal adjudicatory hearing before a DOT administrative law judge.¹⁶ The Natural Resources Defense Council, represented by its attorney David Schoenbrod, had sought party status. Since I did not support the increase in PATH tube fares, although we had no problem with the proposed increase in trans-Hudson bridge and tunnel toll increases, I conferred with Ernst R. (Hasty) Habicht, an EDF chemist, and EDF's then-executive director Rod Cameron about EDF becoming a party. While supportive of EDF seeking party status, they advised me to first meet with William Vickrey in Columbia University's economics department. I did so and was soon immersed in the world of marginal cost pricing as applied to transportation systems that experience congestion, a concept that underpins congestion pricing or time-of-day tolling.

Vickrey agreed to appear as an expert witness on EDF's behalf and prepared testimony that remains a brilliant exposition of the economic policy rationale behind congestion pricing that also addresses environmental justice concerns, such as public transit subsidization, on economic grounds. His testimony emphasized the economic waste caused by congestion, where the driver of any one

¹⁴ See *Port Authority Bridge and Tunnel Tolls Increase at Midnight*, N.Y. TIMES, May 5, 1975, at 67.

¹⁵ See Bridge Act of 1906, 33 U.S.C. §§ 491–98 (1970) (requiring "reasonable" toll rates and granting DOT authority to regulate), amended by Surface Transportation and Uniform Relocation Assistance Act of 1987, Pub. L. No. 100-17, § 135(a), 101 Stat. 132, 173 (repealing provision of 33 U.S.C. § 494 requiring "reasonable" toll rates and granting DOT authority to regulate).

¹⁶ See 33 U.S.C. § 494 (1970); 49 C.F.R. §§ 310.1–310.14 (1976).

vehicle is unaware of the costs imposed on other drivers, and was the key evidence that we discussed in our post-hearing briefs.¹⁷ Vickrey focused on the economic waste caused by lost time from congestion, rather than the enormous environmental costs associated with wasted fuel, vehicular air pollutants, and CO₂ emissions.¹⁸ This strategy paid off; the ALJ was impressed with Vickrey's testimony and in 1977 ordered the Port Authority to assess Vickrey's analysis further, something that the Port Authority was not enthusiastic about doing. In the meantime, however, the new tolls were ultimately permitted to take effect.¹⁹ The Port Authority did not adopt any form of congestion pricing then, and indeed the whole idea was ahead of its time in that the technical means for charging vehicles time- and congestion-variant tolls efficiently did not yet exist.

However, Vickrey's ideas influenced a generation of transportation advocates, including Charlie Komanoff, a Ph.D economist and president of Komanoff Energy Associates, and Janine Bauer, the first executive director of the Tri-State Transportation Council from 1993 to 2003, who promoted the idea of congestion pricing.²⁰ At the time, I was the chair of the TSTC board. Despite years of inaction, the concept of congestion pricing persisted in the New York area. In the spring of 2001, when Chris Ward was its executive director, the Port Authority in fact incorporated congestion pricing ("time-of-day tolling"), albeit in a modest fashion, into its trans-Hudson toll structure.²¹

¹⁷ See generally Statement of William Vickrey, Bayonne Bridge, Goethals Bridge, George Washington Bridge, and Outerbridge Crossing Tolls, No. 76-9 (Fed. Highway Admin. 1977) (on file with author).

¹⁸ See generally *id.*

¹⁹ See Recommended Decision and Order at 27, Bayonne Bridge, Goethals Bridge, George Washington Bridge, and Outerbridge Crossing Tolls, No. 76-9 (Fed. Highway Admin. May 9, 1977) (on file with author) (ordering reversion to previous toll rates and ordering congestion study); Decision of the Administrator at 24, Bayonne Bridge, Goethals Bridge, George Washington Bridge, and Outerbridge Crossing Tolls, No. 76-9 (Fed. Highway Admin. Aug. 9, 1977) (on file with author) (allowing new tolls to take effect but ordering congestion study).

²⁰ For an example of Komanoff's work, see Charles Komanoff, *Pollution Taxes for Roadway Transportation*, 12 PACE ENV'T L. REV. 121 (1994). For an overview of Janine Bauer's work, see Janine Bauer, Esq., METROLAW BLOG (last visited Mar. 22, 2021), <https://metrolawblog.wordpress.com/about/>.

²¹ See Ronald Smothers, *Port Authority Increases Tolls and Train Fare*, N.Y. TIMES, Jan. 26, 2001, at A1.

EDF's interest in congestion pricing continued. When Mayor Bloomberg pursued the idea of time-of-day tolling for vehicles that entered the central business districts of Manhattan, and the State Legislature set up an advisory committee to formulate the proposal, Andy Darrell, director of the EDF New York program office, served on that committee.²² That proposal was not adopted, but close to a decade later, with an emphasis on providing a new source of revenues for a financially-challenged MTA, Governor Andrew Cuomo advanced a remarkably similar idea. Andy Darrell played a central role in organizing the coalition of advocacy organizations including the Riders Alliance and the New York League of Conservation Voters that provided key support for adoption of this proposal by the State Legislature in 2019.²³

In the public electric utility context, EDF advanced marginal cost pricing ideas with Vickrey as a key expert in the 1970s. This work was also ahead of its time because the sophisticated metering and payment technologies that are commonly used today were not available in the 1970s. In the late 1970s after Dick had joined the EDF board, our California office found a new way to approach the problem. Zach Willey and Dan Kirschner, an ingenious computer modeler, devised Elfin, a model that could be used to analyze the financial and revenue consequences of alternative utility investment pathways.²⁴ It established, based on huge amounts of data and analysis, that investments in energy efficiency in buildings and

²² See *Congestion Mitigation*, N.Y. STATE DEP'T OF TRANSP., https://www.dot.ny.gov/programs/congestion_mitigation_commission (last visited Feb. 26, 2021).

²³ See Jesse McKinley & Vivian Wang, *New York State Budget Deal Brings Congestion Pricing, Plastic Bag Ban and Mansion Tax*, N.Y. TIMES (Mar. 31, 2019), <https://www.nytimes.com/2019/03/31/nyregion/budget-new-york-congestion-pricing.html>; Jimmy Vielkind & Paul Berger, *Unusual Alliance Leads Congestion-Pricing Movement*, WALL ST. J. (Feb. 21, 2019), <https://www.wsj.com/articles/unusual-alliance-leads-congestion-pricing-movement-11550774425>; Shachar Sharon, *NYLCV & Other Environmental Groups Rally for Congestion Pricing*, N.Y. LEAGUE OF CONSERVATION VOTERS (Mar. 15, 2019), <https://nylcv.org/news/nylcv-other-environmental-groups-rally-for-congestion-pricing/> (discussing NYLCV's addition to the Coalition).

²⁴ See Edward Kahn, *Regulation by Simulation: The Role of Production Cost Models in Electricity Planning and Pricing*, 43 OPERATIONS RSCH. 388, 389 (1995) (citing DAVID ROE, DYNAMOS AND VIRGINS (1984)) (describing the history of the Elfin model); see also Clinton Wilder, *Software for Political Advantage*, COMPUTERWORLD, Mar. 26, 1990, at 80.

appliances, renewables, and small-scale generation systems were more cost-effective in terms of meeting electric energy demand than construction of the large number of coal-fired and nuclear power plants that California utilities were seeking permission from the PUC to construct.²⁵ In the late 1980s, Elfin was adopted by the California Public Utility Commission.²⁶

Later, in the early 2000s, public utility marginal cost pricing ideas resurfaced with Jamie Fine's work in our California office using a model that could assess the impacts of electric power time-of-day pricing proposals on utility electricity demand during peak periods. Jamie Fine assisted the New York office legal staff, including Elizabeth Stein and myself, in promoting these ideas in the Con Edison rate proceeding in 2013. The EDF LAC, with Dick Stewart as an energetic member, approved our participation in that proceeding with pursuit of time-of-day pricing as a central concern as a key policy tool to increase the efficiency of utilization of existing production, transmission, and distribution infrastructure. Jamie Fine provided testimony in this proceeding showing the impact of time-of-day pricing on reducing peak demand use of electrical power based on a marginal cost pricing model that he had helped to develop.²⁷ In July and August 2013, Con Edison and the New York Public Service Commission staff who testified in that proceeding wholly opposed both time-of-day pricing and the adoption of advanced metering infrastructure that could measure power consumption in small increments of time.²⁸

That changed in the fall of 2013 with Audrey Zibelman's arrival as PSC chair²⁹ and with EDF's relentless advocacy work by Beia Spiller, an economist in the New York office. In its February 2014 rate proceeding decision, the PSC ordered Con Edison to pursue a Brooklyn Queens Demand management project to find ways of

²⁵ See Wilder, *supra* note 24, at 80.

²⁶ See Khan *supra* note 24, at 390.

²⁷ See Rebuttal Testimony of James Fine, Env't Def. Fund, P.S.C. No. 13-E-0030 (N.Y. Pub. Serv. Comm'n June 21, 2013).

²⁸ For the Con Edison testimony, see, e.g., Rebuttal Testimony of William A. Atzl, Jr. et al., Elec. Rate Panel, P.S.C. No. 13-E-0030 (N.Y. Pub. Serv. Comm'n June 21, 2013).

²⁹ See *New Chair at the Public Service Commission*, N.Y. PUB. SERV. COMM'N (Sept. 3, 2013), [https://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesBy-Category/F956398319B4483285257BDB00708FDE/\\$File/pr13060.pdf?OpenElement](https://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesBy-Category/F956398319B4483285257BDB00708FDE/$File/pr13060.pdf?OpenElement).

meeting demand in large, growing parts of Brooklyn and Queens that were far less costly and far more environmentally advantageous than building a whole new substation at a cost exceeding one billion dollars.³⁰ In addition, through that decision and the settlement that Con Edison reached with all the parties (including EDF) in 2016, Con Edison pursued implementation of advanced metering infrastructure and two pricing pilots that the infrastructure made technically possible.³¹ Beia Spiller was the EDF economist who made detailed proposals to Con Edison staff to improve the quality of information that could be developed through those pilot projects about customer response to changes in price structure, demand response incentives and appliance technology, and to make effective use of advanced metering infrastructure with support from legal staff Elizabeth Stein and myself. Beia also organized a one-day conference on utility pricing that the Institute for Policy Integrity and the New York Department of Public Service co-hosted with EDF at New York University School of Law on March 31, 2015.³²

B. Cap and Trade – Emissions Trading

Through both his academic writing³³ and while he was the Assistant Attorney General for the Land and Natural Resources Division of the Department of Justice from 1989–91,³⁴ Dick has strongly supported and actively advocated for the use of cap and trade

³⁰ See generally Order Approving Electric, Gas and Steam Rate Plans in Accord with Joint Proposal at 16, 75, P.S.C. Nos. 13-E-0030, 13-G-0031, 13-S-0032, 13-M-0376, 13-M-0040, 09-E-0428 (N.Y. Pub. Serv. Comm'n Feb. 21, 2014); *PSC Approves New Rates for Con Edison*, N.Y. PUB. SERV. COMM'N (Feb. 20, 2014), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={6F1A86C4-6987-4D6E-A8C5-ECA735C7C625}>.

³¹ See Letter from William A. Atzl, Jr., Direct Rate Engineering, Consol. Edison Co., to Hon. Kathleen H. Burgess, Sec'y N.Y. Pub. Serv. Comm'n (July 6, 2018), https://www.coned.com/_external/cerates/documents/elec/pending/innovative-pricing-pilot-filing.pdf.

³² See *On the REV Agenda: The Role of Time-Variant Pricing*, INST. FOR POL'Y INTEGRITY, <https://policyintegrity.org/news/event/on-the-rev-agenda-the-role-of-time-variant-pricing> (last visited Apr. 12, 2021).

³³ See, e.g., Stewart, *supra* note 6, at 1332 (discussing “transferable pollution” rights).

³⁴ See *Richard B. Stewart*, U.S. DEP'T OF JUSTICE (last updated Nov. 27, 2018), <https://www.justice.gov/enrd/richard-b-stewart>. While at DOJ, Dick changed the name of the division to “The Environment and Natural Resources Division,” which remains its name to this day.

systems relating, first and foremost, to United States or international control of CO₂ emissions.

In the summer of 1988, at the behest of Senators John Heinz of Pennsylvania and Tim Wirth of Colorado, whose wives sat on EDF's board, Rob Stavins prepared a report on the use of economic mechanisms to advance solutions to environmental problems.³⁵ That report included discussion of cap and trade as a mechanism for addressing and reducing power plant SO₂ emissions in an economically efficient manner.³⁶ In early 1989, President Bush's Counsel Boyden Gray called Fred Krupp to solicit EDF's assistance in framing an electric utility SO₂ cap and trade program. The power plants that would be most directly affected would be coal-fired facilities largely in the middle part of the country. Dan Dudek—a lead EDF staff economist with a strong interest in emissions trading—was the obvious person on the staff to take charge of this critical project.

Since I had helped to support and defend in court the New Jersey Pinelands transfer of development rights (known as the Pineland Development Credits program) set forth in the Jersey Pinelands Commission 1981 Comprehensive Management Plan, which was conceptually similar to an air pollutant cap and trade program,³⁷ I provided some initial assistance to Dan. However, it was the team of Dan, Michael Oppenheimer—a Ph.D atmospheric scientist who was EDF's senior scientist—and Joe Goffman—a lawyer and gifted policy advocate in our D.C. office—who advanced this initiative with EPA, the White House, and Congress. Dan's research, used by EDF in internal briefing papers and as advocacy talking points, found that a cap-and-trade program would produce a highly significant cost savings, in contrast to a command-and-control approach. EPA's own analysis confirmed the substantial savings.³⁸ Indeed, in response to the magnitude of the cost savings, the White House took an aggressive SO₂ reduction program. Ultimately, Congress incorporated an SO₂ cap-and-trade program into Title IV of the Clean Air

³⁵ See ROBERT N. STAVINS ET AL., PROJECT 88: HARNESSING MARKET FORCES TO PROTECT THE ENVIRONMENT (1988).

³⁶ See *id.* at 36.

³⁷ See N.J. PINELANDS COMM'N, COMPREHENSIVE MANAGEMENT PLAN FOR THE PINELANDS NATIONAL RESERVE §§ 5-401 to 5-407 (1980).

³⁸ See ICF, INC., ECONOMIC, ENVIRONMENTAL, AND COAL MARKET IMPACTS OF SO₂ EMISSIONS TRADING UNDER ALTERNATIVE ACID RAIN CONTROL PROPOSALS 2-21 (1989).

Act Amendments of 1990,³⁹ a policy that has been remarkably successful in driving down electric utility SO₂ emissions at moderate cost.

In October 1989, Dan Dudek and Michael Oppenheimer asked me to participate in an IPCC policy committee meeting as EDF's representative. The chair of that policy committee asked me to serve on a CO₂ emissions trading working group that he was establishing. In April 1991, Dick Stewart, as the United States representative in his capacity as the Assistant Attorney General, and I flew together to Paris to participate in a workshop on economic instruments, including both emissions trading and carbon taxes.

On another front, EDF's California staff and Jim Marston, the director of the EDF Texas office, were actively engaged in supporting what became the California Global Warming Solution Act of 2006.⁴⁰ The California Air Resources Board, pursuant to that statute, adopted a Scoping Plan that incorporated a cap-and-trade strategy for reducing CO₂ emissions from major stationary sources in a cost-effective manner.⁴¹ An Environmental Justice coalition, Association of Irrigated Residents, challenged the Scoping Plan in state court, largely because of the Plan's preference for a cap-and-trade system as the strategy for achieving significant CO₂ reductions from these sources.⁴² The Association maintained that the California Air Resources Board had failed to evaluate whether the program—the cap-and-trade element, in particular—would lead to disproportionately high levels of conventional air pollution, such as particulate matter, in low-income communities.⁴³

In EDF's California office, attorney Tim O'Connor thought that we should enter the case in support of the California Air Resources Board, considering our work on the statute and the Scoping Plan and EDF's enduring support for a cap-and-trade program. Dick Stewart and the other members of LAC supported this undertaking despite our distaste for challenging the Association. I assisted Tim

³⁹ See Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399, 2584–2634 (codified at 42 U.S.C. §§ 7651–7651o).

⁴⁰ CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2006).

⁴¹ See CAL. AIR RES. BD., CLIMATE CHANGE SCOPING PLAN 30–38 (2008).

⁴² See Petitioners' Opening Brief in Support of Their Petition and Complaint at 18, *Ass'n of Irrigated Residents v. Cal. Air Res. Bd.*, No. CPF-09-509562, 2011 WL 8897315 (Cal. Super. Ct. May 20, 2011), 2010 WL 6813153.

⁴³ See *id.* at 22, 24–25.

in thinking through legal strategies. After its motion to intervene on behalf of the Air Resources Board was denied, EDF proceeded as an amicus.⁴⁴ The court rejected the Association's argument that the cap-and-trade program was not legally authorized but agreed that the Board had not adequately investigated alternatives to it.⁴⁵ In response, the California Air Resources Board revised its environmental impact statement, considered alternatives, and again adopted the cap-and-trade program as the preferred strategy. The courts upheld this action.⁴⁶

In the sense that "all's well that ends well," with strong support from the EDF California offices led by Quentin Foster, the California Legislature in 2018 finally adopted two major pieces of legislation, one continuing the authority for the Scoping Plan with its cap-and-trade component and the other strengthening enforcement of major stationary source air pollution permits in low-income areas.⁴⁷ While a cap-and-trade program designed to reduce CO₂ emissions will lead to an overall reduction in conventional air pollutants as well, there may not be a geographically uniform reduction. It seems possible that the Association's true concern may have been weak enforcement of existing pollutant standards. By combining the cap-and-trade program with stronger conventional air pollution enforcement, the dual 2018 bills directly addressed that concern. In 2019, the California Legislature approved the legislation by a two-thirds margin and Governor Jerry Brown signed into law a statute that specifically allowed the use of emissions trading auctions that generated revenues.⁴⁸

⁴⁴ See Application of Environmental Defense Fund for Leave to File Amicus Curiae Brief in Support of Defendant and Respondent, California Air Resources Board, Ass'n of Irrigated Residents v. Cal. Air Res. Bd., 143 Cal. Rptr. 3d 65 (Ct. App. 2012) (No. A132165), 2012 WL 698729.

⁴⁵ See Ass'n of Irrigated Residents v. Cal. Air Res. Bd., No. CPF-09-509562, 2011 WL 8897315, at *2 (Cal. Super. Ct. May 20, 2011).

⁴⁶ See Ass'n of Irrigated Residents v. Cal. Air Res. Bd., 143 Cal. Rptr. 3d 65, 71, 80–81 (Ct. App. 2012).

⁴⁷ See A.B. 398, 2017–2018 Leg., Reg. Sess. (Cal. 2017), 2017 Cal. Stat. 1927 (scoping plan); A.B. 617, 2017–2018 Leg., Reg. Sess. (Cal. 2017), 2017 Cal. Stat. 1943 (permit enforcement); Fred Krupp, *California Extends Landmark Cap-and-Trade Program, Accelerates Air Quality Improvement*, ENV'T DEF. FUND (July 17, 2017), <https://www.edf.org/media/california-extends-landmark-cap-and-trade-program-accelerates-air-quality-improvement>.

⁴⁸ See AB-398: History, CAL. LEG. INFO., https://leginfo.legislature.ca.gov/faces/billHistoryClient.xhtml?bill_id=201720180AB398 (last visited

C. Environmentally Detrimental Federal Subsidies

In the early 1980s, EDF became concerned about the detrimental effects to the environment caused by some federal subsidies. A prime example was the destruction of many free-flowing rivers in California, caused by the harmful federally-funded projects of the Bureau of Reclamation.⁴⁹ Because of the federal appropriations, the water made available to farmers through this project was so inexpensive that agricultural users had no incentive to use the water efficiently through conservation.⁵⁰ Tom Graff, the founder of and senior attorney in EDF's California office, advocated for allocating all such federal water by auction when project contracts came up for renewal. That proposal was not enthusiastically received by major economic interests.

Tom continued to search for another route to increase the efficient use of agricultural water and thus reduce the political pressure to dam up and destroy the remaining wild rivers in northern California. He was interested in creating a way to trade water rights and asked an economic associate Rob Stavins to explore the possibilities. Rob wrote a remarkable report published by EDF in 1983 that proposed letting Los Angeles invest in irrigation efficiency technologies in the Imperial Agricultural District in exchange for the right to take, for its municipal use, the water saved.⁵¹ It was the first such report based on a detailed economic analysis that demonstrated the significant economic advantages of such a water trading program to both the farmers and Los Angeles urban dwellers.

In a very different, precipitation-rich part of the country in the Lower Mississippi River Basin, I was involved in litigation with the

Mar. 10, 2021); *AB-617: History*, CAL. LEG. INFO., https://leginfo.legislature.ca.gov/faces/billHistoryClient.xhtml?bill_id=201720180AB617 (last visited Mar. 10, 2021).

⁴⁹ See Ben A. Franklin, *The Bureau of Reclamation and Its Many Critics*, N.Y. Times (June 13, 1976), <https://www.nytimes.com/1976/06/13/archives/the-bureau-of-reclamation-and-its-many-critics-the-dam-builders.html>.

⁵⁰ See Lawrence B. Lee, *California Water Politics: Opposition to the CVP, 1944-1980*, 54 AGRIC. HIST. 402, 403 (1980), <https://www.jstor.org/stable/pdf/3742832.pdf?refreqid=excelsior%3A30905a488a84b6fe0d038c2ff54b5052>.

⁵¹ See ROBERT N. STAVINS, ENV'T DEF. FUND, TRADING CONSERVATION INVESTMENTS FOR WATER: A PROPOSAL FOR THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA TO OBTAIN ADDITIONAL COLORADO RIVER WATER BY FINANCING WATER CONSERVATION INVESTMENTS FOR THE IMPERIAL IRRIGATION DISTRICT (1983).

goal of preserving bottomland hardwood forests in wetland areas, which had survived the agricultural conversion of tens of millions of acres to agriculture in preceding decades.⁵² Prior to the adoption of the National Environmental Policy Act (NEPA) in 1970,⁵³ the Corps of Engineers and Soil Conservation Service claimed benefits for the clearing and conversion of forested wetland acreage that their federal water navigation and drainage projects induced. With NEPA in place, the Corps and SCS realized that, if they claimed benefits for induced clearing and conversion, they would also have to disclose and assess the significant adverse ecological and water quality impacts of that conversion.⁵⁴ Therefore, starting in the 1970s, both federal agencies changed their policies by no longer claiming that their projects induced wetland conversion.⁵⁵

In the mid-1980s, I sought Rob's assistance to do an econometric analysis of federally funded water projects in the Lower Mississippi Basin. With scientist David Hoskins and me as project coordinators, and support from the Department of Interior Office of Economic Research, Rob conducted an amazing econometric analysis that EDF published in 1987.⁵⁶ That analysis established that federally funded water projects were responsible for at least 25 percent of the forest wetland loss in the Lower Basin between 1935 and 1984.⁵⁷ No one from the Corps or private industry questioned this analysis. As a consequence, the Corps and SCS recognized the severe adverse impacts of their subsidized water projects, and they constructed few of these projects after the results of Rob's analysis were disclosed.

⁵² See *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897 (5th Cir. 1983); *Avoyelles Sportsmen's League v. Alexander*, 473 F. Supp. 525 (W.D. La. 1979); *Avoyelles Sportsmen's League v. Alexander*, 511 F. Supp. 278 (W.D. La. 1981).

⁵³ See National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321-4347).

⁵⁴ See *id.* § 4332.

⁵⁵ See HEIMLICH ET AL., WETLANDS AND AGRICULTURE: PRIVATE INTERESTS AND PUBLIC BENEFITS 25-26, U.S. DEP'T OF AGRI. (Sept. 1998).

⁵⁶ See ROBERT N. STAVINS, CONVERSION OF FORESTED WETLANDS TO AGRICULTURAL USE (1987).

⁵⁷ See *id.* at 42.

D. Trade Policies

Dick Stewart, given his focus on Global Governance, and I have been interested in trade policy for a long time. In 1987 at the request of Michael Oppenheimer and Dan Dudek, I attended the negotiations, as a non-government observer representing EDF, that led to the adoption of the Montreal Protocol. I became intrigued by the willingness of the supporting countries to use trade sanctions as a tool to enforce the prohibition against production of CFCs. Like Dick, I was strongly in favor of the Trans-Pacific Partnership (TPP) that Presidents George W. Bush and Barack Obama negotiated. I was aghast, therefore, when I read in a front-page article in the New York Times in July 2015 that the Sierra Club and other national environmental organizations were opposed to the pact.⁵⁸ A year later, many more environmental organizations led by the Sierra Club sent another letter to members of Congress urging disapproval of the Trans-Pacific Partnership.⁵⁹ The centerpiece of their position, as I understood their letters, was that the Investor State Dispute Settlement (ISDS) provisions in the Pact could undermine the capacity of TPP countries, particularly low-income countries in Asia or South America, to fulfill their Paris Agreement commitments.

Fortunately, EDF was not a co-signer of the letter. In August 2015, after meeting with the staff person at the Office of the U.S. Trade Representative who oversaw the negotiations of the environmental and natural resource provisions of trade pacts including the TPP, that Office invited me to become a member of the Office's Trade Environmental Policy Advisory Committee (TEPAC). I had conversations with both Nat Keohane and Dick about ISDS. Following a six-month FBI investigation, I became a formal member on March 8, 2016. By then, ironically, the negotiation of the TPP was completed, and the TEPAC had no further role to play.

⁵⁸ See Jonathan Weisman, *Talks for Pacific Trade Deal Stumble*, N.Y. TIMES (July 31, 2015), <https://www.nytimes.com/2015/08/01/business/tpp-trade-talks-us-pacific-nations.html>. On June 11, 2015, 40 environmental organizations led by the Sierra Club sent a letter to Congress outlining threats to health, climate and clean energy if Congress enacted fast-track legislation that would facilitate approval of the Trans-Pacific Partnership.

⁵⁹ See *More Than 450 Groups to Congress: Pending Trade Deals Threaten Efforts to Keep Fossil Fuels in the Ground*, SIERRA CLUB (June 6, 2016), <https://content.sierraclub.org/press-releases/2016/06/more-450-groups-congress-pending-trade-deals-threaten-efforts-keep-fossil>.

Fourteen months later, when the U.S. Trade Representative Robert Lighthizer advised Congress that because the Trump Administration wanted to renegotiate the North American Free Trade Agreement (NAFTA) with Canada and Mexico,⁶⁰ the TEPAC under federal law was obliged to prepare a report with recommendations within a prescribed period.⁶¹ That provided an opportunity to find out about ISDS experience under NAFTA and what steps could be taken to improve its structure procedurally to limit any abuses by the United States and other investors that could weaken compliance with environmental laws, regulations, and agreements. While TEPAC discussions are confidential, its public report with recommendations that was submitted to Mr. Lighthizer on June 30, 2017 has a section on ISDS.⁶² While this section indicates that some members of the TEPAC support ISDS and others are opposed to it, the report sets forth a series of procedural recommendations, including a limit that investors could seek for damages based on actual funds incurred, not lost speculative profits as they typically sought.⁶³ The USMCA in fact incorporates many of those ideas in the U.S.-Mexico ISDS provisions, with no ISDS provision at all in the U.S.-Canada agreement.

IV. COASTAL LOUISIANA MISSISSIPPI RIVER DELTA RESTORATION

Early in my EDF career, I became involved in litigation to help stop the expansion of a set of navigation channels near Morgan City where the Corps of Engineers proposed to dispose of dredged material on eight thousand acres of adjacent wetlands. That case, with two trials in April 1974 and January 1978, is the subject of a detailed law review article by Oliver Houck, professor at Tulane Law School.⁶⁴

⁶⁰ See Press Release, Off. of the U.S. Trade Representative, USTR: Trump Administration Announces Intent to Renegotiate the North American Free Trade Agreement (May 18, 2017), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/may/ustr-trump-administration-announces>.

⁶¹ See TRADE & ENV'T POL'Y ADVISORY COMM., NORTH AMERICAN FREE TRADE AGREEMENT 2018, at 1 (2018) (citing 19 U.S.C. § 4204(b)(4)).

⁶² See *id.* at 12–14 (summarizing the June 2017 report's ISDS discussion).

⁶³ See *id.*

⁶⁴ See Oliver A. Houck, *Breaking the Golden Rule: Judicial Review of Federal Water Project Planning*, 65 RUTGERS L. REV. 1 (2012).

Coastal land loss averaging more than sixteen square miles annually since 1930 in the Mississippi Delta, one of the largest alluvial river deltas in the world, is a major economic and environmental tragedy.⁶⁵ The challenge was and remains to reduce land loss and to initiate restoration, both of which are huge undertakings involving all levels of government, advocacy organizations, commercial interests, and community organization, plus the Army Corps of Engineers. An initial strategy on my part on behalf of EDF, along with my scientific and legal colleagues, was to support adoption by the State of Louisiana of a permit program to regulate dredging of oil and gas equipment and pipeline canals in 1980.⁶⁶ Beyond that, it was apparent that projects known as sediment diversions that could convey sediment from the Mississippi River through that River's massive levee system and reintroduce those sediments into sediment-starved Deltaic wetlands, and barrier island restoration projects with off-shore sand as a source of material, were both crucial.⁶⁷

In 2007, in Title VII of the Water Resources Development Act, two years after Katrina, Congress approved as an initial step the Louisiana Coastal Area Ecosystem Restoration program that authorized the design and construction of two substantial sediment diversions and some barrier island projects.⁶⁸ The Corps and the State of Louisiana worked together on the planning of these projects for several years, but eventually the State, through its Coastal Protection and Restoration Authority, took over responsibility for the engineering design and construction of these projects, including the two major sediment diversions.⁶⁹ Since those diversions would each ultimately cost hundreds of millions of dollars to construct,⁷⁰ the question was always where the State could find those funds in the face of Congress' unwillingness to consider appropriations of such sums despite the role of the federal Mississippi River flood control

⁶⁵ See Bob Marshall et al., *Losing Ground*, PROPUBLICA (Aug. 28, 2014), <https://projects.propublica.org/louisiana/>.

⁶⁶ See LA. ADMIN. CODE tit. 43, § I-723 (2021) (first promulgated 1980).

⁶⁷ See *Restoration Solutions*, RESTORE THE MISS. RIVER DELTA, <https://mississippiriverdelta.org/restoration-solutions/> (last visited Mar. 10, 2021).

⁶⁸ See Water Resources Development Act of 2007, Pub. L. No. 110-114, § 7006(c), 121 Stat. 1041, 1275.

⁶⁹ See *Mississippi River Mid-Basin Sediment Diversion Program*, COASTAL PROT. AND RESTORATION AUTH., <https://coastal.la.gov/our-work/key-initiatives/diversion-program/> (last visited Mar. 10, 2021).

⁷⁰ See *id.*

and navigation levees that blocked the flow of sediment into the surrounding Delta during high water periods.

On April 20, 2010, the BP Gulf oil spill erupted and continued for three months.⁷¹ The U.S. Justice Department commenced legal action against BP and others under the criminal and civil provisions of the Clean Water Act and the Oil Pollution Act of 1990,⁷² a piece of legislation that Dick helped to negotiate following the Exxon oil spill in Alaska while he was the Assistant Attorney General. Provisions of both Acts include significant financial penalties for the negligent parties.⁷³ The question for Dick and me was how these penalties would be used. One potential tool was an EPA Supplemental Environmental Project (SEP) where a defendant facing substantial penalties could agree to undertake an approved SEP that could result in reduced penalties.⁷⁴ Dick identified several experienced academics who agreed to serve on an informal EDF advisory group to consider what a Delta restoration SEP would look like and how it could be legally structured. Dick also helped to set up a meeting that took place on December 5, 2011 with Bruce Gelber, the lead Justice Department trial lawyer in charge of the litigation, and two other lawyers Bill Brighton and Bob Dreher whom I knew. The central theme of that meeting was educating these lawyers about the deterioration of this Delta, its causes, and the benefits of dedicating some penalty dollars to support design and construction of sediment diversion and barrier island projects.

Several months later, the Justice Department and BP entered a settlement providing for \$5 billion in Clean Water Act criminal penalties.⁷⁵ The bottom line was that \$1.25 billion of these penalties could be used only to help fund River diversions and barrier island projects as overseen by the National Fish and Wildlife Foundation.

⁷¹ See, e.g., *Deepwater Horizon – BP Gulf of Mexico Oil Spill*, EPA, <https://www.epa.gov/enforcement/deepwater-horizon-bp-gulf-mexico-oil-spill> (last updated Dec. 4, 2020).

⁷² See 33 U.S.C. §§ 2701–2762.

⁷³ See, e.g., 33 U.S.C. § 1321(7); 33 U.S.C. § 2716.

⁷⁴ See generally *Supplemental Environmental Projects (SEPs)*, EPA, <https://www.epa.gov/enforcement/supplemental-environmental-projects-seps> (last visited Mar. 10, 2021).

⁷⁵ See Press Release, U.S. Dep't. of Just., U.S. and Five Gulf States Reach Historic Settlement with BP to Resolve Civil Lawsuit Over Deepwater Horizon Oil Spill (Oct. 5, 2015), <https://www.justice.gov/opa/pr/us-and-five-gulf-states-reach-historic-settlement-bp-resolve-civil-lawsuit-over-deepwater>.

I will be eternally thankful to my Yale classmate Dick Stewart for his role in advancing that worthy result.

CONCLUSION

As you can see, Dick's intelligent approach to legal problem solving and his focus on effective integration of law and economics has been a continued asset to EDF. He has contributed to many areas of EDF's work over the last almost forty-five years. For me on both a personal and professional basis, Dick's active involvement with EDF during more than forty years of my EDF service was invaluable. Hopefully this engagement with EDF will continue in the future.